Statistical Yearbook for Asia and the Pacific 2013





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Foreword

I am pleased to present the *Statistical Yearbook for Asia and the Pacific 2013*, a reference of key facts on current and emerging trends of economic, social and environmental development in Asia and the Pacific.

Whether you are looking for the most recent comparable statistics on demographic changes, major health risks or tourism, or a quick overview of the essential facts on economic, social and environmental development concerning members of ESCAP, you will find this publication useful.

Indeed, the 2013 edition of the *Statistical Yearbook* presents concise analyses highlighting major achievements and challenges for the 58 regional ESCAP member States and the five subregions in promoting economic prosperity, social inclusion and environmental sustainability. These analyses are supported with the most up-to-date and comparable data for over 300 indicators. Altogether, the publication encompasses 32 topics covering eight themes: demographic trends, health, education and knowledge, poverty and insecurity, women's empowerment, environment, economy, and connectivity. In addition to revising and updating the indicators to reflect changing development priorities, this *Yearbook* includes two new topics which are very relevant to the region: food security and crime.

You will notice that each topic is structured to first present *highlights* of development trends in the Asian and Pacific region, followed by statistical facts, charts and text boxes which cover emerging issues or recent developments or data collection and availability issues, ending with suggestions for further reading in case you would like to have more in-depth understanding of the topic. Under each topic, there are also explanations of the indicators and data sources, complete with data tables. This format is intended to make the publication an easy reference for you, whether you are searching for a particular statistic or hope to acquire an overall picture on essential issues surrounding economic, social and environmental development in Asia and the Pacific, and whether you are a government official, a researcher, an activist, a business person, or simply a citizen.

The *Yearbook* is accompanied by a series of online products, including country fact sheets, a database containing over 500 indicators and data visualization options. In order to maximize comparability across regions, subregions and countries, data at the country level have been obtained from international agencies which follow international statistical standards in compiling and reporting data.

This publication would not have been possible without the collaboration of a large number of individuals and international organizations. I am confident that the information contained in this publication will continue to support the efforts of governments, development partners and the people of Asia and the Pacific to build inclusive, sustainable and resilient societies.

Noeleen Heyzer
Under-Secretary-General of the United Nations
and Executive Secretary of ESCAP

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Did you know?

A.1. Population

The proportion of people in Asia and the Pacific within the most economically active age band is increasing. In 2012, nearly 70 per cent or 2.9 billion people in the region were aged between 15 and 64 years.

Many countries in the Asian and Pacific region are in the middle or advanced stages of a demographic transition caused by lower fertility and lower mortality levels. The result is a temporary "demographic dividend" in which a higher share of the population is in the economically productive age band between 15 and 64 years and a lower share is in the young and old-age dependency groups, which are less economically active. It is important that countries maximize the benefits of this dividend as the age structure continues to shift towards an ageing, less economically productive population that will require greater social care.

A.2. Urbanization

In 2009, more than half a billion people in Asia and the Pacific were living in slums.

Almost every country in the region has seen the percentage of urban dwellers increase in the past three decades. In 2012, an estimated 46 per cent or 1.96 billion of the Asian and Pacific population lived in urban areas, compared with less than 40 per cent 10 years earlier. In 2009, 30 per cent or half a billion urban dwellers lived in slums. This is a decrease in percentage terms from the nearly 50 per cent of urban dwellers living in slums in 1990, but due to the rapid urbanization in the region, the number of people living in slums has not fallen.

A.3. International migration

Over half of the 53 million migrants living in Asia and the Pacific in 2010 were in Australia, India, Pakistan or the Russian Federation.

In 2010, a quarter of the world's total migrant population was living in the countries of Asia and the Pacific, and more than half of these were living in just four countries: Australia, India, Pakistan and the Russian Federation. The large size of the population of Asia and the Pacific, however, results in a small number for migrants as a percentage of the total population: 1.3 per cent compared with a global average of 3.1 per cent.

B.1. Child health

A child born in 2011 had more chance of surviving until his fifth birthday than ever before.

The child mortality rate in the region halved between 1990 and 2011 from 81.5 per 1,000 live births in 1990 to 40.3 per 1,000 live births in 2011, with considerable declines in all the subregions. Despite these declines, nearly 3 million children in the region under 5 years of age died in 2011. Much work therefore remains to be done before the region can meet target 4.A of the Millennium Development Goals, which is to reduce the 1990 under-five mortality rate by two thirds before 2015.

B.2. Maternal and reproductive health

In 2010, the number of maternal deaths per 100,000 live births varied between 470 in the Lao People's Democratic Republic and 3 in Singapore.

The number of maternal deaths per 100,000 live births in the region fell from 369 in 1990 to 142 in 2010. However, there is substantial variance across the region. In such countries as the Lao People's Democratic Republic the mortality ratio was 470 deaths per 100,000 live births, similar to the Africa average of 463.

B.3. HIV and AIDS

In 2011, an estimated 5.8 million people in Asia and the Pacific were living with HIV.

More than 90 per cent of the 5.8 million people living with HIV in the region are in China, India, Indonesia, Malaysia, Myanmar, the Russian Federation, Thailand and Viet Nam. However, these countries are reporting positive results in addressing their epidemics. In 2011, AIDS-

related deaths in India, the country with the highest HIV burden in the region, stood at 147,729, a decline of 28.5 per cent compared with 2007.

B.4. Malaria and tuberculosis

In 2011, the incidence of malaria in Asia and the Pacific had fallen to 136 per 100,000 population, the lowest in over three decades. The incidence of TB is also falling, but the region still accounts for the largest population of people living with TB in the world.

The Asian and Pacific region has had significant success in reducing the incidence of malaria and several countries are on track to meet or even surpass the targets related to the reduction of malaria in Millennium Development Goal 6. The incidence of 136 per 100,000 in 2011 was below 200 for the first time since 2000 and was less than half the figure of 268 per 100,000 in 2010. Similarly, the number of new TB cases per 100,000 population in Asia and the Pacific fell from 167 in 2000 to 139 in 2011. The region has met the TB-related target of Millennium Development Goal 6 but still has the largest population of people living with TB in the world.

B.5. Other health risks

The prevalence of female smokers in 2009 was 5.1 per cent, lower than the global average, but the prevalence of male smokers was 42 per cent, higher than the global average.

From 2006 to 2009, smoking prevalence among women in the region fell from 6.4 per cent to 5.1 per cent, compared with a global average of 8.6 per cent. The prevalence of smoking among men in the region also fell, but, in contrast with women, the prevalence of 42 per cent in 2009 was higher than the global figure of 37 per cent and higher than the prevalence in all other global regions.

B.6. Financial and human resources for health

Health expenditure in Asia and the Pacific as a percentage of GDP was 6.4 per cent in 2011, considerably lower than the global aggregate of 10.1 per cent.

The economic growth and dynamism in Asia and the Pacific has generally not led to relative increases in health spending, which is still significantly lower than the global level, particularly government spending. Consequently, people in Asia and the Pacific spend more on out-of-pocket expenses than do those in any other region in the world. The subregions of East and North-East Asia and the Pacific, however, are leading the way in government spending on health and all countries with data report figures over the spending levels recommended by the World Health Organization.

C.1. Participation in education

Enrolment in pre-primary education was less than 50 per cent in about half the countries in Asia and the Pacific despite substantial increases over the last decade.

Enrolment in pre-primary education in Asia and the Pacific has increased substantially over the last 10 years, with the rate doubling or more in many countries in South and South-West Asia. However, opportunities for pre-primary education vary widely across Asia and the Pacific, and enrolment in pre-primary education was less than 50 per cent in about half the countries in the region. It was as low as 9 per cent in Bhutan and Tajikistan and over 100 per cent in the Cook Islands, Maldives, the Republic of Korea and Thailand.

C.2. Staying in school and learning to read

Only three out of every four children who start primary school in Asia and the Pacific are likely to reach the last grade of primary school.

In 2010, as many as 76 per cent of children in Asia and the Pacific starting the first grade of primary school were expected to reach the last grade. This survival rate has improved somewhat from the level of 74 per cent in 2000 but still represents a sizeable waste of learning opportunities for many children. Literacy rates for youths (aged 15-24 years), which were already as high as 95 per cent in some countries, have increased over the past decade, as more students are enrolling and staying in school.

C.3. Financial and human resources for education

Countries in the Asian and Pacific region committed between 8 per cent and 34 per cent of total public expenditure to education in 2011 (or latest available)

The 2008 Oslo Declaration recommends that countries spend between 15 per cent and 20 per cent of their total government expenditure on education. Of those countries in the region with data, 11 have reached or exceeded this target, while Azerbaijan, Pakistan and Timor-Leste spend between 8 per cent and 10 per cent on education as a share of total government expenditure, the lowest in the region.

C.4. Research and development

China and Japan have the largest expenditures on research and development in Asia and the Pacific.

China is, by far, the largest investor in R& D in Asia and the Pacific, spending over $140 billion (2005 PPP) in the year 2009. Japan followed with close to $127 billion (2005 PPP). Among the world's top 25 countries that spent the greatest share of their GDP on R& D, 5 are in the Asian and Pacific region: Republic of Korea (3.7 per cent); Japan (3.4 per cent); Australia (2.4 per cent); Singapore (2.4 per cent); and China (1.7 per cent).

D.1. Income poverty and inequality

In 2011, about 20 per cent of the population of Asia and the Pacific, or 743 million people, were living in extreme poverty, a significant reduction compared with 52 per cent, or 1.6 billion people, in 1990.

Reductions in the percentage of people in Asia and the Pacific living in extreme poverty, on less than 2005 PPP $1.25 per day, have been caused in large part by the impressive growth performance of several emerging countries in the region, in particular China and India. A large number of people, however, are living just above the extreme poverty line, in near poverty, who cannot manage a decent daily livelihood. If $2 per day (2005 PPP) is used as a benchmark, the number of poor in the Asian and Pacific region decreased from 2.4 billion in 1990 to an estimated 1.6 billion in 2011.

D.2. Access to water and sanitation

Access to improved water sources in Asia and the Pacific increased from 73 per cent in 1990 to 91 per cent in 2011. In contrast, only 59 per cent of the region had access to improved sanitation facilities in 2011.

Between 1990 and 2011, an estimated 1.5 billion people in the region gained access to improved water sources, a considerable achievement for the region. Nevertheless, in 2011, there were still 360 million people lacking access to improved water sources, which represents about 46 per cent of the world's total. There are also large disparities between the proportion of the population with access to improved water sources in rural areas (86 per cent) and that in urban areas (97 per cent). Progress towards meeting the need for improved sanitation has been relatively slow, with 1.7 billion people, or 59 per cent of the population, without access to improved sanitation facilities in 2011. This needs to rise to 68 per cent by 2015 in order to meet target 7.C of the Millennium Development Goals.

D.3. Food security

In 2012, about two thirds of the world's undernourished population lived in Asia and the Pacific.

In the period 2010 to 2012, 13 per cent of the population of Asia and the Pacific experienced severe forms of hunger and malnutrition. However, this proportion has fallen from 22 per cent in the period 1990 to 1992, and, on the basis of this trend, the region is likely to achieve the Millennium Development Goal hunger target of reducing by half the proportion of people who suffer from hunger between 1990 and 2015.

D.4. Crime

Homicide rates in Asia and the Pacific, already among the lowest in the world, are decreasing. At 2.7 per 100,000 in 2010, the rate for the region was approximately half the global rate.

The region includes countries that have some of the lowest homicide rates in world. Indeed, the three lowest homicide rates available globally for 2011 were from Asia and the Pacific, namely: Japan (0.3 per 100,000); Singapore (0.3 per 100,000); and Hong Kong, China (0.2 per 100,000).

E.1. Women's empowerment

Female employment as a proportion of male employment in Asia and the Pacific has been hovering between 62 per cent and 65 per cent since the early 1990s, similar to the global average.

Despite economic growth in the Asian and Pacific region, the economic empowerment of women lags behind. In 2012, there were only 62 employed females in the region for every 100 employed males, and the work they did was more likely to be in the sectors that are vulnerable, poorly paid and less secure. For instance, in the Asian and Pacific region, 42 per cent of employed females are in agricultural employment, compared with 36 per cent of employed males.

F.1. Atmosphere and climate change

The Asian and Pacific region was responsible for more than half of total global greenhouse gas (GHG) emissions in 2010.

In 2010, GHG emissions in the Asian and Pacific region increased by 1.5 per cent from the previous year, which is similar to the global increase. China became the single country with the largest share of global GHG emissions, accounting for about 23 per cent of the global total, which is approximately the same share as Latin America and the Caribbean and North America combined.

F.2. Energy supply and use

Although levels of per capita energy consumption in the region are lower than the global average, by 2010 the region was consuming almost half (44.5 per cent) of the world's energy supply.

Energy consumption in Asia and the Pacific has been continuously on the rise, increasing by 43 per cent from 2000 to 3,862 million tons of oil equivalent in 2010. However, the region has the third lowest per capita total primary energy supply (1,438 kilograms of oil equivalent, or koe) in the world after Africa (737 koe) and Latin America and the Caribbean (1,331 koe), and further increases in energy supply and use are likely.

F.3. Water availability and use

In 2011, total renewable water resources in the region equaled 20,521 billion m^3, which represents approximately 38 per cent of total world water availability.

Within the region, South-East Asia has the largest renewable water resources available, with about 31 per cent of the total regional water availability, and the Pacific has the least, with only 8 per cent. Asia and the Pacific has fewer renewable water resources per capita than the global average or any other region in the world, and, as its population grows, more water will be required for socio-economic activities.

F.4. Biodiversity, protected areas and forests

The share of protected marine areas in Asia and the Pacific was 5.8 per cent in 2010, well short of the target of 10 per cent by 2020.

Despite important steps taken by Pacific island countries and territories in recent years, in 2010, the share of protected marine areas in the region was 5.8 per cent of its territorial waters, compared with 7.1 per cent for the world. This is far below the 10 per cent target by 2020 specified in the Convention on Biological Diversity.

F.5. Natural disasters

Between 2002 and 2011, the Asian and Pacific region had the largest number of people affected, as well as the largest number of people killed by disasters.

In the past decade, a person living in Asia and the Pacific was 3.2 times more likely to be affected by a natural disaster than a person living in Africa, 5.5 times more likely than a person in Latin America and the Caribbean, almost 9 times more likely than a person living in North America and 67 times more likely than a person in Europe. The impact of natural disasters as a percentage of GDP is greatest in the region's low-income countries and between 2002 and 2011 averaged about 0.9 per cent, more than double the figure of about 0.4 per cent in the other income groupings.

G.1. Economic growth

In 2011, the growth rate in developing economies in the Asian and Pacific region was 6.8 per cent, slowing by almost a fifth from 8.4 per cent in 2010.

The dramatic recovery from the global financial crisis of 2008-09 slowed in 2011. This slowdown particularly affected the subregions where exports play a major role. Hence, South-East Asia experienced the greatest slowdown in the growth rate, with a fall from 8.0 per cent in 2010 to 4.5 per cent in 2011.

G.2. Fiscal balance

The average fiscal deficit in developing economies of Asia and the Pacific nearly doubled, from 1.0 per cent of GDP in the five years prior to the global financial crisis (2003-2007) to 1.9 per cent of GDP during 2008-2011.

Fiscal deficits have increased due to an unprecedented scale of fiscal support to revive domestic demand and sluggish economic activities, partly at the expense of tax revenue. Indeed, the crisis reversed the improving trend in the fiscal performance observed in the pre-crisis period, when the average deficit softened from 2.6 per cent of GDP in 2001 to 0.8 per cent of GDP in 2006 before turning to a small surplus in 2007.

G.3. Monetary measures

The inflation rate increased from 3.8 per cent in 2010 to 4.6 per cent in 2011, driven by high global food and oil prices, as well as strong domestic demand leading to higher core inflation

The rise in the inflation rate for Asia and the Pacific was driven by an increase in both demand for goods and services and the cost of producing and supplying them. Global food prices remained at almost record levels, and oil prices moved up to levels not seen since the onset of the world economic crisis. As a result, central banks in many countries in the region increased their discount rates and policymakers had to decide between supporting the domestic economy and fighting inflation. In 2012, many countries experienced currency depreciation.

G.4. Employment

Industry and services have become the predominant sectors of employment in Asia and the Pacific. Services alone accounted for 36.9 per cent of total employment in 2012, up from only 25.5 per cent in 1991.

In the past two decades, the concentration of jobs in the region has shifted rapidly from agriculture

to industry and services. Together, industry and services employed more than three fifths of all workers in the region in 2012. Generally, there was weak job growth in 2012, with employment expanding by only 1.2 per cent. Youth unemployment (people aged 15-24 years) was 10.6 per cent, more than double the rate of 4.5 per cent for the total population.

G.5. International trade

In 2012, Asia and the Pacific surpassed Europe to become the world's largest trading region.

In 2012, the region surpassed Europe to become the world's largest trading region, with a share of almost 37 per cent of world merchandise exports and 36 per cent of world merchandise imports. The region's gains in world trade were driven by the large economies in East and North-East Asia. Since 2004, China has been the largest exporter in the region, and it accounted for 11 per cent of world merchandise exports in 2012.

G.6. International financing

Foreign direct investment (FDI) inflows into Asia and the Pacific in 2012 were the highest in the world.

In 2012, the Asia-Pacific region increased its share of global FDI inflows from 33.4 per cent in 2011 to 37.5 per cent, clearly leaving behind Europe (21.4 per cent), Latin America and the Caribbean (18.1 per cent), North America (15.8 per cent), and Africa (3.7 per cent). However, the least developed countries and landlocked developing countries received 1.1 per cent and 5.2 per cent, respectively, of total FDI inflows to the region.

G.7. Tourism

Asia and the Pacific receives the second largest number of tourism arrivals, behind Europe, with 28.4 per cent of the world's total.

In 2011, 283.9 million arrivals in Asia and the Pacific were recorded, which is an increase of 21.5 million tourism arrivals from 2010. Between 2005 and 2011, the average annual growth in tourism arrivals was 6 per cent. Inbound tourism expenditure in 2011 was $362.6 billion, which is $51.8 billion more than in 2010 and equal to 28.9 per cent of the total global inbound expenditure.

H.1. Information and communications technology

Although the number of internet users in the Asian and Pacific region has been growing, only 30 per cent of the population was connected to the Internet in 2012, and fixed (wired)-broadband subscriptions were lower than 8 per cent.

The region overall has the second lowest Internet penetration rate in the world, after Africa, leaving 3 billion people — a number equivalent to almost half of the world's population — not yet connected. However, the number of Internet users in the region grew by 15.4 per cent annually between 2008 and 2012, much faster than the global annual growth rate of 11.2 per cent.

H.2. Transport

Between 2005 and 2008, road density in Asia and the Pacific increased by 5.8 per cent, greater than the increase in road density worldwide, of 3.5 per cent.

Road length and capacity have increased and the general quality of roads has improved. Yet, road traffic death rates in many countries are among the highest in the world, with more than half of the global total occurring in Asia and the Pacific. About 777,000 people were killed in road accidents in 2010 alone.

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List of abbreviations

2G	Second generation
3G	Third generation
4G	Fourth generation
AIDS	acquired immunodeficiency syndrome
ART	antiretroviral therapy
ASEAN	Association of Southeast Asian Nations
CH_4	methane
CO_2	carbon dioxide
CSIRO	Commonwealth Scientific and Industrial Research Organization
DOTS	Directly Observed Treatment Shortcourse
DSL	Digital Subscriber Line
DPT	diphtheria, pertussis and tetanus
ECO	Economic Cooperation Organization
EDGAR	Emission Database for Global Atmospheric Research
EM-DAT	Emergency Events Database
ESCAP	Economic and Social Commission for Asia and the Pacific
FAO	Food and Agriculture Organization of the United Nations
FDI	foreign direct investment
GDP	gross domestic product
GHG	greenhouse gas
GHI	Global Hunger Index
GNI	gross national income
GNP	gross national product
GPI	gender parity index
GWh	gigawatt-hour
GWP	global warming potential
HIV	human immunodeficiency virus
ICT	information and communications technology
IEA	International Energy Agency
ILO	International Labour Organization
IMF	International Monetary Fund
ISIC	International Standard Industrial Classification
ITU	International Telecommunication Union
IUCN	International Union for Conservation of Nature
koe	kilogram of oil equivalent
kWh	kilowatt-hour
LDC	least developed country
LLDC	landlocked developing country
MDG	Millennium Development Goal
MDR-TB	multi-drug resistant tuberculosis
MTOE	million tons of oil equivalent

N_2O	nitrous oxide
NAMAD	UNSD, National Accounts Main Aggregates Database
NCD	non-communicable disease
ODA	official development assistance
OECD	Organisation for Economic Co-operation and Development
PIDE	Pacific island developing economy
PM	particulate matter
ppm	parts per million
PPP	purchasing power parity
R&D	research and development
SAARC	South Asian Association for Regional Cooperation
SEEA	System of Environmental-Economic Accounting
SO_2	sulphur dioxide
TB	tuberculosis
TEU	twenty-foot equivalent unit
TPES	total primary energy supply
TWh	terawatt-hour
UIS	UNESCO Institute for Statistics
UNCTAD	United Nations Conference on Trade and Development
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
UNODC	United Nations Office on Drugs and Crime
UNWTO	World Tourism Organization
USB	Universal Serial Bus
VAW	violence against women
WHO	World Health Organization
WTO	World Trade Organization
XDR-TB	extensively drug-resistant tuberculosis

A.1. Population

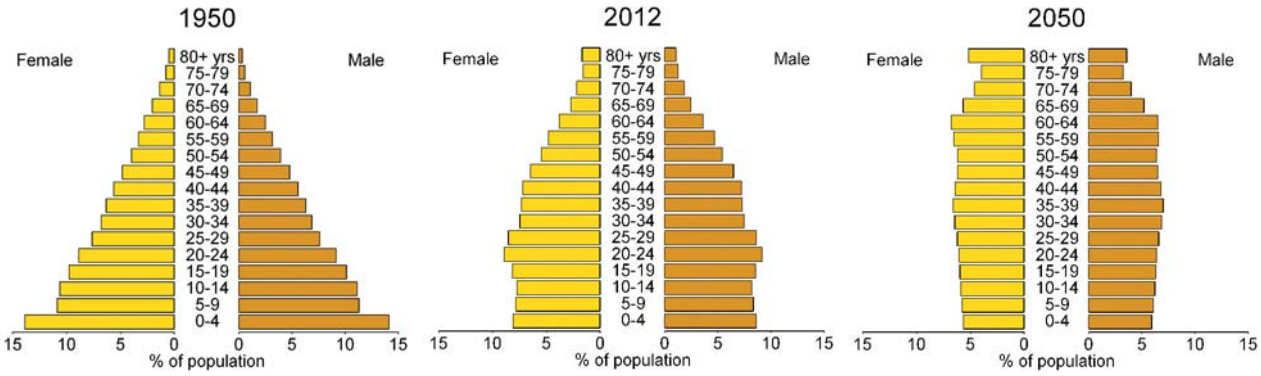
Many countries in the Asian and Pacific region are in the middle or advanced stages of a demographic transition from high fertility and high mortality levels to low fertility and low mortality levels. As a result, the age structure is changing. Younger people in economically productive age ranges and older people are forming larger shares of the population. Thus, the demographic transition is both an opportunity and looming challenge for countries in the region.

There are 2.9 billion people living in Asia and the Pacific in the economically productive age band between 15 and 64 years.

In 2012, there were 4.3 billion people living in the region, which is equal to 60 per cent of the global total of 7.1 billion people. More than 750 million of the region's population are young women and men aged 15 to 24 years, nearly half (45 per cent) of whom live in South and South-West Asia. The number of young people and their percentage of the total population have been increasing for over 60 years, but the forecast was for these to have peaked in 2010, and to decline in coming years.

The growth of the youth population is part of a larger shift in the age structure of the population caused by fewer births and deaths. The result is a short-term "demographic dividend," where a higher share of the population is of an economically productive age and a lower share is in the young and old age dependency groups, which are less economically active. To maximize this window of opportunity, investments are required in the education of young people, particularly women, in health and in employment. This investment is important as the age structure shifts towards an ageing, less economically productive population that will require greater social care. Several countries and areas in the region, including Hong Kong, China; the Republic of Korea and Singapore, serve as examples of how to successfully translate an advantageous age structure into economic and social growth.

Figure A.1-1
Population pyramid of the Asian and Pacific region in 1950, 2012 and 2050



The total fertility rate of the Asian and Pacific region is at the population replacement level of 2.1 births per woman over her lifetime.

Women in the region have on average 2.1 children by the end of their childbearing years, a considerable decline from the 3.1 children women had on average in 1990.

Fertility has decreased mainly due to better access to reproductive health services, primarily contraception, and women being older when they marry for the first time. Countries where adolescents and younger people are excluded from reproductive health services continue to have high adolescent fertility rates. Afghanistan, Bangladesh and Nepal have the highest adolescent fertility rates in the region, at approximately double the global average of

Box A.1-1
Unmet need for modern contraception

Placing universal access to reproductive health at the cornerstone of the Programme of Action of the International Conference on Population and Development[a] and including it as target 5.B of the Millennium Development Goals underline the key relationship between reproductive health and development. Progress towards achieving universal access to reproductive health is measured through several indicators, including the unmet need for family planning.

Unmet need for family planning is defined as the percentage of women who are fertile, sexually active and not using any form of contraception, who report not wanting any more children or wanting to delay the next child. This indicator measures the gap between women's reproductive intentions and their contraceptive behaviour, and is captured using data gathered in surveys such as demographic and health surveys.

The main challenge that remains in Asia and the Pacific is providing underserved populations with sexual and reproductive health services. These include women residing in rural and remote areas, as well as adolescents and youth, particularly where there is a young age of marriage and high gender inequality, such as some countries in South and South-West Asia.

Data from demographic and health surveys provide information on the unmet need for family planning among married women by age, place of residence, education and household wealth. Based on demographic and health surveys conducted since 2005, the unmet need for family planning is higher in rural areas than in urban areas for all countries in the region, and frequently the highest for women 15-19 years of age.

Despite impressive increases in the use of contraception, over 132 million women in the region aged 15-49 years continue to face an unmet need for modern contraceptive methods. Addressing disparities in the unmet need for family planning and providing sexual and reproductive health services may reduce maternal deaths in South Asia[b] and South-East Asia by 75 per cent.

Table. Unmet need for family planning among married women 15-49 years of age by residence and age, selected Asian and Pacific countries, 2005-2011

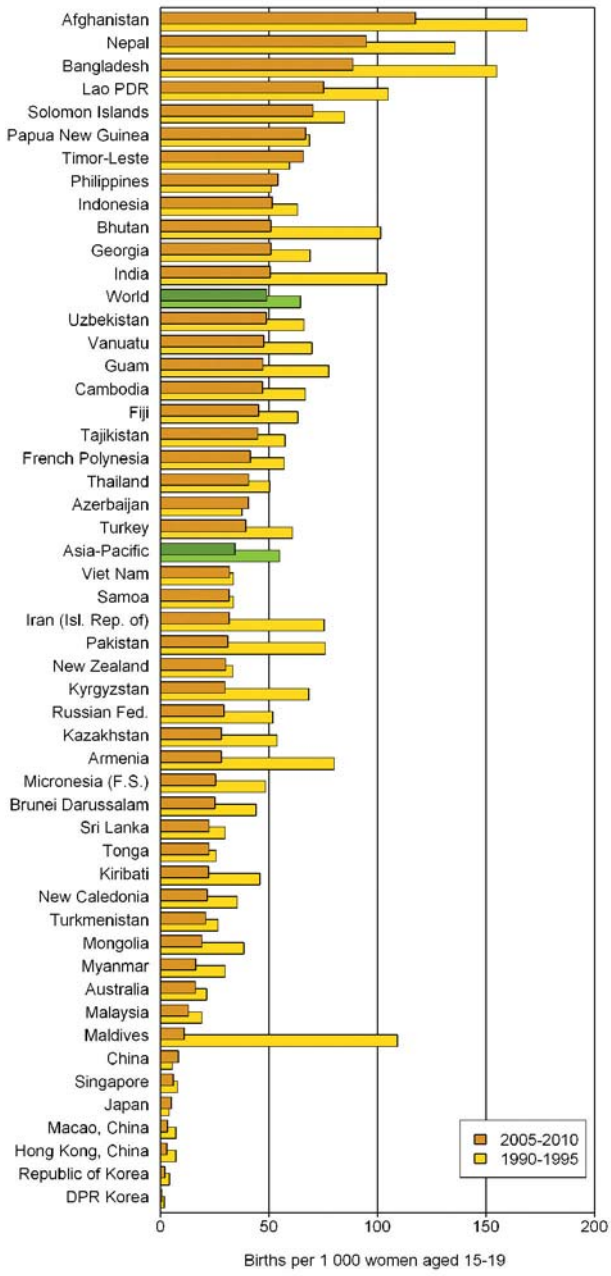
Country	Survey	Total (%)	Residence (%)		Age in years (%)						
			Urban	Rural	15-19	20-24	25-29	30-34	35-39	40-44	45-49
Armenia	2010	13.5	11.7	15.9	27.0	16.7	13.7	11.9	12.0	11.4	14.3
Azerbaijan	2006	15.4	14.8	16.1	16.4	15.8	14.8	15.0	12.7	16.6	17.6
Bangladesh	2011	13.5	11.1	14.3	17.0	15.3	15.2	13.5	11.5	10.3	7.8
Cambodia	2010	16.9	12.1	18.0	16.0	17.2	16.4	15.3	16.3	18.7	18.3
India	2005-2006	13.9	11.0	15.2	27.1	21.5	16.5	12.1	9.3	6.9	3.7
Indonesia	2007	13.1	12.9	13.3	9.3	10.0	10.3	10.4	12.4	18.7	18.9
Maldives	2009	28.6	27.0	29.4	36.9	32.0	34.6	31.0	24.8	23.4	16.0
Nepal	2011	27.5	20.0	28.7	41.6	38.3	31.2	26.3	21.1	15.9	13.4
Pakistan	2006-2007	25.2	22.0	26.7	20.2	27.1	27.1	28.7	26.9	23.1	15.5
Philippines	2008	22.0	20.6	23.5	33.7	24.6	25.2	20.2	22.3	19.9	17.2
Timor-Leste	2009-2010	31.5	30.3	31.9	27.4	35.2	32.6	32.0	34.2	31.5	21.2

Source: Measure DHS STATCompiler database. Available from www.statcompiler.com (accessed 4 July 2013).

Sources: United Nations, Millennium Indicators Database. Available from http://mdgs.un.org/unsd/mdg (accessed 3 July 2013); Susheela Singh and Jacqueline E. Darroch, *Adding It Up: Costs and Benefits of Contraceptive Services – Estimates for 2012* (New York, Guttmacher Institute and United Nations Population Fund, 2012).

[a] Held in Cairo from 5 to 13 September 1994. For the Programme of Action, see A/CONF.171/13/Rev.1.
[b] South Asia refers to Afghanistan, Bangladesh, Bhutan, India, the Islamic Republic of Iran, Maldives, Nepal, Pakistan and Sri Lanka.

Figure A.1-2
Adolescent fertility rate, Asia and the Pacific, annual average 1990-1995 and 2005-2010



49 births per 1,000 women aged 15-19 years. Rates in these countries, however, have declined by nearly half from 1990-1995 levels.

Despite the challenges to achieving universal access to sexual and reproductive health in the region, fertility rates are predicted to continue their decline in coming years. However, sustained total fertility rates below replacement (that is, less than 2.1) can result in population decline.

Asia and the Pacific has some of the highest life expectancies in the world.

Women in Asia and the Pacific live longer than men, just as they do in the rest of the world. In Australia and Hong Kong, China, the life expectancy of both males and females born in 2012 exceeds 80 years, and there are eight other countries or areas in the region where the life expectancy for women exceeds 80 years, including the Pacific island of Guam and the developing countries of Brunei Darussalam and Viet Nam.

Women tend to live longer than men for many reasons, including biological differences that result in their immune systems ageing more slowly and the later onset of cardiovascular diseases such as heart attacks and strokes. However, general increases in life expectancy for both men and women in Asia and the Pacific

Figure A.1-3a
Female life expectancies in Asian and Pacific countries, 2012

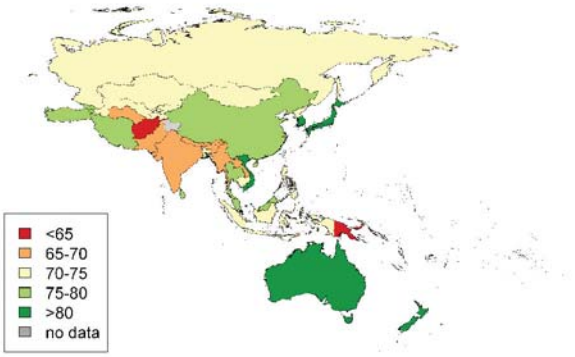
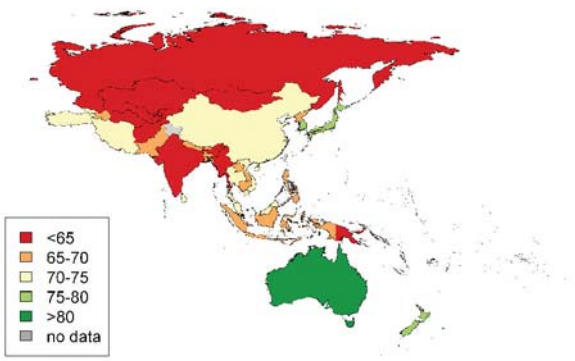


Figure A.1-3b
Male life expectancies in Asian and Pacific countries, 2012



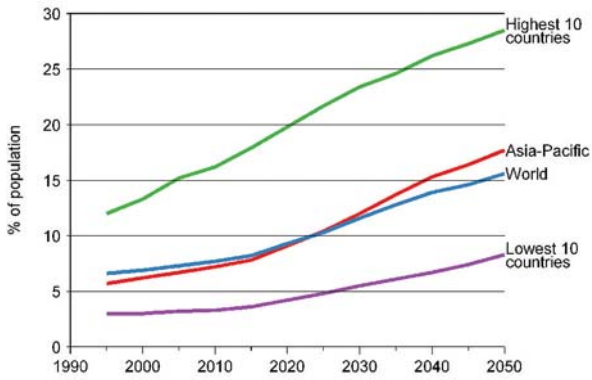
were initially caused by reductions in infant and child mortality. From 1990 to 2010 alone, the infant mortality rate for the region declined 45 per cent, from 60 to 33 deaths per 1,000 births. Improvements in health care have also increased life expectancy, and a major challenge in the region will be ensuring that a larger elderly population, who are living longer than ever before, are able to enjoy good health.

The speed at which the population of Asia and the Pacific is ageing is unprecedented.

As a result of decreasing fertility rates and increasing longevity, the proportion of older people in the Asian and Pacific population is increasing rapidly.

There are important subregional differences in the pace of ageing, but all countries in Asia and the Pacific are affected. Over the next 40 years, the number of people over 65 years of age will nearly treble from approximately 300 million in 2012 to 900 million in 2050, and their share of the total population will increase from 8 per cent to 18 per cent. Even in Japan, the country in the region with the largest share of its population aged over 65 years, further ageing is expected from 24 per cent in 2012 to 37 per cent in 2050. Many countries commonly perceived as "young" countries are also ageing. In 2012, only 5 per cent

Figure A.1-4
Rate of population ageing for Asian and Pacific countries with the lowest and highest percentage of elderly people



Box A.1-2
Intergenerational transfers and the National Transfer Accounts project

The Asian and Pacific region is witnessing unprecedented population ageing. This shift in the age structure of the population requires the right mix of economic and social policies to address the challenges and to take advantage of the opportunities presented.

As populations age, the balance between the number of workers and the number of economically inactive persons in the economy shifts. While population data on changing age structures provide an important input to evidence-informed policymaking for economic development, it does not provide an account of how economic flows between one age group to another change as a response to population ageing. This information is key as intergenerational transfers are necessary to the well-being of some of the most vulnerable of the population—children and older persons—and ensure that future generations are better off than our own.

Andrew Mason and Ronald Lee (2011) have defined the generational economy as: (a) the social institutions and economic mechanisms used by each generation or age group to produce, consume, share and save resources; (b) the economic flows across generations or age groups that characterize the generational economy; (c) explicit and implicit contracts that govern intergenerational flows; and (d) the intergenerational distribution of income or consumption that results from the foregoing.

The National Transfer Accounts project represents a collaborative effort across 41 countries, 10 of which are in Asia and the Pacific, to measure and analyse at the aggregate level the reallocations of economic resources from one age group to another. The accounts measure how each age group produces, consumes, shares, and saves resources. By using data based on age-disaggregated national accounts and estimates of private transfers, national transfer accounts provide valuable information to explore the effect of population size, growth and shifting age structures the economics of ageing.

Sources: Ronald Lee and Andrew Mason, *Population Aging and the Generational Economy: A Global Perspective* (Cheltenham, Gloucestershire, United Kingdom and Northampton, Massachusetts, United States, Edward Elgar Publishing, 2011); United Nations, Population Division, Department of Economic and Social Affairs, *National Transfer Accounts Manual: Measuring and analysing the generational economy* (New York, United Nations, 2013). E.13.XIII.6

of the population of India was aged 65 years or older, but by 2050, this figure is expected to have risen to 13 per cent. Similarly, the population aged 65 years or older in the Philippines is expected to more than double from 4 per cent in 2012 to 9 per cent in 2050.

In the region, the sex-ratio imbalances in favour of men are some of the highest in the world.

Several countries in the region have sex-ratio imbalances that are skewed towards males. The global average biological sex ratio at birth is 105 boys for every 100 girls, but the number tends to reach roughly 100 by age 20 due to higher mortality among boys. However, some countries have an unnaturally high sex-ratio imbalance at birth, which in turn leads to imbalances in the sex ratio among children 14 years of age or under. The causes of sex-ratio imbalances are still debated but include results of gender inequality, such as prenatal sex selection and higher than expected mortality among girls.

In 2012, there were 110 boys aged 14 years or under for every 100 girls aged 14 years or under in Asia and the Pacific. The five countries with the highest sex-ratio imbalances in the region were Armenia (133), China (116), Azerbaijan (115), Georgia (112) and India (111).

This imbalance has led to an increase in migration for marriage in the region but the full range of longer term effects has yet to be fully realized.

Further reading

Asia-Pacific Population Journal. Vol. 27, No. 1 (June 2012). ST/ESCAP/2651.

Bloom, David E., David Canning and Jaypee Sevilla. *The Demographic Dividend: A New Perspective on the Economic Consequences of Population Change* (RAND, 2003).

Guilmoto, Christophe. *The sex ratio transition in Asia. Population and Development Review, vol. 35, No. 3* (September 2009), pp. 519-549.

Technical notes

Population (thousands, percentage change per annum)

De facto midyear population, covering all residents, regardless of legal status or citizenship, except for refugees not permanently settled in the country of asylum. **Aggregate calculations:** Sum of individual country values (thousands); weighted averages using population (WPP2012) as weight (percentage change per annum). Missing data are not imputed.

Crude birth and death rates (per 1,000 population)

Birth: The number of births during a given period divided by the total number of person-years lived by the population during that period (person-years for a calendar year is approximated as the midyear population). Death: The number of deaths occurring during a period divided by the person-years for that period. **Aggregate calculations:** Weighted averages using population (WPP2012) as weight. Missing data are not imputed.

Fertility rate (live births per woman)

The average number of live births per woman. This represents the number of live births a woman will have by the end of her reproductive period assuming the current prevailing age-specific fertility rates continue throughout her childbearing life. **Indicator calculations:** Number of births divided by the number of women. **Aggregate calculations:** Weighted averages using women aged 15-49 years (WPP2012) as weight. Missing data are not imputed.

Adolescent fertility rate (live births per 1,000 women aged 15-19)

The average number of births a woman 15-19 years of age will experience. **Indicator calculations:** The number of live births to women aged 15-19 years divided by the number of women in the same age group. **Aggregate calculations:** Weighted averages using women aged 15-19 years (WPP2012) as weight. Missing data are not imputed.

Population and child sex ratios (males or boys per 100 females or girls)

Population: The ratio of the number of males to females expressed per 100. Child: The ratio of boys aged 0-14 years to girls aged 0-14 years, expressed per 100. **Indicator calculations:** Male or boy population divided by female or girl population. **Aggregate calculations:** Sum of individual country values for the male or boy population divided by the sum of individual country values for the female or girl population. Missing data are not imputed.

Child and elderly population (percentage of population)

Children: Children aged 0-14 years. Elderly: People aged 65 years or older. **Indicator calculations:** The percentage of the child or elderly population of the total population. **Aggregate calculations:** Sum of individual country values for the child or elderly population divided by sum of the individual country values for the total population. Missing data are not imputed.

Life expectancy at birth: females and males (years)

The number of years a newborn infant would live if prevailing patterns of age-specific mortality rates at the time of birth were to stay the same throughout the child's life. Missing data are not imputed.

Source

Source of population data: WPP2012. Estimated demographic trends are projections based on censuses, administrative data and surveys provided by countries through an annual questionnaire. Population data from all sources are evaluated by the United Nations for completeness, accuracy and consistency. **Data obtained:** 14 June 2013.

A.1.1 Population, births and deaths

	Population size				Population growth			Crude birth rate			Crude death rate		
	Thousands				% change per annum			Per 1,000 population			Per 1,000 population		
	1990	2000	2010	2012	90-00	00-10	2012	1990	2000	2012	1990	2000	2012
East and North-East Asia	**1 359 183**	**1 484 625**	**1 570 426**	**1 588 582**	**0.9**	**0.6**	**0.6**	**21.5**	**12.3**	**12.9**	**6.8**	**6.6**	**7.3**
China	1 165 429	1 280 429	1 359 821	1 377 065	0.9	0.6	0.6	22.9	12.6	13.4	6.9	6.5	7.1
DPR Korea	20 194	22 840	24 501	24 763	1.2	0.7	0.5	20.8	17.9	14.4	5.7	9.1	9.2
Hong Kong, China	5 794	6 835	7 050	7 148	1.7	0.3	0.7	12.6	7.9	9.4	5.4	5.4	6.2
Japan	122 249	125 715	127 353	127 250	0.3	0.1	-0.1	10.5	9.2	8.4	6.7	7.7	9.7
Macao, China	360	432	535	557	1.8	2.2	1.9	19.3	9.1	10.0	5.5	4.9	4.8
Mongolia	2 184	2 397	2 713	2 796	0.9	1.2	1.5	32.2	19.3	22.9	10.1	7.7	6.8
Republic of Korea	42 972	45 977	48 454	49 003	0.7	0.5	0.6	15.6	11.8	9.6	5.6	5.4	5.5
South-East Asia	**443 735**	**524 410**	**597 097**	**611 529**	**1.7**	**1.3**	**1.2**	**27.1**	**21.4**	**18.6**	**7.4**	**6.6**	**6.4**
Brunei Darussalam	257	332	401	412	2.6	1.9	1.4	31.5	22.8	15.9	3.5	2.8	3.1
Cambodia	9 057	12 223	14 365	14 865	3.0	1.6	1.8	42.3	27.5	25.9	12.4	8.5	6.0
Indonesia	178 633	208 939	240 676	246 864	1.6	1.4	1.3	25.9	21.5	19.2	7.8	6.8	6.3
Lao PDR	4 245	5 388	6 396	6 646	2.4	1.7	1.9	42.9	30.9	27.3	13.3	8.4	6.1
Malaysia	18 211	23 421	28 276	29 240	2.5	1.9	1.7	28.2	22.7	17.6	4.9	4.4	4.7
Myanmar	42 123	48 453	51 931	52 797	1.4	0.7	0.9	26.8	20.9	17.4	10.1	8.8	8.5
Philippines	61 949	77 652	93 444	96 707	2.3	1.9	1.7	33.0	29.6	24.6	6.6	6.1	6.0
Singapore	3 016	3 918	5 079	5 303	2.7	2.6	2.1	18.0	12.6	9.9	4.4	4.6	4.7
Thailand	56 583	62 343	66 402	66 785	1.0	0.6	0.3	19.2	14.6	10.5	5.6	6.8	7.6
Timor-Leste	751	854	1 079	1 114	1.3	2.4	1.6	42.9	42.5	35.9	15.7	9.4	5.9
Viet Nam	68 910	80 888	89 047	90 796	1.6	1.0	1.0	28.8	17.3	15.9	6.3	5.4	5.7
South and South-West Asia	**1 245 642**	**1 511 026**	**1 753 545**	**1 800 441**	**2.0**	**1.5**	**1.3**	**32.0**	**26.2**	**21.2**	**10.3**	**8.4**	**7.4**
Afghanistan	11 731	20 595	28 398	29 825	5.8	3.3	2.5	50.5	50.0	35.3	16.3	12.3	8.1
Bangladesh	107 386	132 383	151 125	154 695	2.1	1.3	1.2	35.1	27.0	20.3	10.1	7.2	5.7
Bhutan	536	564	717	742	0.5	2.4	1.7	37.9	27.6	19.9	13.4	8.9	6.5
India	868 891	1 042 262	1 205 625	1 236 687	1.8	1.5	1.3	30.7	25.6	20.7	10.6	8.9	7.9
Iran (Islamic Rep. of)	56 362	65 911	74 462	76 424	1.6	1.2	1.3	33.2	18.7	19.0	7.5	5.3	5.2
Maldives	216	273	326	338	2.4	1.8	2.0	41.3	24.5	22.2	9.4	5.1	3.4
Nepal	18 111	23 184	26 846	27 474	2.5	1.5	1.2	37.9	32.8	21.6	12.5	8.7	6.7
Pakistan	111 091	143 832	173 149	179 160	2.6	1.9	1.7	40.3	31.2	25.7	10.1	8.0	7.0
Sri Lanka	17 324	18 846	20 759	21 098	0.8	1.0	0.8	20.6	18.5	18.1	6.5	7.0	7.0
Turkey	53 995	63 174	72 138	73 997	1.6	1.3	1.3	26.0	21.5	17.1	8.2	6.4	5.7
North and Central Asia	**214 457**	**217 747**	**221 759**	**223 275**	**0.2**	**0.2**	**0.3**	**18.4**	**12.8**	**15.4**	**10.9**	**13.1**	**12.6**
Armenia	3 545	3 076	2 963	2 969	-1.4	-0.4	0.2	21.6	13.2	13.9	8.5	8.5	8.7
Azerbaijan	7 217	8 118	9 095	9 309	1.2	1.1	1.2	27.4	17.5	18.1	8.5	7.0	6.8
Georgia	5 460	4 744	4 389	4 358	-1.4	-0.8	-0.4	16.9	12.0	13.5	9.5	10.0	11.5
Kazakhstan	16 172	14 576	15 921	16 271	-1.0	0.9	1.1	23.5	15.8	20.9	8.7	11.4	10.1
Kyrgyzstan	4 395	4 955	5 334	5 474	1.2	0.7	1.3	31.2	22.0	27.0	8.4	7.7	7.6
Russian Federation	148 149	146 763	143 618	143 170	-0.1	-0.2	-0.2	13.6	9.1	11.8	12.0	15.5	15.3
Tajikistan	5 297	6 186	7 627	8 009	1.6	2.1	2.5	40.4	30.5	33.1	9.8	7.8	6.6
Turkmenistan	3 668	4 501	5 042	5 173	2.1	1.1	1.3	35.3	23.7	21.5	8.8	7.7	7.8
Uzbekistan	20 555	24 829	27 769	28 541	1.9	1.1	1.4	34.2	23.4	21.8	7.5	6.6	6.7
Pacific	**26 954**	**31 208**	**36 644**	**37 760**	**1.5**	**1.6**	**1.5**	**19.6**	**18.1**	**17.2**	**7.8**	**7.2**	**6.8**
American Samoa	47	58	56	55	2.0	-0.3	-0.3						
Australia	17 097	19 259	22 404	23 050	1.2	1.5	1.4	14.9	13.0	13.3	7.2	6.8	6.6
Cook Islands	18	18	20	21	0.1	1.3	0.6						
Fiji	728	812	861	875	1.1	0.6	0.8	28.9	24.8	20.8	6.3	6.1	6.7
French Polynesia	198	237	268	274	1.8	1.2	1.1	28.3	20.0	16.6	5.5	4.8	5.4
Guam	130	155	159	163	1.8	0.3	1.2	25.6	21.9	17.5	4.7	4.5	4.8
Kiribati	71	83	98	101	1.5	1.7	1.5	36.0	28.8	23.3	9.3	7.1	6.0
Marshall Islands	47	52	52	53	1.0	0.1	0.1						
Micronesia (F.S.)	96	107	104	103	1.1	-0.4	0.0	34.0	29.9	23.5	6.5	6.3	6.2
Nauru	9	10	10	10	0.9	0.0	0.1						
New Caledonia	169	210	246	253	2.2	1.6	1.3	23.7	19.4	15.8	6.0	5.5	6.8
New Zealand	3 398	3 858	4 368	4 460	1.3	1.2	1.0	16.8	14.4	14.0	8.0	7.3	7.0
Niue	2	2	1	1	-2.0	-2.5	-2.9						
Northern Mariana Islands	44	68	54	53	4.5	-2.4	0.1						
Palau	15	19	20	21	2.4	0.7	0.7						
Papua New Guinea	4 158	5 379	6 859	7 167	2.6	2.5	2.2	35.1	35.0	29.3	10.5	9.1	7.7
Samoa	163	175	186	189	0.7	0.6	0.8	33.1	30.6	26.8	7.3	6.1	5.5
Solomon Islands	312	412	526	550	2.8	2.5	2.2	40.0	35.6	31.5	11.0	7.7	5.9
Tonga	95	98	104	105	0.3	0.6	0.4	31.1	28.3	26.1	6.0	6.3	6.1
Tuvalu	9	9	10	10	0.5	0.4	0.2						
Vanuatu	147	185	236	247	2.4	2.5	2.3	36.1	32.4	26.9	8.1	6.2	4.8
Asia and the Pacific	**3 289 971**	**3 769 016**	**4 179 470**	**4 261 587**	**1.4**	**1.0**	**1.0**	**26.0**	**19.2**	**17.4**	**8.5**	**7.7**	**7.5**
Developed countries	142 744	148 832	154 125	154 760	0.4	0.4	0.2	11.1	9.8	9.3	6.8	7.6	9.1
Developing countries	3 147 227	3 620 184	4 025 345	4 106 827	1.4	1.1	1.0	26.7	19.6	17.7	8.5	7.7	7.4
LLDC	97 655	118 370	138 821	143 230	1.9	1.6	1.6	34.7	28.9	25.1	10.3	8.9	7.5
LDC	194 642	244 509	281 914	289 254	2.3	1.4	1.3	35.0	28.5	22.0	10.9	8.2	6.6
ASEAN	442 984	523 557	596 018	610 415	1.7	1.3	1.2	27.1	21.4	18.5	7.4	6.6	6.4
ECO	290 482	356 677	418 936	432 184	2.1	1.6	1.6	34.8	26.5	23.2	9.1	7.5	6.6
SAARC	1 135 285	1 381 940	1 606 945	1 650 019	2.0	1.5	1.3	32.2	26.7	21.5	10.5	8.7	7.6
Central Asia	66 308	70 984	78 141	80 105	0.7	1.0	1.3	29.1	20.5	21.9	8.4	8.2	7.9
Pacific island dev. econ.	6 459	8 090	9 872	10 250	2.3	2.0	1.9	33.8	32.5	27.5	9.3	8.2	7.2
Low income econ.	218 295	270 820	310 128	317 903	2.2	1.4	1.3	33.6	27.4	21.6	10.3	8.3	6.8
Lower middle income econ.	1 349 891	1 621 574	1 877 753	1 927 868	1.9	1.5	1.3	30.8	25.2	21.0	9.7	8.2	7.4
Upper middle income econ.	1 526 071	1 669 595	1 775 187	1 797 858	0.9	0.6	0.6	22.5	13.1	13.7	7.4	7.2	7.6
High income econ.	195 685	206 998	216 371	217 927	0.6	0.4	0.3	12.4	10.3	9.4	6.4	6.9	8.1
Africa	**629 987**	**808 304**	**1 031 084**	**1 083 524**	**2.5**	**2.5**	**2.5**	**41.5**	**38.2**	**35.6**	**14.5**	**13.6**	**10.6**
Europe	**575 866**	**583 286**	**597 794**	**599 931**	**0.1**	**0.2**	**0.2**	**12.4**	**10.3**	**10.6**	**10.6**	**10.7**	**10.6**
Latin America and Carib.	**445 190**	**526 264**	**596 174**	**609 788**	**1.7**	**1.3**	**1.1**	**26.6**	**22.6**	**18.1**	**6.8**	**6.0**	**5.9**
North America	**282 286**	**315 417**	**346 501**	**352 471**	**1.1**	**0.9**	**0.8**	**15.7**	**13.9**	**13.1**	**8.6**	**8.4**	**8.2**
World	**5 320 817**	**6 127 700**	**6 916 183**	**7 080 072**	**1.4**	**1.2**	**1.2**	**26.0**	**21.1**	**19.6**	**9.2**	**8.6**	**8.1**

A.1.2 Fertility and population sex ratios

	Fertility rate				Adolescent fertility rate				Population sex ratio			Child sex ratio		
	Live births per woman				Live births per 1,000 women aged 15-19				Males per 100 females			Boys per 100 girls		
	1990	2000	2010	2012	90-95	95-00	00-05	05-10	1990	2000	2012	1990	2000	2012
East and North-East Asia	**2.4**	**1.5**	**1.6**	**1.6**	**5.4**	**5.7**	**7.2**	**8.0**	**105.2**	**105.4**	**105.9**	**107.5**	**111.2**	**115.4**
China	2.5	1.5	1.7	1.7	5.5	5.9	7.5	8.4	106.6	106.8	107.5	107.6	111.7	116.7
DPR Korea	2.3	2.0	2.0	2.0	1.8	1.2	1.0	0.6	94.4	95.1	95.6	104.5	104.5	104.5
Hong Kong, China	1.3	0.9	1.1	1.1	7.0	5.0	3.8	3.1	104.6	94.6	87.8	108.1	106.2	107.2
Japan	1.6	1.3	1.4	1.4	4.0	4.4	5.8	5.1	96.2	95.7	94.8	105.0	104.9	105.2
Macao, China	1.7	0.9	1.0	1.1	7.0	6.4	4.2	3.2	94.8	93.4	92.5	106.1	110.0	107.1
Mongolia	4.1	2.1	2.4	2.4	38.4	31.4	21.6	19.0	97.5	99.5	98.3	99.8	101.4	102.1
Republic of Korea	1.6	1.4	1.3	1.3	4.2	3.0	2.2	2.1	100.3	100.7	98.9	108.7	111.8	107.5
South-East Asia	**3.3**	**2.5**	**2.3**	**2.2**	**50.5**	**41.4**	**42.1**	**42.5**	**99.2**	**99.0**	**98.8**	**103.2**	**103.9**	**104.9**
Brunei Darussalam	3.5	2.4	2.1	2.0	44.1	28.8	26.2	25.1	112.3	103.3	102.7	106.8	107.5	105.8
Cambodia	5.6	3.8	3.0	2.9	66.8	50.2	48.4	47.0	93.3	94.4	95.2	101.2	103.3	105.0
Indonesia	3.1	2.5	2.4	2.4	63.1	47.8	51.0	51.5	100.1	100.0	101.3	103.2	103.5	105.9
Lao PDR	6.2	4.2	3.3	3.1	104.9	86.6	71.4	75.1	100.1	99.4	99.0	103.4	103.5	104.1
Malaysia	3.5	2.8	2.0	2.0	19.0	15.0	13.0	12.8	103.1	103.5	94.2	105.3	105.3	95.5
Myanmar	3.4	2.4	2.0	2.0	29.8	23.7	19.3	16.2	95.8	96.0	94.3	99.9	100.6	101.2
Philippines	4.3	3.8	3.2	3.1	51.0	49.1	53.9	54.1	102.1	101.5	100.4	104.5	104.7	104.9
Singapore	1.7	1.5	1.3	1.3	7.9	7.4	7.5	6.0	101.3	99.8	97.4	107.7	106.8	104.5
Thailand	2.1	1.7	1.4	1.4	50.2	45.7	41.9	40.6	98.2	96.3	96.0	103.6	104.6	104.2
Timor-Leste	5.3	7.1	6.2	6.0	59.5	71.9	70.1	65.8	105.3	104.2	103.3	106.5	103.7	104.1
Viet Nam	3.6	2.0	1.8	1.8	33.7	28.9	28.5	31.7	96.8	97.0	97.7	103.6	104.8	108.4
South and South-West Asia	**4.1**	**3.2**	**2.6**	**2.5**	**103.2**	**87.1**	**70.2**	**52.1**	**106.9**	**106.5**	**105.5**	**106.7**	**107.9**	**109.3**
Afghanistan	7.7	7.7	5.7	5.1	168.7	170.1	150.5	117.5	105.4	103.6	102.9	106.3	104.1	104.6
Bangladesh	4.6	3.1	2.3	2.2	154.9	130.3	107.5	88.7	107.7	106.6	102.6	104.1	104.5	104.6
Bhutan	5.6	3.6	2.4	2.3	101.5	90.8	69.5	50.9	107.3	105.8	116.1	102.1	102.4	103.1
India	3.9	3.1	2.6	2.5	104.1	88.8	72.2	50.6	107.7	107.6	107.1	107.7	109.4	111.0
Iran (Islamic Rep. of)	4.8	2.2	1.9	1.9	75.4	48.3	33.6	31.5	104.5	103.4	101.5	105.3	104.5	104.6
Maldives	6.1	3.3	2.3	2.3	109.1	58.1	24.9	11.0	107.1	104.0	101.5	104.8	105.7	105.6
Nepal	5.2	4.1	2.6	2.4	135.7	129.3	114.0	94.8	100.7	99.3	94.2	104.8	105.0	105.5
Pakistan	6.0	4.5	3.4	3.3	75.9	58.8	40.5	30.9	107.6	106.7	105.6	105.8	106.5	108.2
Sri Lanka	2.5	2.2	2.3	2.3	29.8	29.0	27.6	22.3	102.0	99.5	95.8	103.8	103.9	103.1
Turkey	3.1	2.5	2.1	2.1	60.8	52.4	44.8	39.3	97.4	96.8	96.5	102.2	103.1	104.1
North and Central Asia	**2.4**	**1.6**	**1.9**	**1.9**	**54.2**	**39.7**	**32.3**	**33.9**	**90.2**	**90.3**	**89.7**	**103.3**	**104.4**	**105.6**
Armenia	2.5	1.7	1.7	1.7	80.1	49.9	33.8	28.0	94.2	88.6	106.3	102.9	106.4	133.0
Azerbaijan	3.0	2.0	2.0	1.9	37.5	41.4	34.3	40.5	96.0	95.5	98.7	105.4	106.7	115.2
Georgia	2.2	1.6	1.8	1.8	68.9	60.5	48.5	50.9	90.6	89.8	89.2	104.4	104.8	112.9
Kazakhstan	2.8	1.9	2.5	2.5	53.7	42.1	29.1	28.1	93.9	92.2	93.0	102.8	105.1	105.4
Kyrgyzstan	3.9	2.7	3.0	3.1	68.3	63.1	34.4	29.8	95.7	97.4	97.3	102.2	103.9	104.0
Russian Federation	1.9	1.2	1.5	1.5	51.8	35.1	27.6	29.3	87.8	87.6	85.7	103.5	104.6	105.1
Tajikistan	5.2	4.0	3.8	3.8	57.4	50.2	40.9	44.8	98.7	100.5	101.0	102.5	103.2	104.8
Turkmenistan	4.3	2.8	2.4	2.4	26.4	25.4	24.4	20.9	97.3	97.5	96.9	102.3	102.6	103.0
Uzbekistan	4.2	2.7	2.4	2.3	66.1	50.0	50.0	48.8	97.9	99.0	99.0	102.8	103.4	103.6
Pacific	**2.5**	**2.4**	**2.4**	**2.4**	**36.8**	**36.8**	**33.5**	**32.7**	**100.4**	**99.6**	**100.1**	**105.6**	**105.8**	**106.2**
American Samoa														
Australia	1.9	1.7	1.9	1.9	21.3	19.2	16.7	16.0	99.5	98.5	99.1	105.4	105.2	105.3
Cook Islands														
Fiji	3.4	3.1	2.7	2.6	63.4	45.8	41.5	45.2	103.2	103.2	104.0	105.6	106.1	106.7
French Polynesia	3.4	2.5	2.1	2.1	56.9	49.2	46.2	41.5	108.2	106.1	104.7	105.1	107.0	104.2
Guam	3.0	2.8	2.5	2.4	77.5	69.9	57.3	47.1	114.4	104.6	103.1	104.1	106.5	106.7
Kiribati	4.6	3.9	3.0	3.0	45.9	41.6	30.1	22.2	98.9	99.1	98.9	103.4	105.9	104.2
Marshall Islands														
Micronesia (F.S.)	5.0	4.3	3.5	3.3	48.4	44.8	34.3	25.4	104.7	102.5	104.6	107.8	107.5	107.0
Nauru														
New Caledonia	3.0	2.4	2.2	2.1	35.4	16.3	19.0	21.5	104.1	102.6	102.7	103.5	105.0	106.0
New Zealand	2.1	1.9	2.1	2.1	33.4	29.9	26.7	30.1	97.0	96.4	96.5	104.4	105.5	105.2
Niue														
Northern Mariana Islands														
Palau														
Papua New Guinea	4.8	4.5	4.0	3.8	68.6	75.6	71.0	66.9	104.7	104.0	104.1	106.1	106.5	107.6
Samoa	5.1	4.5	4.3	4.2	33.7	45.1	37.0	31.7	109.2	108.7	106.4	114.3	109.6	107.4
Solomon Islands	5.9	4.7	4.2	4.1	84.8	71.1	70.1	70.3	105.7	105.6	103.0	106.7	107.2	106.7
Tonga	4.6	4.3	3.9	3.8	25.5	22.5	21.3	22.3	102.9	103.5	100.4	107.7	108.8	108.2
Tuvalu														
Vanuatu	4.9	4.4	3.5	3.4	69.8	62.0	54.7	47.7	105.9	104.7	103.0	108.7	106.8	108.8
Asia and the Pacific	**3.1**	**2.3**	**2.1**	**2.1**	**54.9**	**49.7**	**41.3**	**34.2**	**103.9**	**103.9**	**103.7**	**106.2**	**108.2**	**110.0**
Developed countries	1.6	1.4	1.5	1.5	6.9	7.1	8.2	8.1	96.6	96.1	95.5	105.0	105.0	105.2
Developing countries	3.2	2.4	2.2	2.1	56.5	50.9	42.1	34.8	104.2	104.2	104.0	106.3	108.3	110.1
LLDC	4.5	3.6	3.1	3.0	90.8	85.7	74.6	66.5	98.4	98.5	98.3	103.8	104.2	105.3
LDC	4.6	3.4	2.6	2.5	121.4	105.8	90.1	76.7	103.3	102.6	99.8	103.3	103.8	104.2
ASEAN	3.3	2.5	2.3	2.2	50.5	41.3	42.1	42.4	99.2	99.0	98.8	103.2	103.9	104.9
ECO	4.8	3.4	2.9	2.8	73.8	59.3	45.7	39.3	102.7	102.3	101.7	104.6	105.0	106.3
SAARC	4.2	3.3	2.7	2.6	106.8	91.0	73.7	53.8	107.5	107.1	106.1	107.0	108.3	109.7
Central Asia	3.5	2.5	2.5	2.5	58.0	47.4	39.8	39.8	95.8	96.0	97.3	103.1	104.1	106.2
Pacific island dev. econ.	4.5	4.2	3.7	3.6	65.9	67.5	63.2	60.4	104.9	104.1	103.9	106.3	106.6	107.4
Low income econ.	4.3	3.3	2.6	2.5	110.3	98.1	82.8	70.3	102.3	101.9	99.4	103.3	103.8	104.2
Lower middle income econ.	3.9	3.1	2.6	2.5	87.6	73.8	62.1	47.6	105.4	105.3	105.0	106.4	107.7	109.4
Upper middle income econ.	2.5	1.6	1.7	1.7	17.3	15.6	13.7	13.8	103.6	103.8	104.0	106.7	110.0	113.2
High income econ.	1.6	1.4	1.4	1.4	6.4	6.1	6.7	6.5	97.8	97.2	96.1	106.2	106.9	105.8
Africa	**6.0**	**5.2**	**4.8**	**4.7**	**118.9**	**113.1**	**108.8**	**103.5**	**99.6**	**99.7**	**99.9**	**102.1**	**102.1**	**102.5**
Europe	**1.7**	**1.4**	**1.6**	**1.6**	**25.9**	**20.7**	**17.2**	**16.3**	**93.9**	**94.0**	**94.6**	**104.8**	**105.2**	**105.4**
Latin America and Carib.	**3.2**	**2.6**	**2.2**	**2.2**	**84.3**	**86.3**	**81.2**	**73.2**	**98.9**	**97.3**	**96.9**	**103.1**	**103.0**	**104.2**
North America	**2.0**	**2.0**	**2.0**	**2.0**	**56.3**	**48.4**	**40.6**	**37.3**	**95.4**	**96.5**	**97.0**	**104.9**	**104.9**	**104.5**
World	**3.3**	**2.6**	**2.5**	**2.5**	**64.5**	**60.7**	**54.4**	**48.9**	**101.5**	**101.5**	**101.6**	**105.1**	**106.2**	**107.1**

A.1.3 Population age structure and life expectancy

	Child population				Elderly population				Life expectancy at birth Male				Life expectancy at birth Female			
	% of population				% of population				Years				Years			
	1990	2000	2010	2012	1990	2000	2010	2012	1990	2000	2010	2012	1990	2000	2010	2012
East and North-East Asia	**28.1**	**24.5**	**17.7**	**17.6**	**6.3**	**7.8**	**9.6**	**10.1**								
China	29.3	25.6	18.1	18.0	5.8	6.9	8.4	8.7	67.9	70.7	73.6	73.9	71.1	73.6	76.2	76.5
DPR Korea	26.8	26.0	22.7	21.9	4.4	5.9	8.8	9.3	66.0	61.2	65.5	66.1	72.9	69.0	72.5	73.1
Hong Kong, China	21.5	17.3	12.1	11.8	8.7	11.0	12.9	13.6	74.6	77.6	79.8	80.2	80.7	83.3	85.9	86.3
Japan	18.3	14.6	13.3	13.1	11.9	17.2	23.0	24.3	75.9	77.7	79.6	79.9	81.9	84.5	86.4	86.8
Macao, China	25.4	22.8	12.7	12.4	6.7	7.4	7.2	7.8	73.0	75.3	77.4	77.9	77.6	80.0	82.1	82.4
Mongolia	40.5	34.8	27.0	27.2	4.1	3.7	3.8	3.8	57.8	60.1	63.0	63.5	62.9	65.9	71.0	71.4
Republic of Korea	25.6	21.0	16.2	15.3	5.0	7.3	11.1	11.8	67.5	72.4	77.3	77.8	75.9	79.7	84.0	84.6
South-East Asia	**36.7**	**31.6**	**28.2**	**27.5**	**4.1**	**4.9**	**5.5**	**5.6**								
Brunei Darussalam	34.5	30.4	26.6	25.7	2.7	2.8	3.7	4.0	71.9	74.2	76.1	76.5	75.6	78.0	80.0	80.3
Cambodia	44.2	40.8	31.8	31.1	3.2	3.8	5.0	5.2	52.2	59.3	68.0	68.8	57.4	64.6	73.4	74.2
Indonesia	36.4	30.7	29.8	29.3	3.8	4.7	5.0	5.1	61.5	65.3	68.2	68.6	65.5	69.3	72.2	72.7
Lao PDR	44.2	43.5	36.8	35.8	3.5	3.6	3.7	3.8	52.9	60.4	65.6	66.5	55.4	62.9	68.2	69.2
Malaysia	37.1	33.3	27.7	26.5	3.6	3.8	4.8	5.2	69.0	70.9	72.2	72.6	72.6	74.9	76.9	77.2
Myanmar	37.7	30.7	26.1	25.3	4.2	4.7	5.1	5.2	56.5	60.0	62.6	62.9	61.0	64.2	66.7	67.1
Philippines	40.9	38.5	35.3	34.5	3.1	3.2	3.7	3.8	62.5	63.7	64.9	65.2	68.0	70.0	71.7	72.1
Singapore	21.5	21.5	17.3	16.5	5.6	7.3	9.0	9.7	73.9	75.9	79.3	79.6	78.2	80.8	84.2	84.6
Thailand	30.2	24.2	19.3	18.5	4.5	6.6	8.9	9.4	67.4	67.2	70.5	70.9	73.6	74.8	77.2	77.6
Timor-Leste	39.7	49.8	47.3	46.5	1.9	2.4	3.1	3.2	46.9	58.3	64.5	65.5	50.1	60.7	67.5	68.6
Viet Nam	37.4	31.6	23.5	22.9	5.7	6.4	6.5	6.5	66.1	69.0	70.7	71.1	75.1	78.5	80.2	80.4
South and South-West Asia	**38.8**	**35.2**	**30.7**	**30.0**	**3.9**	**4.3**	**5.0**	**5.2**								
Afghanistan	48.7	49.5	48.6	47.4	1.9	2.0	2.2	2.3	47.6	53.8	58.4	59.3	49.6	56.0	60.9	61.8
Bangladesh	42.1	37.0	31.7	30.5	3.7	4.1	4.6	4.7	60.3	65.1	68.8	69.5	59.7	65.6	70.2	71.1
Bhutan	43.6	40.6	29.8	28.6	3.0	3.8	4.5	4.7	52.6	60.2	66.7	67.6	52.3	60.4	67.3	68.2
India	37.5	34.2	30.2	29.4	3.9	4.4	5.1	5.2	58.1	61.0	64.0	64.5	59.0	63.4	67.5	68.0
Iran (Islamic Rep. of)	45.3	34.7	23.6	23.7	3.3	4.2	5.2	5.2	61.2	68.7	71.3	71.9	65.8	70.6	75.1	75.7
Maldives	46.8	41.3	30.0	29.1	2.9	3.8	5.0	5.0	61.1	68.7	75.8	76.5	60.1	70.3	77.9	78.7
Nepal	42.2	40.4	37.1	35.5	3.5	3.8	4.9	5.1	54.6	61.2	66.0	66.9	55.5	63.0	68.2	69.1
Pakistan	43.6	41.5	35.4	34.5	3.8	3.9	4.3	4.4	60.5	63.1	65.3	65.6	61.9	64.7	67.0	67.3
Sri Lanka	32.1	26.9	25.1	25.1	5.5	6.3	7.8	8.2	66.3	67.5	70.7	71.1	73.2	75.0	76.9	77.2
Turkey	36.3	30.7	26.7	26.0	4.5	6.0	7.1	7.3	60.7	66.4	70.8	71.5	68.0	73.8	77.8	78.4
North and Central Asia	**27.0**	**23.1**	**19.3**	**19.7**	**8.6**	**10.2**	**10.5**	**10.3**								
Armenia	30.4	25.9	20.5	20.3	5.6	10.0	10.5	10.4	64.9	68.0	70.9	71.2	70.8	74.7	77.7	77.9
Azerbaijan	34.2	31.1	22.7	22.3	4.2	5.6	5.9	5.7	60.6	63.8	67.4	67.6	69.1	69.9	73.6	73.8
Georgia	24.6	21.9	17.3	17.7	9.3	12.5	14.2	14.3	66.3	68.1	70.1	70.4	73.9	75.4	77.4	77.7
Kazakhstan	31.5	27.7	24.9	25.5	5.8	6.8	6.7	6.6	61.8	57.9	60.6	60.9	71.5	69.5	71.9	72.2
Kyrgyzstan	37.6	35.0	30.0	30.2	5.0	5.5	4.4	4.2	62.3	62.3	63.0	63.3	70.2	70.2	71.4	71.7
Russian Federation	23.0	18.2	14.9	15.4	10.2	12.4	13.1	13.0	62.5	58.9	61.4	61.7	73.4	72.0	74.1	74.3
Tajikistan	43.6	42.9	35.9	35.9	3.8	3.5	3.3	3.2	59.8	60.0	63.8	64.0	66.1	67.8	70.4	70.7
Turkmenistan	40.5	36.3	29.2	28.6	3.8	4.3	4.1	4.1	59.1	60.1	60.9	61.2	66.5	67.9	69.3	69.6
Uzbekistan	41.0	37.3	29.8	29.0	4.0	4.3	4.4	4.3	63.6	63.8	64.6	64.8	70.0	70.3	71.3	71.5
Pacific	**26.5**	**25.4**	**23.8**	**23.7**	**9.1**	**9.8**	**10.7**	**11.1**								
American Samoa																
Australia	22.0	20.7	18.9	19.0	11.1	12.4	13.4	14.0	73.8	76.9	79.9	80.1	79.9	82.3	84.3	84.6
Cook Islands																
Fiji	38.4	35.1	29.0	28.9	2.9	3.4	4.8	5.2	63.6	65.2	66.5	66.8	67.6	70.2	72.4	72.8
French Polynesia	35.6	31.8	23.8	22.6	3.4	4.3	6.8	7.1	66.7	69.8	73.5	73.9	71.1	75.3	78.0	78.5
Guam	29.9	30.5	27.5	26.6	4.0	5.4	7.3	7.8	69.8	72.8	75.4	76.0	74.4	77.5	80.9	81.4
Kiribati	40.3	39.9	33.6	32.4	3.5	3.4	3.9	4.0	57.9	61.8	65.1	65.8	63.5	67.5	70.8	71.4
Marshall Islands																
Micronesia (F.S.)	44.1	40.3	36.9	35.7	3.6	3.7	3.8	4.0	65.7	66.7	67.8	68.0	66.8	67.9	69.5	69.8
Nauru																
New Caledonia	31.9	28.7	23.5	22.9	5.0	5.9	9.5	9.8	68.1	70.7	73.0	73.4	73.8	76.6	78.8	79.2
New Zealand	23.3	22.7	20.5	20.3	11.1	11.8	13.0	13.6	72.3	75.7	78.7	79.1	78.2	80.7	82.6	82.8
Niue																
Northern Mariana Islands																
Palau																
Papua New Guinea	42.2	40.2	39.1	38.4	2.3	2.5	2.8	2.9	53.0	56.7	60.0	60.2	58.5	61.0	64.2	64.5
Samoa	40.4	40.7	38.3	38.0	3.9	4.5	5.1	5.1	61.8	66.3	69.3	69.9	68.4	72.8	75.6	76.2
Solomon Islands	45.5	41.9	40.8	40.4	2.8	2.8	3.3	3.3	56.4	61.6	65.8	66.2	57.1	64.1	68.4	68.9
Tonga	39.4	38.4	37.5	37.3	4.5	5.7	5.9	5.9	68.1	68.8	69.3	69.6	71.1	72.8	75.2	75.5
Tuvalu																
Vanuatu	43.8	41.5	38.2	37.7	3.6	3.3	3.9	3.9	61.8	65.9	68.9	69.5	64.7	69.3	72.9	73.5
Asia and the Pacific	**33.3**	**29.7**	**24.8**	**24.4**	**5.3**	**6.2**	**7.2**	**7.4**								
Developed countries	18.9	15.6	14.3	14.2	11.8	16.4	21.3	22.5								
Developing countries	33.9	30.3	25.2	24.8	5.0	5.7	6.6	6.8								
LLDC	39.8	38.5	34.4	33.8	4.0	4.3	4.4	4.4								
LDC	41.7	37.5	33.1	32.0	3.7	4.0	4.5	4.6								
ASEAN	36.7	31.6	28.2	27.5	4.1	4.9	5.5	5.6								
ECO	41.6	37.5	31.5	30.9	3.9	4.4	4.9	5.0								
SAARC	38.6	35.5	31.3	30.4	3.9	4.3	4.9	5.1								
Central Asia	36.0	33.3	27.5	27.3	5.0	5.8	5.7	5.6								
Pacific island dev. econ.	39.9	37.9	36.3	35.8	2.6	2.9	3.4	3.5								
Low income econ.	40.2	36.4	32.1	31.2	3.8	4.2	4.8	4.9								
Lower middle income econ.	38.0	34.5	30.5	29.8	4.0	4.5	5.0	5.1								
Upper middle income econ.	29.7	25.6	18.8	18.6	6.0	7.2	8.5	8.7								
High income econ.	20.5	17.1	14.8	14.5	10.1	14.0	18.3	19.4								
Africa	**44.5**	**42.4**	**41.1**	**41.0**	**3.2**	**3.3**	**3.4**	**3.5**								
Europe	**19.9**	**17.4**	**15.5**	**15.5**	**13.4**	**15.3**	**17.1**	**17.5**								
Latin America and Carib.	**36.2**	**32.0**	**28.1**	**27.3**	**4.9**	**5.7**	**6.8**	**7.1**								
North America	**21.6**	**21.1**	**19.5**	**19.3**	**12.3**	**12.4**	**13.2**	**13.7**								
World	**32.9**	**30.1**	**26.6**	**26.3**	**6.2**	**6.9**	**7.7**	**7.9**	**62.2**	**64.1**	**67.2**	**67.7**	**66.7**	**68.6**	**71.7**	**72.2**

A.2. Urbanization

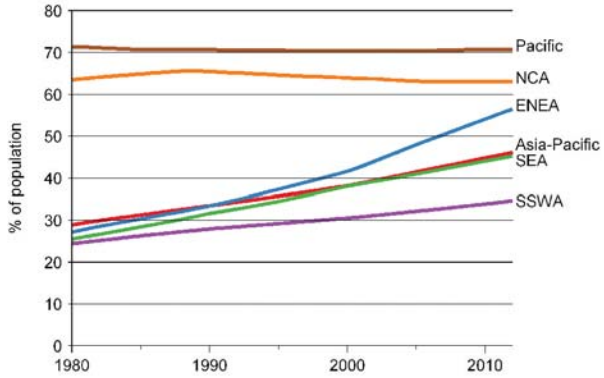
Urbanization is the increase in the proportion of people living in towns and cities. In the Asian and Pacific region, urbanization is driven by three factors: natural population growth, rural to urban migration and the reclassification of rural areas into urban areas. While there are significant differences in the impact of these drivers across the region, in general the impact of migration is decreasing in significance.

Nearly half of the population of Asia and the Pacific now lives in urban areas.

In 2012, 1.96 billion people – an estimated 46 per cent of the region's population – lived in urban areas, compared with less than 40 per cent 10 years earlier. By 2020, the urban population is estimated to reach 50 per cent, an absolute growth in numbers of approximately 500 million people.

While the region continues to urbanize, the characteristics of this growth have distinct subregional and country-level deviations. The Pacific has the largest proportion of its population living in urban areas, which has remained at about 70 per cent since 1980, although rates in Australia and New Zealand are substantially higher than those in Pacific island developing economies. As in the Pacific, the urban proportion in North and Central Asia has remained stable since 1980 and has even declined in recent decades, but grew at 0.3 per cent in 2012 to 63 per cent. The rapid increase in urbanization in East and North-East Asia since 1980 is being driven more and more by China, and the urban proportion of the subregion reached 57 per cent in 2012. The urban proportion of the population in South-East Asia and in South and South-West Asia has grown at a rate comparable to the overall regional average, and in 2012 it was 45 per cent and 35 per cent, respectively.

Figure A.2-1
Proportion of the population living in urban areas in Asia and the Pacific and its subregions, 1980 to 2012

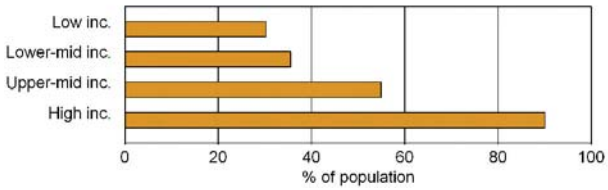


The proportion of people living in urban areas is three times greater in the richest countries than in the poorest.

Overall, urbanization is associated with higher levels of development in the region. The percentage of people living in urban areas in 2012 averaged 30 per cent in low-income economies and 90 per cent in high-income economies, a threefold difference. Many of the benefits of urbanization for a country are the result of economies of scale, which allow for a more cost-effective delivery of critical services, such as transport, health and education. But the region, either through the pressures and demands of rapid rates of growth, or through poorly managed urbanization, also faces considerable challenges. Some of these, such as inadequate access to water (see topic D.2 on access to water and sanitation), the spread of communicable diseases, and shortages of adequate and affordable shelter, can be quantified. Less quantifiable, but an area of increasing interest, are key environmental indicators, which would help to support a shift to more sustainable patterns of urban growth. One indicator in this regard is the link between rising per capita income and higher greenhouse gas emissions caused by the increased consumption of fossil fuels. During 2000-2008, average emissions per capita in Asia grew by 97 per cent while those for the world grew by only 18 per cent;[1] and much of the increase in the region was directly related to the growth of its urban areas.

[1] Asian Development Bank, "Green urbanization in Asia", in *Key Indicators for Asia and the Pacific 2012*, 43rd ed. (Mandaluyong City, Philippines, 2012), p. 13.

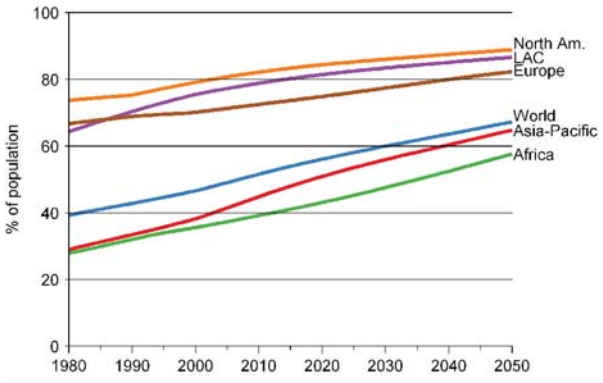
Figure A.2-2
Urban population in Asia and the Pacific by income grouping, 2012



The rate of urbanization in Asia and the Pacific is greater than that in any other region of the world, and the highest growth rates are found in the poorest and least urbanized countries.

In 1980, less than 30 per cent of the region's population lived in urban areas. This was approximately the same proportion as in Africa and 10 percentage points lower than the global average. By 2010, the gap between Asia and the Pacific and the rest of the world had reduced by one third to 6.8 percentage points and had diverged by more than 5 percentage points from Africa. This trend is set to continue and by 2050 the urban population of the Asian and Pacific region is forecasted to be within 2.5 percentage points of the world average.

Figure A.2-3
Urban population, world and world regions, 1980-2050

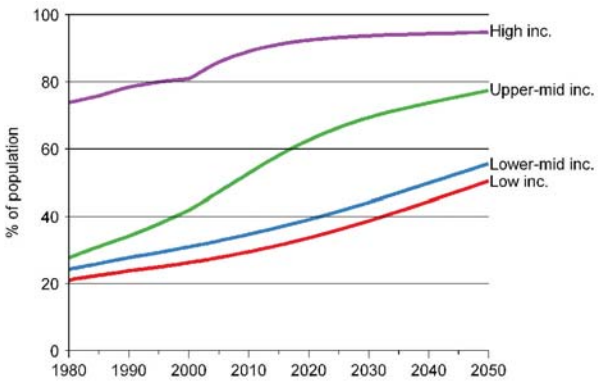


Much of the urbanization in the region is being driven by China and India. Urbanization in China has been driven both by rural to urban migration and by the incorporation of rural areas into urban areas, causing the urban population to more than triple from 190 million in 1980 to 669 million in 2010, and the percentage of people living in urban areas to more than double. In 2010, one third of the urban population in the region lived in China.

Although China is driving the pace of urbanization in Asia and the Pacific, the percentage of people living in urban areas has increased since 1980 in almost every country in the region. The notable exceptions are countries of North and Central Asia, such as Kyrgyzstan, Tajikistan and Uzbekistan, where the population living in urban areas has decreased by an average of 5 percentage points since 1980.

The pace of urbanization in the region has varied due to many factors, particularly income level. In 1980, the urban population was over 70 per cent in high-income economies and about 25 per cent in the other income-level groupings. Upper-middle-income economies then experienced accelerated urbanization, diverging from the other poorer economies and breaking the 50 per cent urban population barrier in 2008. While the pace of urbanization in lower-middle-income and low-income economies was initially slower, the percentage of the population living in urban areas is now increasing at a rate similar to that of upper-middle-income economies. In high-income economies, the increase in the percentage of people living in urban areas is occurring much more slowly.

Figure A.2-4
Proportion of the population living in urban areas in Asia and the Pacific by income grouping, 1980 to 2050

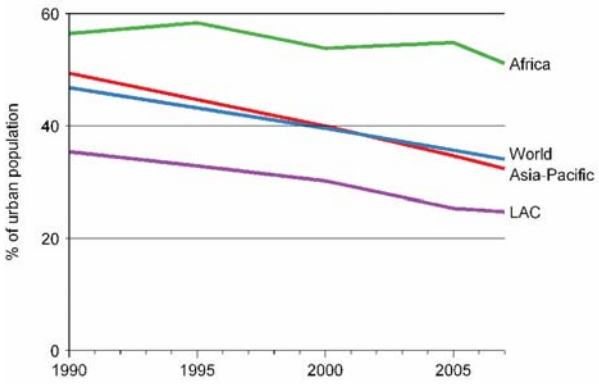


Rapidly growing cities in the region's poor countries face the additional challenges of vulnerability and a lack of resilience to disasters. For example, 51.6 per cent of the urban population of Cambodia lives in Phnom Penh, and 98.5 per cent of them reside in flood risk areas.[2]

More than half a billion people in Asia and the Pacific continue to live in slums.

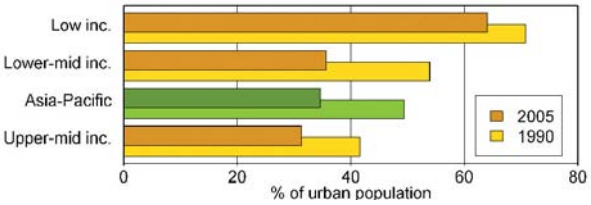
In 2009, over half a billion people in Asia and the Pacific, equal to 30 per cent of the urban population (a decrease from 50 per cent in 1990), were living in slums, and did not have access to at least one of the following basic necessities: security of tenure, structural quality and durability of dwelling, access to safe water, access to sanitation facilities, and sufficient living area. This problem is particularly acute in low-income economies in the region, where nearly two thirds of urban dwellers live in slums, and particularly in Cambodia and the Lao People's Democratic Republic, where the figure is closer to four fifths.

Figure A.2-5
Urban slum population, world and world regions, 1990-2007



Despite the rapid pace of urbanization in Asia and the Pacific, the proportion of urban dwellers living in slums decreased faster than the global average. The pace of the decline has been particularly high in lower-middle-income economies, such as India and Indonesia, where the percentage of urban dwellers living in slums has fallen by more than 20 percentage points. Nevertheless, it is important to note that, while percentages are decreasing, absolute numbers continue to grow in several countries in the region, including Bangladesh, China and Pakistan. In absolute numbers, Asia and the Pacific remains the region with the highest number of slum dwellers worldwide.

Figure A.2-6
Urban slum population, Asia and the Pacific by income grouping, 1990 and 2005



The largest cities in the world are found in Asia and the Pacific, but patterns of urbanization and its outcomes vary across the region.

While urban population growth and urbanization are dramatically reshaping the region, there are a number of distinct and diverse characteristics with regard to their size and formation. This is particularly the case concerning the growth of urban agglomerations. An agglomeration is a city or town and its adjacent territory populated at urban density levels and contained within the contours of a contiguous territory without regard to administrative boundaries. Of the largest 100 urban agglomerations in the world, 52 are found in the Asian and Pacific region and over one fifth are in China alone.

The number of people living in urban agglomerations in the region has increased by 77 per cent from 465 million in 1990 to 823 million in 2010, driven by a 157 per cent increase in China from 123 million to 317 million.

Given the decline in the percentage of people living in urban areas in North and Central Asia,

[2] Ibid., p. 15.

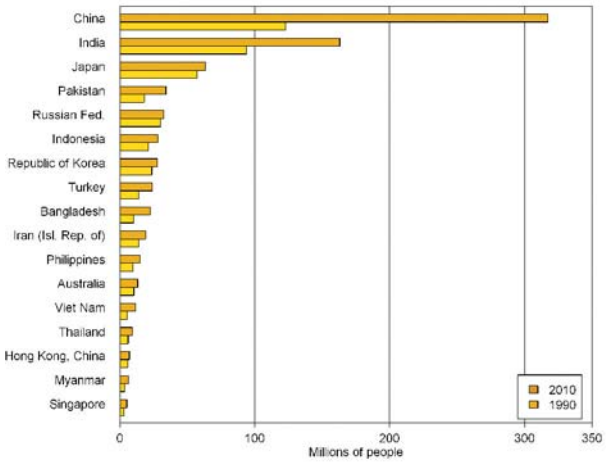
it is not surprising that the smallest percentage increase in the number of people living in agglomerations from 1990 to 2010 was in Uzbekistan or that in Armenia and Georgia these figures actually decreased.

The growth in both the number and the size of the region's megacities (agglomerations with a population in excess of 10 million people) continues to be an important regional and global trend. By 2025, the total number of megacities worldwide is expected to reach 37, with 22 in Asia alone. In addition, several countries are still characterized by high rates of urban primacy. In 2010, Kabul (Afghanistan), Phnom Penh (Cambodia), Ulaanbaatar (Mongolia) and Yerevan (Armenia) each accounted for over 50 per cent of the total urban population in their countries.[3]

However, most of the region's urban population is located in small and medium-sized towns and cities, which are in large part the source of higher growth rates. Their growth and characteristics will be important to chart in contrast with those of megacities.

Finally, urbanization in the region is becoming increasingly differentiated by contrasting rates of demographic transition (see topic A.1, on population). While several countries in South and South-West Asia and in the Pacific continue to have highly youthful migrant and urban populations, towns and cities in East and North-East Asia are increasingly facing significant challenges from ageing populations, including the need to redevelop urban infrastructure and services to meet the needs of current and future older populations.

Figure A.2-7
Population living in agglomerations of 750,000 or more inhabitants, Asia and the Pacific, 1990 and 2010



Box A.2-1
Defining and measuring the city: more than just a statistical exercise

Every country defines "urban" independently, creating a challenge when measuring cities and making comparisons. An urban settlement can be characterized by administrative status, population size, population density and the extent of non-agricultural activity. A city may be reclassified several times due to changing economic or political conditions. Boundaries of urban agglomerations can change when determining which adjacent areas should be included.

Population density tends to gradually diminish as it moves outward from a city center, making it difficult to definitively mark an urban boundary. Countries in the Asian and Pacific region also use different indicators to define urban centres. For example, Thailand includes all municipal areas under the definition of urban, regardless of other criteria. India, on the other hand, uses a minimum population of 5,000, a minimum density of 1,000 per m^2 and at least 75 per cent of the adult male population employed in pursuits other than agriculture.[a]

Such exercises are not merely of statistical importance. It is essential to have accurate data on cities and their populations in order to manage and respond to key dynamics. This greater understanding is also essential for the formulation of social, environmental and infrastructure policies that can guide the development of sustainable and inclusive cities.

[a] ESCAP and UN-Habitat, *The State of Asian Cities 2010/2011* (Fukuoka, Japan, UN-Habitat, 2010).

[3] United Nations, *World Urbanization Prospects: The 2011 Revision* (New York, 2012).

Further reading

Asian Development Bank. Green urbanization in Asia. In *Key Indicators for Asia and the Pacific 2012*, 43rd ed. Mandaluyong City, Philippines, 2012.

Center for Economic Research, ESCAP and United Nations Development Programme. *Urbanization in Central Asia: Challenges, Issues and Prospects*. Tashkent: Center for Economic Research, 2013.

ESCAP and UN-Habitat. *The State of Asian Cities 2010/2011*. Fukuoka, Japan: UN-Habitat, 2010.

UN-Habitat. *State of the World's Cities 2012/2013:* Prosperity of Cities. Nairobi, 2013.

United Nations. *World Urbanization Prospects: The 2011 Revision*. New York, 2012.

Technical notes

Urban defined

There is no common definition of "urban" in the region. Definitions of urban areas may be based on administrative criteria, population size and/or density, economic functions or availability of certain infrastructure and services or other criteria. Because many countries define "urban" according to administrative criteria, urbanization levels and urban population growth rates may be underreported. Additionally, most growth occurs in the urban periphery, which may be beyond the boundary of "urban" and therefore may not be reflected in official statistics. Cross-country comparability of statistics related to urbanization is therefore limited.

Indicators

Urban population (percentage of population, percentage change per annum)

Population living in areas classified as urban according to the administrative criteria used by each country or area. **Aggregate calculations:** Weighted averages using population as weight (percentage of population); weighted averages using urban population (WPP2012) as weight (percentage change per annum). Missing data are not imputed.

Population density (population per km^2)

Number of people per km^2 of surface area. Total surface area comprises total land, inland and tidal water areas. **Indicator calculations:** Population divided by surface area (from the Food and Agriculture Organization of the United Nations, AQUASTAT database, 7 January 2011). **Aggregate calculations:** Sum of individual country values of population divided by the sum of individual country surface areas. Missing data are not imputed.

Population living in urban agglomerations of 750,000 or more inhabitants (thousands, percentage of population)

An agglomeration is defined as a city or town proper, together with the suburban fringe or thickly settled territory lying outside of, but adjacent to, the city boundaries. Data are presented for agglomerations of 750,000 or more inhabitants. **Aggregate calculations:** Sum of individual country values (thousands); weighted averages using population (WPP2012) as weight (percentage of population). Missing data are not imputed.

Urban slum population (% of urban population)

Urban slum households, reported as a share of the urban population. A slum household is a group of individuals living under the same roof who lack one or more (in some cities, two or more) of the following: security of tenure, structural quality and durability of dwelling, access to safe water, access to sanitation facilities, and sufficient living area. Urban slum households are located within an area classified as urban according to administrative criteria used by each country or area. **Aggregate calculations:** Weighted averages using urban population as weight. Missing data are not imputed.

Sources

Source of population and urbanization rate data: WPP2012. Estimated demographic trends are projections based on censuses, administrative data and surveys provided by countries through an annual questionnaire. Population data from all sources are evaluated by the United Nations for completeness, accuracy and consistency. **Data obtained:** 14 June 2013.

Source of population of urban agglomerations data: United Nations, *World Urbanization Prospects: The 2011 Revision* (database available from http://esa.un.org/unpd/wup/index.htm). Wherever possible, data are classified according to the concept of urban agglomeration, using the metropolitan area or city proper. The United Nations makes some adjustments in conformance with the urban agglomeration concept. **Data obtained:** 2 August 2012.

Source of urban slum population data: United Nations Millennium Indicators Database. **Data Obtained:** 2 August 2012.

A.2.1 Urbanization and population density

	Urban population				Urban population			Population density		Population living in agglomerations of 750,000 or more inhabitants			Urban slum population		
	% of population				% change per annum			Population per km²		% of population			% of urban population		
	1980	1990	2000	2012	90-00	00-10	2012	1990	2012	1990	2000	2010	1990	2000	2009
East and North-East Asia	**27.2**	**33.4**	**41.6**	**56.5**	**3.1**	**3.2**	**2.7**	**116**	**135**	**15.6**	**21.6**	**26.7**	**46.0**	**37.4**	**29.1**
China	19.4	26.4	35.9	51.9	4.1	3.8	3.2	121	143	10.5	17.5	23.3	43.6	37.3	29.1
DPR Korea	56.9	58.4	59.4	60.4	1.4	0.8	0.7	168	205	12.5	12.2	11.6			
Hong Kong, China	91.5	99.5	100.0	100.0	1.7	0.3	0.7			99.5	99.2	100.0			
Japan	76.2	77.3	78.6	91.9	0.4	1.5	0.7	324	337	46.7	47.7	49.9			
Macao, China	98.5	99.8	100.0	100.0	1.9	2.2	1.9								
Mongolia	52.1	57.0	57.1	69.5	1.0	3.0	2.9	1	2	26.2	31.9	41.9	68.5	64.9	
Republic of Korea	56.7	73.8	79.6	83.5	1.4	0.9	0.9	433	491	55.0	57.8	57.3	68.5		
South-East Asia	**25.5**	**31.6**	**38.1**	**45.2**	**3.6**	**2.8**	**2.6**	**99**	**136**	**11.6**	**12.0**	**13.7**	**47.3**	**39.7**	**28.8**
Brunei Darussalam	59.9	65.8	71.2	76.4	3.4	2.5	1.9	45	71						
Cambodia	9.0	15.5	18.6	20.1	4.9	2.3	2.7	50	82	6.8	9.4	10.5	71.7		
Indonesia	22.1	30.6	42.0	51.5	4.9	3.2	2.8	94	130	11.8	11.4	11.7	50.8	34.4	23.0
Lao PDR	12.4	15.4	22.0	35.4	6.1	6.0	5.2	18	28	6.7	8.2	12.0	66.1		
Malaysia	42.0	49.8	62.0	73.5	4.8	3.4	2.7	55	88	10.3	11.0	12.9			
Myanmar	24.0	24.6	27.2	33.2	2.4	2.4	2.6	62	78	8.4	9.0	12.4	31.1		
Philippines	37.5	48.6	48.0	49.1	2.2	2.0	2.2	206	322	16.0	16.0	15.9	54.3	47.2	40.9
Singapore	100.0	100.0	100.0	100.0	2.7	2.6	2.1	4 436	7 469	100.0	100.0	100.0			
Thailand	26.8	29.4	31.1	34.4	1.5	1.4	1.4	110	130	10.7	10.8	14.0	19.5		27.0
Timor-Leste	16.5	20.8	24.3	28.7	2.8	3.8	3.0	51	75						
Viet Nam	19.2	20.3	24.4	31.7	3.5	3.2	3.1	208	274	7.6	9.3	13.0	60.5	48.8	35.2
South and South-West Asia	**24.4**	**27.9**	**30.5**	**34.6**	**2.9**	**2.6**	**2.4**	**162**	**235**	**12.3**	**13.7**	**15.4**	**53.4**	**42.9**	**32.6**
Afghanistan	15.7	18.2	20.6	23.8	7.1	4.5	3.8	18	46	11.4	9.5	10.7	98.5		
Bangladesh	14.9	19.8	23.6	28.9	3.9	3.0	2.9	746	1 074	9.5	11.8	15.0	87.3	77.8	61.6
Bhutan	10.1	16.4	25.4	36.4	5.0	5.7	3.9	11	19				70.0		
India	23.1	25.5	27.7	31.6	2.7	2.6	2.4	264	376	10.8	12.2	13.5	54.9	41.5	29.4
Iran (Islamic Rep. of)	49.7	56.3	64.0	69.2	2.9	2.0	1.5	32	44	24.5	24.6	25.4	51.9		
Maldives	22.2	25.8	27.7	42.3	3.1	5.6	4.8	720	1 128						
Nepal	6.1	8.9	13.4	17.3	6.9	3.7	3.1	123	187	2.2	2.8	3.6	70.6	64.0	58.1
Pakistan	28.1	30.6	33.1	36.5	3.4	2.7	2.6	140	225	16.2	17.5	19.8	51.0	48.7	46.6
Sri Lanka	18.8	17.2	15.7	15.2	-0.1	0.5	1.3	264	322				24.8		
Turkey	43.8	59.2	64.7	72.5	2.5	2.2	2.7	69	94	26.0	29.5	33.3	23.4	17.9	13.0
North and Central Asia	**63.5**	**65.4**	**63.9**	**63.1**	**-0.1**	**0.0**	**0.3**		**10**	**18.6**	**18.7**	**19.8**			
Armenia	66.1	67.4	64.7	64.1	-1.8	-0.5	0.2		100	33.1	36.1	37.6			
Azerbaijan	52.8	53.7	51.4	53.9	0.7	1.5	1.6		107	24.0	22.2	22.7			
Georgia	52.5	55.0	52.6	52.9	-1.8	-0.8	-0.2		63	22.4	23.2	25.4			
Kazakhstan	54.1	56.3	55.7	53.5	-1.1	0.5	0.8		6	6.7	8.0	8.8			
Kyrgyzstan	38.6	37.8	35.3	35.4	0.5	0.7	1.5		27	14.5	15.5	15.6			
Russian Federation	69.8	73.4	73.3	74.0	-0.1	-0.2	0.0		8	20.4	20.9	22.7			
Tajikistan	34.3	31.7	26.5	26.5	-0.2	2.1	2.6		56						
Turkmenistan	47.1	45.1	45.9	49.0	2.3	1.7	2.0		11						
Uzbekistan	40.8	40.2	37.4	36.2	1.2	0.8	1.4		64	10.2	8.6	8.0			
Pacific	**71.4**	**70.7**	**70.4**	**70.7**	**1.4**	**1.7**	**1.5**	**3**	**4**	**54.4**	**54.7**	**54.4**			
American Samoa								235	276						
Australia	85.8	85.4	87.2	89.4	1.4	1.7	1.5	2	3	60.1	60.2	58.8			
Cook Islands								73	86						
Fiji	37.8	41.6	47.9	52.6	2.5	1.4	1.5	40	48						
French Polynesia	57.4	55.9	52.4	51.4	1.2	1.0	1.1	50	68						
Guam	93.8	90.8	93.1	93.2	2.0	0.3	1.2	242	302						
Kiribati	32.3	35.0	43.0	44.0	3.6	1.9	1.8	88	124						
Marshall Islands									292						
Micronesia (F.S.)	26.4	25.8	22.3	22.7	-0.4	-0.3	0.4		148						
Nauru								458	502						
New Caledonia	57.4	59.5	61.8	61.5	2.6	1.6	1.1	9	14						
New Zealand	83.4	84.7	85.7	86.3	1.4	1.3	1.1	13	17	25.6	27.6	32.2			
Niue								9	5						
Northern Mariana Islands									116						
Palau									45						
Papua New Guinea	13.0	15.0	13.2	12.5	1.3	1.8	2.6	9	15						
Samoa	21.2	21.2	22.0	19.6	1.1	-0.3	-0.3	57	67						
Solomon Islands	10.6	13.7	15.8	20.9	4.3	4.9	4.4	11	19						
Tonga	21.2	22.7	23.0	23.5	0.4	0.8	0.7	127	140						
Tuvalu								300	329						
Vanuatu	14.7	18.7	21.7	25.2	3.9	3.8	3.5	12	20						
Asia and the Pacific	**28.9**	**33.5**	**38.2**	**46.1**	**2.7**	**2.7**	**2.4**	**60**	**79**	**14.3**	**17.2**	**19.9**	**49.4**	**39.9**	**30.4**
Developed countries	77.4	78.5	79.9	91.4	0.6	1.6	0.8	17	18	47.8	48.8	50.7			
Developing countries	26.4	31.4	36.5	44.4	2.9	2.8	2.6	131	91	12.7	15.8	18.7	49.4	39.9	30.4
LLDC	33.7	35.2	33.0	34.2	1.3	1.9	2.1		21	10.6	10.1	10.8			
LDC	15.8	19.4	22.8	27.7	4.0	3.1	3.0	91	135	8.5	10.0	12.7	70.7		
ASEAN	25.5	31.6	38.1	45.3	3.6	2.8	2.6	99	136	11.6	12.0	13.7	47.3	39.7	28.8
ECO	38.0	43.4	45.4	48.5	2.5	2.2	2.2	73	54	18.7	19.6	21.3	43.5		
SAARC	22.3	25.0	27.3	31.3	2.9	2.7	2.5	221	322	11.1	12.5	14.1	57.0	45.7	34.7
Central Asia	47.8	47.7	44.4	43.5	0.0	0.8	1.3		19	13.9	13.4	13.3			
Pacific island dev. econ.	21.3	22.8	21.9	21.1	1.9	1.6	2.1	12	19						
Low income econ.	20.8	23.8	26.2	30.2	3.2	2.6	2.6	114	140	9.0	10.3	12.6	70.8		
Lower middle income econ.	24.2	27.7	30.9	35.5	3.0	2.6	2.5	149	201	11.6	12.6	14.0	53.9	41.7	31.0
Upper middle income econ.	27.6	34.1	41.8	54.9	3.0	3.0	2.7	118	54	12.6	18.1	23.1	41.6	35.7	27.9
High income econ.	73.8	78.4	80.9	90.0	0.9	1.4	0.9	23	26	51.7	53.5	55.0			
Africa	**27.9**	**32.0**	**35.6**	**39.9**	**3.6**	**3.4**	**3.5**	**21**	**36**				**56.5**	**53.8**	**50.0**
Europe	**66.7**	**68.9**	**70.1**	**72.9**	**0.3**	**0.6**	**0.5**	**118**	**102**						
Latin America and Carib.	**64.3**	**70.3**	**75.5**	**79.4**	**2.4**	**1.7**	**1.5**	**22**	**30**				**35.4**	**30.2**	
North America	**73.7**	**75.3**	**79.1**	**82.6**	**1.6**	**1.3**	**1.1**	**14**	**17**						
World	**39.2**	**42.8**	**46.6**	**52.5**	**2.3**	**2.2**	**2.1**	**40**	**53**				**46.8**	**39.6**	**33.1**

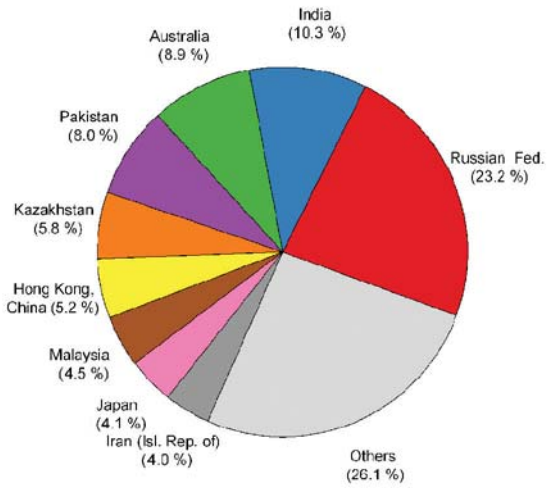
A.3. International migration

International migration has significant socioeconomic implications for the Asian and Pacific region. Destination countries benefit from the labour and skills of migrant workers while countries of origin benefit from remittances, investment, business exchanges and expertise provided by migrants living and working overseas. Developing countries in particular may have a lot to gain in terms of growth and poverty reduction if they can implement policies that distribute the benefits of employment generation and remittances effectively.

There were 53 million international migrants living in the Asian and Pacific region in 2010.

In 2010, just under one quarter of the world's total international migrant population of 214 million people were living in the region. The largest number are low-skilled labour migrants who, with or without a work contract, move for temporary employment and who are generally not permitted to bring dependents with them. However, many other forms of migration are important in the region, including: (a) the migration of highly skilled workers; (b) migration for marriage; (c) migration for studies; (d) and asylum-seekers, refugees, and stateless and displaced persons.

Figure A.3-1
International migrants, Asia and the Pacific, 2010



In 2010, roughly half of all international migrants in the Asian and Pacific region were living in four countries: the Russian Federation (12.3 million); India (5.4 million); Australia (4.7 million); and Pakistan (4.2 million). A notable absence from this list is China, which has a large population and land mass capable of accommodating international migrants and a growing economy that may attract them. Although China does not have the figures of the countries listed above, the number of international migrants living in China is increasing rapidly and has nearly doubled from the relatively low number of 376,000 in 1990 to 686,000 in 2010.

The percentage of international migrants of the total population living in Asia and the Pacific is less than half the global average. The highest concentration of international migrants in the region live in small, high-income countries and areas.

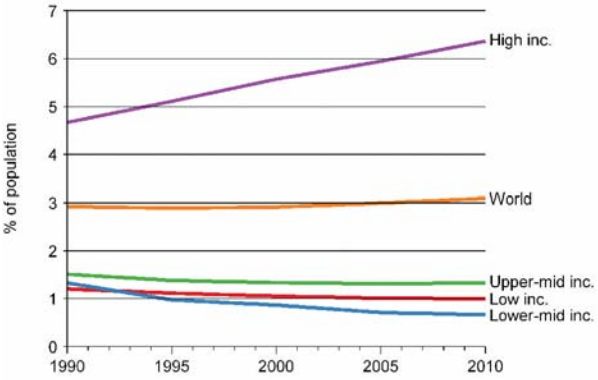
Despite the high number of international migrants living in Asia and the Pacific, they account for only 1.3 per cent of the population, less than half of the global average of 3.1 per cent. Furthermore, the proportion of international migrants in most countries in the region has been decreasing, in contrast with the increasing global average.

Higher percentages of international migrants are typically in smaller countries or areas in the upper-middle-income or high-income categories, such as Macao, China (56 per cent), Hong Kong, China (39 per cent), and Singapore (39 per cent), where there may be greater comparative opportunities and migrant-friendly policies. Hong Kong, China, for example, issues a number of visas that allow the holder to take up employment or employment-related training.

The percentage of international migrants living in high-income economies in the region has increased at a greater rate than the global average. While the global average increased steadily from 2.9 per cent in 1990 to 3.1 per cent in 2010, the percentage of international migrants living in

high-income economies in Asia and the Pacific increased from 4.7 per cent to 6.4 per cent over the same period.

Figure A.3-2
Percentage of international migrants living in Asia and the Pacific by income grouping, 1990 to 2010



Many countries in the region are net population "exporters".

Many countries in the region have negative net migration; that is, they lose more people from international emigration than they gain from immigration. These "sender" countries could benefit in the short term if, through the absence of workers who migrate, new employment opportunities are created for unemployed or underemployed workers who remain, and in the longer term from migrants returning with new skills, products, ideas and knowledge.

In the region, countries with large, negative net migration rates are often small islands, fall under the low-income or lower-middle-income economic grouping, or have a recent history of civil unrest. From 2005 to 2010, the countries

Box A.3-1
Women migrant workers in Asia and the Pacific

Women constitute 49 per cent of the global migration stock, but, in Asia and the Pacific, where temporary migration for employment constitutes the major form of migration, the proportion of women among migrants varies considerably from country to country. For example, women constitute about two thirds of the migrant workers deployed by Indonesia, approximately half of those deployed by the Philippines and Sri Lanka, less than one fifth of those deployed by Thailand and only about 5 per cent of those deployed by Bangladesh. The wide variation results not only from cultural factors but also from government policies that are a combination of measures to promote migration and measures to provide protection to migrants by imposing certain restrictions, as on age and on wages.[a]

The labour demand in destination countries is also an important factor in determining the proportion of female migrants in a country. For example, domestic work is typically perceived as a woman's work in the developing world and is the largest employer in the low-wage sector for international women migrants originating from Asia.

Globally, 83 per cent of domestic workers are women.[b] According to the International Labour Organization, at least 52 million people around the world are employed as domestic workers and the Asian and Pacific region accounts for 21.4 million of these.[c] Women migrant workers may be especially vulnerable to exploitation and abuse in destination countries because of gender discrimination per se and because women tend to work in the informal sector (for instance, within private households as domestic workers), where they are not covered by labour, social protection or other laws. Given that many migrants are undocumented, such as those that are trafficked for sex work, their irregular status means they are more vulnerable and less likely to be covered by social protection schemes.

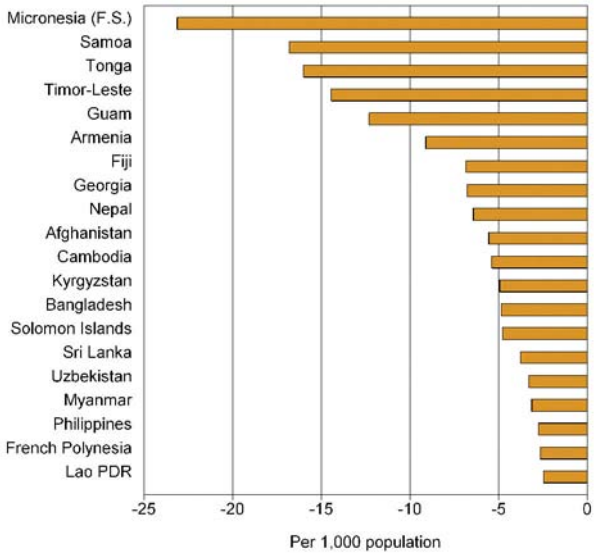
Despite the magnitude of the issue and the considerable research conducted on gender and migration, as well as migration and families in the region, gender-specific dimensions are rarely taken into account when it comes to policy design.

However, women migrants in Asia and the Pacific are attracting greater attention as awareness of the need to address their rights increases and as the contribution they make to socioeconomic development becomes more evident.

[a] International Organization for Migration, *Gender and Labour Migration in Asia* (Geneva, 2009).
[b] Ibid., *Domestic Workers across the World: Global and Regional Statistics and the Extent of Legal Protection* (Geneva, 2013). Available from www.ilo.org/global/publications/books/WCMS_173363/lang—en/index.htm (accessed 30 June 2013).
[c] Ibid.

with the largest negative net migration rate per 1,000 people were the small islands of Tonga (-16), Samoa (-17) and the Federated States of Micronesia (-23), economies in the low-income or lower-middle-income economic grouping, such as Cambodia (-5) and Bangladesh (-5), and such countries as Afghanistan (-6), which have suffered from internal conflict. The net outflow from low-income and lower-middle-income economies has also increased in recent years.

Figure A.3-3
Net migration rate, top 20 countries and areas in Asia and the Pacific, 2005-2010



Box A.3-2
A lack of a legal framework governing migrant protection

The Asian and Pacific region hosts the largest number of refugees worldwide. It accounts for almost 30 per cent of the global population of concern to the office of the United Nations High Commissioner for Refugees, which totaled approximately 9.6 million people at the end of 2011.[a]

Although there is a long-standing tradition in the region of providing refugees with protection on an ad hoc basis, many countries do not have a legal framework governing refugee protection, and accession to the 1951 Convention Relating to the Status of Refugees or its 1967 Protocol remains limited. Some States that have not ratified these international protection instruments have nevertheless been providing ad hoc protection arrangements, but the office of the United Nations High Commissioner for Refugees often remains the de facto main protection actor in the region.

As of June 2013, only 9 countries[b] out of 53 countries in the region have ratified the International Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families, but none of these countries is a major destination for migrant workers. The ILO Domestic Workers Convention (No. 189) will come into force on 5 September 2013 and, as of June 2013, it had been ratified by the Philippines, in addition to Mauritius and Uruguay.

[a] Office of the United Nations High Commissioner for Refugees, *UNHCR Global Trends 2011* (2012). Available from www.unhcr.org/4fd6f87f9.html.
[b] Azerbaijan, Bangladesh, Indonesia, Kyrgyzstan, Philippines, Sri Lanka, Tajikistan, Timor-Leste and Turkey.

Box A.3-3
Improved collection, dissemination and analysis of sex- and age-disaggregated data on international migration

Data on international migration are usually sourced from administrative records, population censuses and household surveys. The comparability and usefulness of the data could be further enhanced through the harmonization of concepts and definitions used in the various sources. Data need to be disaggregated by age and sex, with data collected on the specific situation of irregular migrants. Without this level of detail, it is difficult to assess the specific impact of migration on men, women and children within families and as a result, most research currently focuses on household-level impacts.

There is considerable potential for regional and subregional cooperation to improve the evidence base for gender-sensitive and effective policymaking. There is a need for data and analyses to underpin the development of coherent policies that link migration and development at the national level, and to gauge how migration impacts the development of countries of origin and countries of destination. The results of such studies can be used for policy development as well as to serve as a basis for advocacy on the positive contributions of migrants.

Data collection and use in this context should be protected by international standards on the right to privacy. Data could be widely disseminated through statistical publications and the Internet. This would allow the contribution of migration to development in both the country of origin and the host country to be carefully assessed, along with the associated costs.

Box A.3-4
Effects of public perceptions of migrant workers

The well-being of migrant workers in South-East Asia is highly influenced by public attitudes in destination countries. Perceptions affect the environment in which migrants work and socialize, and are translated into migration policies. Studies have shown that negative perceptions of migrant workers are commonly held by nationals of a destination country. For example, they commonly view migrants as disproportionately responsible for increasing crime rates and disease outbreaks. The fear of the unknown, which has been partially amplified by negative media reporting on migrants, is thought to be one of the key reasons for negative attitudes towards migrant workers.

According to a recent study that focused on the perceptions of migrants in Thailand,[a] migrant workers were seen by approximately half of the respondents as a threat to their human security. Undocumented migrants were seen as a bigger threat, with 75 per cent of respondents agreeing they were more likely to commit crimes while more than one quarter of respondents viewed undocumented migrants and their families (who were assumed not to undergo health screening before entering the country) as disease carriers. According to a study by ILO, even in countries experiencing labour shortages and very low unemployment rates in key economic sectors, only 55 per cent of respondents recognized the need for foreign workers to fill labour market niches.[b] Nearly 80 per cent of respondents in these countries believed that restrictions to admitting migrant workers should be increased.

Another ILO survey, conducted in Malaysia, the Republic of Korea, Singapore and Thailand, highlighted attitudes towards conditions for foreign and national workers.[c] Most survey respondents were of the opinion that registered migrants should not be entitled to the same pay or working conditions as nationals for performing the same job. This varied from 51 per cent of respondents in the Republic of Korea to 73 per cent in Malaysia. Attitudes towards unregistered migrant workers were even more severe. Nearly 80 per cent of respondents in three of the four countries agreed that unauthorized migrants could not expect to have any rights at work; the exception was the Republic of Korea, where only 40 per cent felt this way.

[a] Thai Association of Population and Social Researchers, *Journal of Population and Social Studies, vol. 21, No. 1* (July 2012), pp. 47-58.
[b] International Organization for Migration, *Communicating Effectively about Migration: World Migration Report 2011* (Geneva, 2011).
[c] Max Tunon and Nilim Baruah, "Public attitudes towards migrant workers in Asia", *Migration and Development, vol. 1, No. 1*, pp. 149-162.

Further reading

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Technical notes

Foreign population (thousands, percentage of population)

The estimated number of international immigrants, male and female, in the middle of the indicated year; generally represents the number of persons born in a country other than where they live. When data on the place of birth are unavailable, the number of non-citizens is used as a proxy for the number of international immigrants. The foreign population includes refugees, some of whom may not be foreign-born. **Aggregate calculations:** Sum of individual country values (thousands); weighted averages using population (WPP2012) as weight (percentage of population). Missing data are not imputed.

Net migration rate (per 1,000 population)

International immigrants minus emigrants divided by the average population of the receiving country over a period. **Aggregate calculations**: Weighted averages using population (WPP2012) as weight. Missing data are not imputed.

Sources

Source of foreign population data: United Nations, *Trends in International Migrant Stock: The 2008 Revision* (database, POP/DB/MIG/Stock/Rev. 2008). Most estimates are based on data from population censuses held during the decennial rounds of censuses. Population census data are supplemented with data from population registers and nationally representative surveys. **Data obtained:** 25 August 2009.

Source of migration rate data: WPP2012. Estimated demographic trends are projections based on censuses, administrative data and surveys provided by countries through an annual questionnaire. Population data from all sources are evaluated by the United Nations for completeness, accuracy and consistency. **Data obtained:** 14 June 2013.

A.3.1 International migration

	Foreign population										Net migration rate			
	Thousands					% of population					Per 1,000 population			
	1990	1995	2000	2005	2010	1990	1995	2000	2005	2010	90-95	95-00	00-05	05-10
East and North-East Asia	**4 484**	**5 083**	**5 716**	**6 185**	**6 485**	**0.3**	**0.4**	**0.4**	**0.4**	**0.4**	**-0.1**	**-0.1**	**-0.2**	**-0.1**
China	376	437	508	590	686	0.0	0.0	0.0	0.0	0.1	-0.1	-0.1	-0.4	-0.3
DPR Korea	34	35	36	37	37	0.2	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0
Hong Kong, China	2 218	2 431	2 669	2 721	2 742	38.3	39.6	39.0	39.5	38.9	5.2	18.5	-1.2	1.3
Japan	1 076	1 363	1 687	1 999	2 176	0.9	1.1	1.3	1.6	1.7	0.7	0.0	1.0	0.7
Macao, China	200	224	240	278	300	55.7	56.3	55.6	59.4	56.1	9.9	9.7	13.3	22.5
Mongolia	7	7	8	9	10	0.3	0.3	0.3	0.4	0.4	-7.9	-4.5	-1.2	-1.1
Republic of Korea	572	584	568	551	535	1.3	1.3	1.2	1.2	1.1	-2.9	-2.3	-0.4	1.4
South-East Asia	**3 060**	**3 552**	**4 838**	**5 624**	**6 715**	**0.7**	**0.7**	**0.9**	**1.0**	**1.1**	**-0.8**	**0.0**	**-0.6**	**-1.3**
Brunei Darussalam	73	87	104	124	148	28.5	29.6	31.4	33.8	37.0	0.8	1.8	2.0	1.8
Cambodia	38	116	237	304	336	0.4	1.1	1.9	2.3	2.3	8.3	5.1	-1.1	-5.4
Indonesia	466	219	292	136	123	0.3	0.1	0.1	0.1	0.1	-0.4	-0.2	-0.5	-0.6
Lao PDR	23	23	22	20	19	0.5	0.5	0.4	0.4	0.3	-2.0	-5.1	-6.2	-2.5
Malaysia	1 014	1 193	1 554	2 029	2 358	5.6	5.8	6.6	7.9	8.3	3.1	3.6	4.0	4.8
Myanmar	134	114	98	93	89	0.3	0.3	0.2	0.2	0.2	-0.6	0.0	-4.1	-3.1
Philippines	159	210	323	375	435	0.3	0.3	0.4	0.4	0.5	-2.1	-2.1	-2.8	-2.8
Singapore	727	992	1 352	1 494	1 967	24.1	28.5	34.5	33.2	38.7	15.3	13.8	20.7	18.8
Thailand	387	549	792	982	1 157	0.7	0.9	1.3	1.5	1.7	-3.8	2.0	3.4	-2.2
Timor-Leste	9	10	9	12	14	1.2	1.1	1.1	1.2	1.3	-1.1	-37.7	0.0	-14.4
Viet Nam	29	39	56	55	69	0.0	0.1	0.1	0.1	0.1	-1.1	-0.8	-1.9	-2.0
South and South-West Asia	**21 346**	**17 484**	**16 933**	**15 181**	**15 715**	**1.7**	**1.3**	**1.1**	**0.9**	**0.9**	**-0.3**	**-0.3**	**-0.8**	**-1.3**
Afghanistan	58	70	76	86	91	0.5	0.4	0.4	0.3	0.3	44.4	-6.5	1.2	-5.6
Bangladesh	882	1 006	988	1 032	1 085	0.8	0.8	0.7	0.7	0.7	-1.6	-1.2	-2.9	-4.9
Bhutan	24	28	32	37	40	4.4	5.4	5.7	5.7	5.6	-32.9	0.1	11.5	4.9
India	7 493	7 022	6 411	5 887	5 436	0.9	0.7	0.6	0.5	0.5	0.0	-0.1	-0.4	-0.5
Iran (Islamic Rep. of)	4 292	3 016	2 804	2 062	2 129	7.6	5.0	4.3	2.9	2.9	-7.8	1.9	-0.2	-1.5
Maldives	3	3	3	3	3	1.2	1.2	1.1	1.1	1.0	-2.7	-0.9	-0.1	0.0
Nepal	431	625	718	819	946	2.4	3.0	3.1	3.2	3.5	0.5	-1.2	-5.3	-6.4
Pakistan	6 556	4 077	4 243	3 554	4 234	5.9	3.2	2.9	2.2	2.4	-2.4	-0.3	-2.3	-2.2
Sri Lanka	459	426	395	366	340	2.6	2.3	2.1	1.8	1.6	-2.9	-4.3	-1.0	-3.8
Turkey	1 150	1 212	1 263	1 334	1 411	2.1	2.1	2.0	2.0	2.0	-0.7	-0.5	-0.3	-0.1
North and Central Asia	**19 510**	**18 978**	**18 214**	**18 078**	**17 996**	**9.1**	**8.7**	**8.4**	**8.3**	**8.1**	**-1.1**	**-0.5**	**0.0**	**1.2**
Armenia	659	682	574	493	324	18.6	21.1	18.7	16.3	10.9	-29.3	-14.2	-9.5	-9.1
Azerbaijan	361	525	348	255	264	5.0	6.7	4.3	3.0	2.9	-2.8	-3.0	0.3	0.2
Georgia	338	250	219	191	167	6.2	4.9	4.6	4.3	3.8	-20.7	-15.9	-13.4	-6.8
Kazakhstan	3 619	3 295	2 871	2 974	3 079	22.4	21.2	19.7	19.7	19.3	-19.1	-17.6	0.6	-0.1
Kyrgyzstan	623	482	373	288	223	14.2	10.5	7.5	5.7	4.2	-12.1	-1.4	-9.7	-4.9
Russian Federation	11 525	11 707	11 892	12 080	12 270	7.8	7.9	8.1	8.4	8.5	3.0	3.1	2.3	3.1
Tajikistan	426	305	330	306	284	8.0	5.3	5.3	4.5	3.7	-10.4	-10.9	-3.0	-1.7
Turkmenistan	307	260	241	224	208	8.4	6.2	5.4	4.7	4.1	2.2	-2.8	-5.0	-2.3
Uzbekistan	1 653	1 474	1 367	1 268	1 176	8.0	6.4	5.5	4.9	4.2	-2.5	-3.1	-6.1	-3.3
Pacific	**4 363**	**4 731**	**5 014**	**5 514**	**6 012**	**16.2**	**16.3**	**16.1**	**16.4**	**16.4**	**2.9**	**3.2**	**4.3**	**6.4**
American Samoa	21	23	25	27	28	45.2	43.5	43.3	45.0	51.0				
Australia	3 581	3 854	4 027	4 336	4 711	20.9	21.3	20.9	21.1	21.0	4.0	5.6	6.7	10.6
Cook Islands	3	3	3	3	3	14.7	14.9	15.6	14.4	13.8				
Fiji	14	15	16	17	19	1.9	1.9	2.0	2.1	2.2	-9.5	-10.7	-15.1	-6.8
French Polynesia	26	28	30	32	35	13.0	13.1	12.8	12.7	13.0	-4.2	3.1	0.1	-2.6
Guam	70	72	74	76	79	53.5	49.4	47.8	48.3	49.5	2.5	-5.5	-12.2	-12.3
Kiribati	2	2	2	2	2	3.0	2.7	2.4	2.2	2.0	-11.6	-7.5	-2.0	-2.1
Marshall Islands	2	2	2	2	2	3.3	3.1	3.1	3.2	3.3				
Micronesia (F.S.)	4	3	3	3	3	3.8	3.1	2.9	2.7	2.6	-4.4	-25.3	-24.1	-23.1
Nauru	4	4	5	5	5	42.9	42.5	45.4	48.7	52.9				
New Caledonia	38	45	50	54	60	22.4	23.6	23.6	23.8	24.3	5.3	5.6	4.4	3.6
New Zealand	523	594	685	858	962	15.4	16.2	17.8	20.7	22.0	6.7	2.3	6.7	2.9
Niue	0	0	0	0	0	19.8	20.1	21.7	23.1	25.1				
Northern Mariana Islands	27	36	45	51	55	61.4	63.0	65.6	79.0	100.0				
Palau	3	5	6	6	6	19.0	27.0	32.8	30.3	28.2				
Papua New Guinea	33	31	26	25	25	0.8	0.7	0.5	0.4	0.4	0.0	0.0	0.0	0.0
Samoa	3	5	6	7	9	2.0	2.7	3.3	4.0	4.8	-16.5	-20.1	-17.7	-16.8
Solomon Islands	5	5	6	6	7	1.5	1.5	1.5	1.4	1.3	-0.6	-0.4	-2.2	-4.8
Tonga	3	2	2	1	1	3.2	2.3	1.6	1.2	0.8	-23.2	-18.0	-16.3	-16.0
Tuvalu	0	0	0	0	0	3.6	2.9	2.3	1.9	1.5				
Vanuatu	2	2	1	1	1	1.5	1.0	0.7	0.5	0.3	-0.4	-8.0	-0.5	1.0
Asia and the Pacific	**52 764**	**49 828**	**50 715**	**50 581**	**52 923**	**1.6**	**1.4**	**1.3**	**1.3**	**1.3**	**-0.3**	**-0.1**	**-0.5**	**-0.7**
Developed countries	5 180	5 810	6 399	7 192	7 850	3.6	4.0	4.3	4.7	5.1	1.3	0.8	1.9	2.2
Developing countries	47 584	44 018	44 316	43 389	45 073	1.5	1.3	1.2	1.1	1.1	-0.4	-0.2	-0.6	-0.8
LLDC	8 189	7 775	6 960	6 779	6 664	8.4	7.1	5.9	5.3	4.8	0.3	-5.9	-3.2	-3.7
LDC	1 610	2 006	2 195	2 421	2 639	0.8	0.9	0.9	0.9	0.9	2.4	-1.3	-2.9	-4.7
ASEAN	3 051	3 542	4 829	5 612	6 701	0.7	0.7	0.9	1.0	1.1	-0.8	0.0	-0.6	-1.3
ECO	19 044	14 714	13 915	12 351	13 098	6.6	4.5	3.9	3.2	3.1	-2.0	-1.5	-1.6	-1.9
SAARC	15 904	13 257	12 866	11 785	12 175	1.4	1.1	0.9	0.8	0.8	0.1	-0.4	-0.9	-1.3
Central Asia	7 985	7 271	6 322	5 998	5 726	12.0	10.5	8.9	8.1	7.3	-10.2	-8.1	-4.5	-2.6
Pacific island dev. econ.	259	283	301	320	338	4.0	3.9	3.7	3.6	3.4	-2.0	-2.4	-2.6	-1.9
Low income econ.	2 625	2 754	2 855	2 965	3 091	1.2	1.1	1.1	1.0	1.0	1.8	-1.2	-2.8	-4.3
Lower middle income econ.	17 942	14 533	14 014	12 467	12 455	1.3	1.0	0.9	0.7	0.7	-0.7	-0.5	-0.9	-1.0
Upper middle income econ.	23 058	22 224	22 306	22 565	23 599	1.5	1.4	1.3	1.3	1.3	-0.4	0.2	0.1	0.0
High income econ.	9 132	10 311	11 532	12 575	13 769	4.7	5.1	5.6	5.9	6.4	0.7	0.9	1.7	2.4
Africa											**-0.3**	**-0.9**	**-0.5**	**-0.4**
Europe											**1.1**	**0.6**	**2.6**	**2.4**
Latin America and Carib.											**-1.2**	**-1.7**	**-2.3**	**-1.8**
North America											**3.6**	**6.0**	**3.9**	**3.8**
World	**155 518**	**165 969**	**178 499**	**195 245**	**213 944**	**2.9**	**2.9**	**2.9**	**3.0**	**3.1**	**0.0**	**0.0**	**0.0**	**0.0**

B.1. Child health

The well-being of children in the Asian and Pacific region has improved. Child and infant mortality rates have decreased, and there has been a noticeable improvement in immunization coverage. However, there has been slower progress in reducing the neonatal mortality rate, underweight prevalence among children under 5 years of age, and the absolute number of children suffering from being underweight.

In the Asian and Pacific region, more children survive to their fifth birthday than at any other time in decades. Under-5 and infant mortality rates have fallen; however, neonatal mortality rates have lagged behind and the number of preventable child deaths remains unacceptably high.

The region halved the child mortality rate between 1990 and 2011 (from 81.5 per 1,000 live births in 1990 to 40.3 per 1,000 live births in 2011). Target 4.A of Millennium Development Goal 4 is to reduce the under-5 mortality rate by two thirds by 2015, and all Asian and Pacific subregions have considerably reduced this rate. However, only East and North-East Asia reduced the under-5 mortality rate by more than two thirds between 1990 and 2011, thanks to improvements in China and Mongolia. Bangladesh, the Lao People's Democratic Republic, Maldives, Timor-Leste and Turkey have also successfully achieved the target. Conversely, slow progress in reducing the under-5 mortality rate has been witnessed in Afghanistan (101.1 per 1,000 live births), Pakistan (72.0 per 1,000 live births), Myanmar (62.4 per 1,000 live births) and India (61.3 per 1,000 live births), where under-5 mortality rates had not been reduced by even half between 1990 and 2011.

Progress can be attributed to improvements in areas that are directly or indirectly linked to the survival of children, including: (a) the availability of maternal, newborn and child health services; (b) family income and food availability, nutritional well-being and the health knowledge of mothers; (c) the level of immunization; (d) access to medical technology, safe drinking water and basic sanitation; and (e) the overall safety of the child's environment. It is clear that a large proportion of the reduction in the under-5 mortality rate is due to improvements in vaccine-preventable diseases.

This progress is insufficient, however. Close to 3 million children under 5 years of age died in 2011 in the Asian and Pacific region, and more than three quarters of those deaths occurred in South and South-West Asia. The residual burden of pneumonia, diarrhoea, malaria and neonatal complications has to be overcome in order to make further progress in all countries.

Economic advancement has not necessarily translated into investments in human development. UNICEF indicates that there is no fixed relationship between the annual rate of reduction of the under-5 mortality rate and the annual rate of growth in per capita GDP[1]; however, it is clear that many nations that have achieved significant reductions in the under-5 mortality rate have also achieved significant reductions in fertility.[2]

A similar pattern in infant mortality rates can be observed. Progress has been considerable but insufficient. Only five countries in the region have been able to reduce their rates by more than two thirds in the past two decades, namely China, the Lao People's Democratic Republic, Maldives, Singapore and Turkey. In 2011, the number of infant deaths estimated in the region was 2.36 million, which represents about 46 per cent of the total number of infant deaths worldwide.

The reduction in the under-5 mortality rate has largely occurred in older children (post-neonatal age, that is, beyond the first 28 days of life). The neonatal mortality rate has lagged behind due to high rates of prematurity, asphyxia and neonatal infections.[3] There has been suboptimal progress in maternal health care, especially in the areas of

[1] United Nations Children's Fund, The State of the World's Children: Children with Disabilities (New York, 2013).

[2] Ibid., p. 95.

[3] Joy E. Lawn and others, "3.6 million neonatal deaths: what is progressing and what is not?", Seminars in Perinatology, vol. 34, No. 6 (December 2010), pp. 371-386.

skilled attendance at birth, birth spacing and the management of pregnancy and childbirth complications. As mortality among older children has declined, neonatal mortality has increased as a proportion of all under-5 deaths. In terms of neonatal mortality, six countries have rates above 25 deaths per 1,000 live births, namely Afghanistan (36.2), Pakistan (35.6), India (32.3), Myanmar (29.9), Nepal (27.0) and Bangladesh (26.4).

Figure B.1-1
Under-5 mortality rates, Asian and Pacific region and subregions

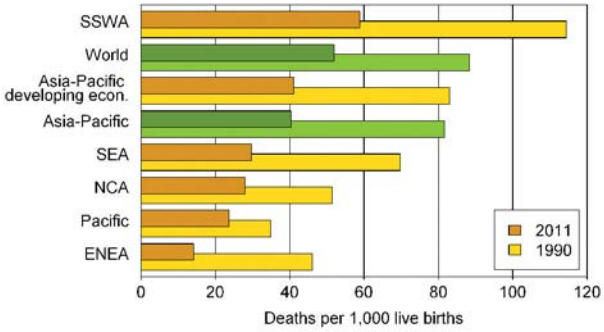
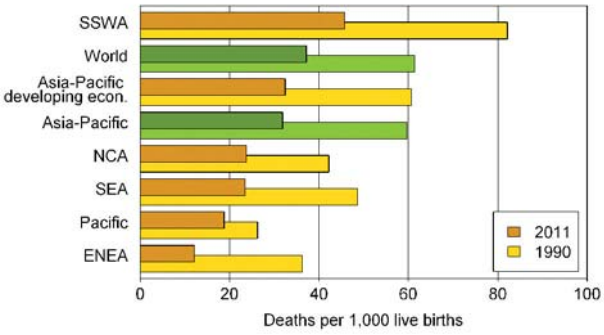


Figure B.1-2
Infant mortality rates, Asian and Pacific region and subregions

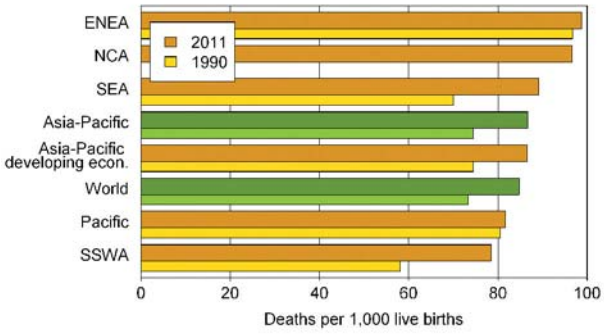


Immunization is a preventive measure for under-5 mortality. However, coverage in some countries in the region is not yet universal.

Immunization can save children's lives and prevent serious diseases that can cause permanent problems. Full immunization includes coverage against measles, polio, hepatitis B, diphtheria, pertussis and tetanus. These last three, called DPT, are administered together at three different times. The final dose of DPT, called DPT3, is considered an important milestone in a child's life as DPT3 is used as a proxy indicator for a fully immunized child. In general, in 2011, countries in the Asian and Pacific region had a DPT3 coverage of 80 per cent or above, with the exception of the Lao People's Democratic Republic (78 per cent), Timor-Leste (67 per cent) and Papua New Guinea (61 per cent). In some countries, DPT3 coverage was lower in 2011 than it was in 1990; examples include India (100 per cent to 85 per cent), Indonesia (88 per cent to 83 per cent) and the Philippines (88 per cent to 80 per cent).

Measles is a very contagious disease, and high immunization coverage rates are needed to prevent outbreaks. Immunization for this disease is also used as a proxy indicator of a fully immunized child because it is usually given at the age of 9 months, by which time all other antigens have been provided. In the Asian and Pacific region, almost 87 per cent of children 1 year of age or younger are immunized against measles. However, this aggregate masks differences between subregions. East and North-East Asia (98.7 per cent), and North and Central Asia (96.7 per cent) have close to a 100 per cent immunization rate. South and South-West Asia has the lowest rate (78.5 per cent), followed by the Pacific (81.7 per cent). Countries where the immunization rate against measles is below 80 per cent are Afghanistan, Azerbaijan, India, the Lao People's Democratic Republic, Papua New Guinea, the Philippines, Samoa, Solomon Islands, Timor-Leste and Vanuatu. The trend in Brunei Darussalam, Palau, Papua New Guinea,

Figure B.1-3
Rate of immunization against measles, Asia and the Pacific



the Philippines, Samoa and Vanuatu is worrisome because immunization against measles has dropped since 1990. In several other countries, however, efforts continue to strengthen routine services in order to ensure consistently high coverage.

About 77 million children under 5 years of age in developing countries in the region are at risk of suffering due to being underweight.

Insufficient or inappropriate dietary intake can be very dangerous for children and can lead to permanent physical problems, such as stunting and low immunity (thereby increasing their vulnerability to infectious diseases and death) and intellectual problems, which will affect their development and performance for the rest of their lives. It is estimated that about 77 million children under 5 years of age are underweight in developing countries in Asia and the Pacific and are therefore at risk.

Although the prevalence of underweight children under 5 years of age in the region has generally been decreasing in the past two decades, this progress has been occurring at a slow pace. Impressive reductions were observed in the Democratic People's Republic of Korea (from 55.5 per cent in 1998 to 18.8 in 2009) and Viet Nam (36.9 per cent in 1993 to 11.7 per cent in 2011), among others. Bangladesh was able to reduce the rate from 61.5 per cent in 1990 to 36.4 per cent in 2011.

According to the most recent data available, Bangladesh (36.4 per cent in 2011), India (43.5 per cent in 2006) and Timor-Leste (45.3 per cent in 2010) still have very high underweight prevalence rates. In the case of Timor-Leste, the trend is alarming as prevalence increased from 40.6 per cent in 2002 to 45.3 per cent in 2010.

It is important to keep in mind that estimates of the prevalence of underweight children under 5 years of age are not produced regularly for most countries and in many cases estimates are not very recent. Estimates of this indicator are produced from data collected from such surveys as demographic and health surveys and multiple indicator cluster surveys. Interpretation should therefore be considered with caution.

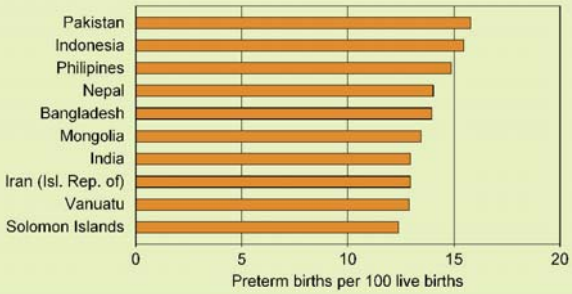
Box B.1-1
Preterm births

Babies born alive before 37 completed weeks of pregnancy are called "preterm births." These babies are at a higher risk of suffering breathing difficulties, having feeding problems, having lower immunity to infections and having problems maintaining their body temperature. In 2011, almost 15 million babies were born preterm worldwide, which represents more than 1 in 10 babies. A total of 60 per cent of the world's preterm births are found in only 10 countries, 6 of which are in the Asian and Pacific region: Bangladesh; China; India; Indonesia; Pakistan; and the Philippines.

In 2011, more than half of global preterm births were observed in Asia and the Pacific. The countries in the region with the highest preterm birth rates in 2010 were Pakistan (16 per 100 live births), Indonesia (15 per 100 live births), the Philippines (15 per 100 live births), Bangladesh (14 per 100 live births) and Nepal (14 per 100 live births).

Prematurity is the leading cause of death in newborns (babies in the first four weeks of life) and the second-leading cause of death after pneumonia in children under 5 years of age. Over 75 per cent of deaths from preterm birth complications can be prevented with cost-effective care and without the availability of neonatal intensive care. Simple and affordable solutions, such as antenatal corticosteroids for preterm labour, antibiotics for the preterm premature rupture of membranes, and the kangaroo mother care technique, can save many lives.

Preterm birth rates in the top 10 countries in the Asian and Pacific region, 2010



Source: Hannah Blencowe and others, "National, regional and worldwide estimates of preterm birth rates in the year 2010 with time trends since 1990 for selected countries: a systematic analysis and implications", *Lancet,* vol. 379, No. 9832 (June 2012), pp. 2162-2172.

Box B.1-2
Disparities in child health indicators

Disparities in child health indicators can be observed not only across the Asian and Pacific region and between countries, but also at the subnational level. One of the major drivers of disparities in child health indicators at the subnational level is household wealth. For example, the percentage of children receiving diarrhoea treatment with oral rehydration salts (according to the most recent data from 2007 to 2012) shows gaps in coverage according to household wealth and rural or urban residence, as presented in table 1. In the majority of the cases presented, the gaps between the poorest 20 per cent and the richest 20 per cent are wider than the gaps between urban and rural residence. Similar results are observed in other child health indicators, such as underweight prevalence, as presented in table 2.

Table 1. Children receiving diarrhoea treatment with oral rehydration salts, 2007-2012 (Percentage)

Country	Poorest 20 per cent	Richest 20 per cent	Urban	Rural
Bangladesh	81	82	84	76
Cambodia	32	34	33	34
India	19	43	33	24
Myanmar	52	75	72	56
Pakistan	41	44	44	40
Philippines	37	55	58	36

Source: United Nations Children's Fund, *The State of the World's Children: Children with Disabilities* (New York, 2013).
Note: Data are from the most recent year available during the period 2007-2012, with the exception of 2005-2006 data from India.

Table 2. Underweight prevalence in children under 5 years of age, 2007-2011 (Percentage)

Country	Poorest 20 per cent	Richest 20 per cent	Urban	Rural
Bangladesh	50	21	28	39
Cambodia	35	16	19	30
India	57	20	33	46
Myanmar	33	14	19	24

Source: United Nations Children's Fund, *The State of the World's Children: Children with Disabilities* (New York, 2013).
Note: Data are from the most recent year available during the period 2007-2011, with the exception of 2005-2006 data from India.

Further reading

United Nations Children's Fund. Committing to Child Survival: A Promise Renewed – Progress Report 2012. New York, 2012.

————. Immunization Summary: A Statistical Reference Containing Data through 2011. New York: United Nations Children's Fund and World Health Organization, 2012.

————. The State of the World's Children: Children with Disabilities. New York, 2013.

World Health Organization and United Nations Children's Fund. Ending Preventable Child Deaths from Pneumonia and Diarrhoea by 2025: The Integrated Global Action Plan for Pneumonia and Diarrhoea (GAPPD). 2013.

Technical notes

Live birth defined

A live birth is the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of the pregnancy, which, after such separation, breathes or shows any other evidence of life – such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles – whether or not the umbilical cord has been cut or the placenta is attached. Each product of such a birth is considered a live birth.

Mortality rate: neonatal, infant, under-5 (deaths per 1,000 live births)

The mortality rate is the probability (expressed as a rate per 1,000 live births) of a child born in a specified year dying in the first month of life in the case of neonatal mortality; before reaching the age of 1 year in the case of infant mortality; or before reaching the age of 5 years in the case of under-5 mortality. These calculations are, strictly speaking, not rates (that is, the number of deaths divided by the number of population at risk during a certain period of time) but a probability of death derived from a life table and expressed as a rate per 1,000 live births. A life table is a statistical representation of the probability of a person surviving for each additional year of life; that is, the probability of surviving one more year, then based on the survival of one additional year, the probability of an additional year. **Aggregate calculations**: Millennium Development Goal aggregation and imputation methods; weighted averages using live births or the number of children under 5 (WPP2012) as weight.

Infant and under-5 mortality (thousand deaths)

The number of infant and under-5 deaths is estimated for only economic, regional and subregional groupings. **Aggregate calculations**: The number of infants or children under 5 years of age for each economic, regional or subregional grouping multiplied by their respective mortality rate.

Children under 5 underweight (percentage of children under 5 years, thousands)

The percentage of children aged 0-59 months whose weight for age is less than two standard deviations below the median weight for age of the international reference population. The international reference population, often referred to as the NCHS/WHO reference population, was formulated by the National Center for Health Statistics as a reference for the United States of America and later adopted by the World Health Organization (WHO). **Aggregate calculations**: Millennium Development Goal aggregation and imputation methods; weighted averages using children 0-59 months (WPP2012) as weight (percentage of children under 5 years); the total number of children under 5 years of age for each economic, regional or subregional grouping multiplied by the aggregate percentage of underweight children (thousands).

Children under 5 stunted (percentage of children under 5 years, thousands)

The percentage of children aged 0-59 months whose height for age is less than two standard deviations below the median height for age of the international reference population according to the 2006 WHO Child Growth Standards. **Aggregate calculations**: Millennium Development Goal aggregation and imputation methods; weighted averages using children 0-59 months (WPP2012) as weight (percentage of children under 5 years); the total number of children under 5 years of age for each economic, regional or subregional grouping multiplied by the aggregate percentage of stunted children (thousands).

Children under 5 wasted (percentage of children under 5 years, thousands)

The percentage of children aged 0-59 months whose weight for height is less than two standard deviations below the median weight for height of the international reference population according to the 2006 WHO Child Growth Standards. **Aggregate calculations**: Millennium Development Goal aggregation and imputation

methods; weighted averages using children 0-59 months (WPP2012) as weight (percentage of children under 5 years); the total number of children under 5 years of age for each economic, regional or subregional grouping multiplied by the aggregate percentage of wasted children (thousands).

Children under 1 year immunized against measles (percentage of children under 1)

Children under 1 year of age who have received at least one dose of a measles vaccine. Note that it is generally recommended for children to be immunized against measles at the age of 9 months. **Aggregate calculations:** Millennium Development Goal aggregation and imputation methods (poorest and richest quintiles are not aggregated); weighted averages using children aged 1 year (WPP2012) as weight.

Children under 1 year not immunized against measles (thousands)

Children under 1 year of age who have not received at least one dose of a measles vaccine (estimated only for economic, regional and subregional groupings). **Aggregate calculations:** The number of children under 1 year of age for each economic, regional or subregional grouping multiplied by the percentage of children not immunized against measles (1 minus the percentage of children immunized against measles).

DPT3 immunization rate for children 1 year of age (percentage of 1-year-olds)

The percentage of children 1 year of age who have received three doses of the combined diphtheria, pertussis and tetanus toxoid vaccine in a given year. **Aggregate calculations**: Weighted averages using children 1 year of age (WPP2012) as weight. Missing data are not imputed.

Source

Source of data on stunted and wasted children: UNICEF, WHO, World Bank, UNICEF-WHO-World Bank Joint Child Malnutrition Estimates, 2011 revision (completed July 2012). **Data obtained**: 5 August 2013.

Source of data on neonatal mortality: Inter-agency Group for Child Mortality Estimation (database available from www.childmortality.org/). **Data obtained**: 10 April 2013.

Source of data on DPT3 immunization, immunized against measles: WHO Global Health Observatory Database, World Health Statistics. Data are collected from countries by WHO and UNICEF. Data are reported to WHO and UNICEF by national authorities. Missing country values are estimated using linear interpolation (for middle gaps) and carrying the previous year's data forward (for end gaps). **Data obtained:** 7 August 2013.

Source of other child health data: Millennium Indicators Database. UNICEF is the primary data custodian. Country-level data are generally obtained from national household surveys, including demographic and health surveys, multiple indicator cluster surveys and national nutrition surveys. **Data obtained:** 2 August 2013.

B.1.1 Child health

	Under-5 mortality rate					Infant mortality rate					Neonatal mortality rate				
	Deaths per 1,000 live births					Deaths per 1,000 live births					Deaths per 1,000 live births				
	1990	2000	2005	2008	2011	1990	2000	2005	2008	2011	1990	2000	2005	2008	2011
East and North-East Asia	**46**	**33**	**22**	**18**	**14**	**36**	**27**	**19**	**15**	**12**					
China	49	35	24	19	15	39	29	20	16	13	23	18	13	11	9
DPR Korea	45	58	32	33	33	23	42	26	26	26	22	26	17	17	18
Hong Kong, China															
Japan	6	5	4	3	3	5	3	3	3	2	3	2	1	1	1
Macao, China															
Mongolia	107	63	46	38	31	76	49	37	31	26	27	20	16	14	12
Republic of Korea	8	6	5	5	5	6	5	5	4	4	3	3	2	2	2
South-East Asia	**70**	**47**	**38**	**34**	**30**	**49**	**35**	**29**	**26**	**24**					
Brunei Darussalam	12	10	9	8	7	9	7	7	6	6	7	5	5	4	4
Cambodia	117	102	69	54	43	85	76	56	45	36	37	34	27	23	19
Indonesia	82	53	42	37	32	54	38	31	28	25	29	22	19	17	15
Lao PDR	148	81	60	50	42	102	60	46	39	34	38	27	22	20	18
Malaysia	17	11	9	7	7	15	9	7	6	6	9	6	5	4	3
Myanmar	107	84	73	68	62	77	62	55	52	48	42	36	33	32	30
Philippines	57	39	32	29	25	40	29	25	23	20	22	17	15	13	12
Singapore	8	4	3	3	3	6	3	2	2	2	4	2	1	1	1
Thailand	35	19	16	14	12	29	16	14	12	11	18	11	10	8	8
Timor-Leste	180	109	79	65	54	135	86	64	54	46	48	37	30	27	24
Viet Nam	50	34	28	25	22	36	26	22	20	17	22	17	15	13	12
South and South-West Asia	**114**	**86**	**72**	**65**	**59**	**82**	**64**	**55**	**50**	**46**					
Afghanistan	192	136	119	110	101	129	95	84	78	73	51	43	40	38	36
Bangladesh	139	84	64	54	46	97	62	49	43	37	52	39	33	30	26
Bhutan	138	89	71	62	54	96	65	53	48	42	44	34	30	27	25
India	114	88	75	68	61	81	64	56	51	47	47	41	37	35	32
Iran (Islamic Rep. of)	61	44	34	29	25	47	35	28	24	21	27	21	17	15	14
Maldives	105	53	26	17	11	76	41	21	14	9	36	24	14	10	7
Nepal	135	83	65	56	48	94	62	50	44	39	51	39	33	30	27
Pakistan	122	95	84	78	72	95	76	68	64	59	49	42	39	37	36
Sri Lanka	29	19	16	14	12	24	16	14	12	11	16	11	10	9	8
Turkey	72	35	24	19	15	60	28	19	15	12	29	18	13	11	9
North and Central Asia	**51**	**42**	**34**	**31**	**28**	**42**	**35**	**29**	**26**	**24**					
Armenia	47	30	23	20	18	40	26	21	18	16	23	17	14	13	11
Azerbaijan	95	69	57	50	45	75	57	48	43	39	31	26	23	21	19
Georgia	47	33	26	23	21	40	29	23	21	18	27	21	18	16	15
Kazakhstan	57	42	35	31	28	48	37	31	28	25	24	19	17	16	14
Kyrgyzstan	70	47	39	35	31	58	41	34	30	27	28	22	19	17	16
Russian Federation	27	21	17	14	12	23	18	14	12	10	13	11	9	8	7
Tajikistan	114	95	79	71	63	89	76	64	58	53	35	32	28	27	25
Turkmenistan	94	71	62	57	53	75	59	52	48	45	31	27	24	23	22
Uzbekistan	75	61	55	51	49	62	51	47	44	42	20	18	16	16	15
Pacific	**35**	**31**	**28**	**26**	**24**	**26**	**24**	**22**	**20**	**19**					
American Samoa															
Australia	9	6	6	5	5	8	5	5	4	4	5	3	3	3	3
Cook Islands	19	17	13	11	10	16	15	11	10	8	9	9	7	6	5
Fiji	30	22	20	18	16	25	19	17	15	14	13	10	9	8	8
French Polynesia															
Guam															
Kiribati	88	65	56	52	47	64	50	44	41	38	28	24	22	20	19
Marshall Islands	52	38	32	29	26	41	31	26	24	22	19	15	14	13	12
Micronesia (F.S.)	56	49	45	44	42	44	39	36	35	34	22	19	19	18	17
Nauru	40	40	40	40	40	32	32	32	32	32	22	22	22	22	22
New Caledonia															
New Zealand	11	7	7	6	6	9	6	5	5	5	4	3	3	3	3
Niue	14	29	28	24	21	12	25	23	20	18	7	13	13	11	10
Northern Mariana Islands															
Palau	32	25	22	20	19	27	20	17	15	14	14	12	10	10	9
Papua New Guinea	88	72	65	62	58	64	54	50	47	45	29	26	25	24	23
Samoa	30	23	21	20	19	25	19	18	17	16	11	9	9	8	8
Solomon Islands	42	31	26	24	22	34	25	22	20	18	17	14	12	11	11
Tonga	25	20	18	17	15	21	17	15	14	13	12	10	9	8	8
Tuvalu	58	43	37	33	30	45	35	30	27	25	22	18	16	15	14
Vanuatu	39	23	18	15	13	31	20	15	13	11	16	11	9	8	7
Asia and the Pacific	**82**	**64**	**52**	**46**	**40**	**60**	**48**	**40**	**36**	**32**					
Developed countries	7	5	4	4	4	5	4	3	3	3					
Developing countries	83	65	53	47	41	61	49	41	36	32					
LLDC	115	90	76	68	61	84	67	58	53	48					
LDC	137	93	75	66	57	95	67	56	50	44					
ASEAN	69	47	38	34	30	48	35	29	26	23					
ECO	101	80	69	62	57	78	63	54	50	46					
SAARC	119	89	75	68	62	85	66	57	52	48					
Central Asia	77	61	52	47	43	62	51	44	40	37					
Pacific island dev. econ.	74	62	56	53	50	55	47	43	41	39					
Low income econ.	130	90	73	64	56	90	66	55	49	44					
Lower middle income econ.	104	79	67	60	55	74	58	51	46	43					
Upper middle income econ.	49	34	24	19	15	39	28	20	16	13					
High income econ.	7	5	4	4	4	6	4	4	3	3					
Africa	**163**	**142**	**122**	**110**	**100**	**100**	**87**	**77**	**70**	**64**					
Europe	**14**	**9**	**7**	**6**	**5**	**12**	**7**	**6**	**5**	**5**					
Latin America and Carib.	**53**	**34**	**26**	**22**	**19**	**42**	**28**	**22**	**19**	**16**					
North America	**11**	**8**	**8**	**8**	**7**	**9**	**7**	**7**	**6**	**6**					
World	**88**	**75**	**64**	**58**	**52**	**61**	**52**	**45**	**41**	**37**					

B.1.2 Child immunization

	Immunized against measles					DPT3 immunization rate for 1-year olds					Children under 5 underweight				
	% of children under 1					% of 1-year-olds					% of children under 5				
	1990	2000	2005	2008	2011	1990	2000	2005	2008	2011	1990	2000	2005	2008	2011
East and North-East Asia	**97**	**85**	**87**	**97**	**99**						**13**	**8**	**5**	**4**	
China	98	84	86	97	99	97	85	87	97	100	13	7	5	4	
DPR Korea	98	78	96	98	99	98	80	79	92	94		25			
Hong Kong, China															
Japan	73	96	98	95	94	87	85	98	98	102					
Macao, China															
Mongolia	92	92	97	97	98	69	94	99	96	99		12	5		
Republic of Korea	93	95	99	92	99	74	97	96	94	99					
South-East Asia	**70**	**80**	**84**	**87**	**89**						**33**	**24**	**22**	**19**	**17**
Brunei Darussalam	99	99	98	99	91	100	99	108	98	97					
Cambodia	34	65	79	89	93	38	59	82	91	94		40		29	
Indonesia	58	74	77	80	89	88	76	90	77	83		25	24		
Lao PDR	32	42	41	52	69	18	53	49	61	78		36			
Malaysia	70	88	90	94	95	90	95	95	96	95	22				
Myanmar	68	84	80	98	99	69	82	73	85	86	33	30			
Philippines	85	78	92	92	79	88	79	89	91	80	30			21	
Singapore	84	96	96	95	95	85	98	96	97	96		3			
Thailand	80	94	96	98	98	85	97	98	99	99					
Timor-Leste			48	73	62			55	79	67					
Viet Nam	88	97	95	92	96	88	96	95	93	95		27	23	20	12
South and South-West Asia	**58**	**60**	**70**	**78**	**78**						**48**	**40**	**37**	**35**	**34**
Afghanistan	20	27	50	59	62	25	24	58	64	82					
Bangladesh	65	72	94	96	96	69	68	78	87	90	62	42	37		36
Bhutan	93	78	93	99	95	84	92	95	96	95				12	
India	56	55	64	74	74	100	94	90	84	85					
Iran (Islamic Rep. of)	85	99	94	98	99	91	100	95	99	99					
Maldives	96	99	97	97	96	94	98	98	98	96					
Nepal	57	71	74	79	88	80	80	75	82	92					29
Pakistan	50	59	78	81	80	83	78	80	73	89					32
Sri Lanka	80	99	99	98	99	86	103	100	98	99		23			
Turkey	78	87	91	97	97	74	85	90	96	97				2	
North and Central Asia		**95**	**96**	**96**	**97**										
Armenia		92	94	94	97		93	90	89	95			4		
Azerbaijan		67	67	66	67		98	93	95	95		14			
Georgia		73	92	96	94		98	84	92	94			2		
Kazakhstan		99	99	99	99		97	98	99	99					
Kyrgyzstan		98	99	99	97		99	98	95	96					
Russian Federation		97	99	99	98		96	98	98	97					
Tajikistan		88	85	86	98	86	96	95	86	96			15		
Turkmenistan		96	99	99	99		97	99	96	97		11	8		
Uzbekistan		99	99	98	99		99	99	98	99					
Pacific	**81**	**80**	**81**	**78**	**82**										
American Samoa															
Australia	86	91	94	94	94	95	90	92	92	92					
Cook Islands	67	76	99	95	89	93	92	114	100	93					
Fiji	84	81	90	94	94	82		75	99	84					
French Polynesia															
Guam															
Kiribati	75	80	85	72	90	97	90	79	82	99					
Marshall Islands	52	94	86	86	97	92	39	77							
Micronesia (F.S.)	81	85	96	86	92	85	85	94		84					
Nauru		7	79	99	99	74	44	80	100	100					
New Caledonia															
New Zealand	90	85	82	86	93	90	90	89	89	95					
Niue	99	99	99	99	99		100	85	100	99					
Northern Mariana Islands															
Palau	98	83	98	97	85	100	96	98	92	84					
Papua New Guinea	67	62	63	54	60	68	59	61	52	61			18		
Samoa	89	93	57	45	67	90	100	64	46	91					
Solomon Islands	70	85	70	60	73	77		78	78	88					
Tonga	86	95	99	99	99	94	95	99	100	100					
Tuvalu	95	81	62	93	98	100	82	93	99	96					
Vanuatu	66	61	53	52	52	76	90	66		92					
Asia and the Pacific	**74**	**71**	**78**	**86**	**87**						**32**	**29**	**26**	**24**	**22**
Developed countries	76	95	97	94	94										
Developing countries	74	70	78	85	87						32	29	26	24	22
LLDC	64	66	74	79	83							27	22	19	16
LDC	58	66	80	87	89						53	40	34	32	31
ASEAN	70	80	84	87	89						33	24	22	19	17
ECO	65	70	81	85	86							23	20	19	18
SAARC	56	57	69	77	77						50	43	40	38	36
Central Asia		93	94	93	95							8	5		
Pacific island dev. econ.	70	67	66	58	64										
Low income econ.	62	68	83	88	91						54	38	33	31	29
Lower middle income econ.	59	62	71	78	78						45	39	36	34	32
Upper middle income econ.	94	86	88	97	99						14	8	5	4	
High income econ.	81	95	97	94	95										
Africa	**61**	**57**	**64**	**70**	**76**						**28**	**25**	**22**	**21**	**20**
Europe	**83**	**90**	**92**	**93**	**91**										
Latin America and Carib.	**76**	**93**	**93**	**94**	**93**						**10**	**6**	**4**	**4**	**3**
North America	**90**	**91**	**93**	**91**	**91**										
World	**73**	**72**	**77**	**83**	**85**						**28**	**24**	**22**	**20**	**19**

B.1.3 Child health: number of children affected

	Under-5 mortality rate					Infant mortality rate				
	Thousand deaths					Thousand deaths				
	1990	2000	2005	2008	2011	1990	2000	2005	2008	2011
East and North-East Asia	**1 336.5**	**600.6**	**419.0**	**352.6**	**288.9**	**1 051.5**	**491.3**	**354.9**	**300.7**	**247.8**
South-East Asia	**839.1**	**532.0**	**440.5**	**390.7**	**339.7**	**585.6**	**394.2**	**337.7**	**304.3**	**268.2**
South and South-West Asia	**4 558.0**	**3 386.8**	**2 801.7**	**2 505.1**	**2 248.5**	**3 275.8**	**2 511.4**	**2 122.8**	**1 925.3**	**1 751.3**
North and Central Asia	**201.5**	**117.1**	**106.0**	**102.1**	**96.1**	**165.5**	**97.5**	**89.1**	**86.4**	**81.6**
Pacific	**18.3**	**17.3**	**16.6**	**16.0**	**15.2**	**13.8**	**13.3**	**12.9**	**12.5**	**12.0**
Asia and the Pacific	**6 956.8**	**4 656.1**	**3 786.0**	**3 368.5**	**2 990.5**	**5 094.4**	**3 509.3**	**2 919.0**	**2 630.8**	**2 362.6**
Developed countries	11.2	7.2	6.0	5.6	5.4	8.3	5.4	4.7	4.3	4.1
Developing countries	6 945.8	4 649.1	3 780.0	3 363.0	2 985.1	5 086.2	3 504.0	2 914.4	2 626.6	2 358.5
LLDC	395.8	310.3	271.5	247.3	221.9	289.2	231.8	206.7	190.9	173.5
LDC	942.1	645.7	502.1	429.2	367.6	656.4	470.8	377.2	327.6	284.5
ASEAN	833.3	527.9	437.6	388.2	337.6	581.2	391.0	335.3	302.2	266.4
ECO	1 022.4	755.4	658.2	619.2	569.2	789.6	591.0	521.1	494.5	458.9
SAARC	4 344.3	3 285.0	2 727.3	2 441.3	2 193.0	3 105.0	2 429.6	2 062.6	1 873.5	1 706.2
Central Asia	146.8	88.7	80.7	79.2	76.0	119.4	73.7	68.1	67.4	65.1
Pacific island dev. econ.	15.8	15.8	15.0	14.4	13.7	11.7	12.0	11.6	11.2	10.7
Low income econ.	958.1	672.5	519.5	448.7	388.9	667.0	491.6	392.0	343.9	302.3
Lower middle income econ.	4 313.0	3 224.3	2 714.5	2 451.0	2 211.3	3 086.5	2 394.0	2 062.1	1 889.4	1 727.8
Upper middle income econ.	1 661.5	744.3	539.4	457.1	379.1	1 322.4	612.1	454.9	388.2	323.7
High income econ.	17.4	10.9	9.0	8.4	8.2	13.5	8.5	7.2	6.7	6.4
Africa	**4 272.8**	**4 394.2**	**4 166.6**	**3 980.0**	**3 788.1**	**2 613.6**	**2 705.7**	**2 606.9**	**2 526.8**	**2 444.7**
Europe	**102.3**	**53.0**	**43.6**	**39.3**	**34.6**	**86.6**	**44.7**	**36.9**	**33.2**	**29.3**
Latin America and Carib.	**630.8**	**402.3**	**297.8**	**248.8**	**211.4**	**498.4**	**332.6**	**248.9**	**209.1**	**178.4**
North America	**48.8**	**36.5**	**35.8**	**34.8**	**33.9**	**40.6**	**30.5**	**30.4**	**29.9**	**29.0**
World	**12 189.1**	**9 687.8**	**8 456.8**	**7 790.3**	**7 170.6**	**8 471.0**	**6 738.4**	**5 944.9**	**5 526.7**	**5 136.1**

	Children under 5 underweight					Children under 1 not immunized against measles				
	Thousands					Thousands				
	1990	2000	2005	2008	2011	1990	2000	2005	2008	2011
East and North-East Asia	**19 820.5**	**7 415.7**	**4 340.4**	**3 733.6**		**918.3**	**2 686.1**	**2 329.8**	**621.7**	**256.0**
South-East Asia	**18 828.8**	**13 128.8**	**12 306.8**	**10 974.7**	**9 620.2**	**3 430.6**	**2 146.1**	**1 765.6**	**1 435.8**	**1 200.1**
South and South-West Asia	**84 645.8**	**73 509.9**	**68 055.1**	**64 140.9**	**61 150.2**	**15 349.7**	**14 985.6**	**10 895.0**	**7 922.3**	**7 853.5**
North and Central Asia							**136.7**	**109.3**	**121.8**	**111.0**
Pacific						**99.0**	**109.8**	**110.9**	**132.3**	**114.7**
Asia and the Pacific	**131 256.3**	**99 367.2**	**89 543.2**	**83 478.3**	**78 408.5**	**20 523.1**	**20 073.4**	**15 216.7**	**10 240.7**	**9 543.3**
Developed countries						385.2	76.7	49.1	80.9	87.1
Developing countries	128 686.5	97 246.4	87 661.0	81 762.4	76 819.9	20 137.9	19 997.1	15 167.9	10 159.9	9 456.3
LLDC		4 151.8	3 555.5	3 204.5	2 734.8	1 115.6	1 078.1	870.9	735.6	576.4
LDC	15 969.9	12 642.2	10 931.4	10 035.6	9 395.0	2 613.3	2 213.9	1 247.9	833.0	681.5
ASEAN	18 788.2	13 059.2	12 233.8	10 894.3	9 536.9	3 411.3	2 128.4	1 747.4	1 425.8	1 185.6
ECO		10 226.0	8 754.1	8 503.0	8 536.7	3 304.5	2 638.1	1 692.3	1 391.5	1 361.4
SAARC	81 428.6	72 726.1	67 668.7	63 880.8	60 949.6	14 797.5	14 802.7	10 704.5	7 857.2	7 801.5
Central Asia		564.3	355.7				97.3	94.2	105.6	77.5
Pacific island dev. econ.						59.2	80.8	85.8	108.6	94.3
Low income econ.	17 436.0	13 088.3	11 264.0	10 236.4	9 526.0	2 550.1	2 207.0	1 170.0	767.7	615.5
Lower middle income econ.	84 209.1	73 326.2	69 220.6	65 110.5	61 543.0	15 595.6	14 835.9	11 357.7	8 639.1	8 457.8
Upper middle income econ.	23 921.9	8 581.3	5 087.1	4 391.3		1 913.5	2 904.8	2 616.9	702.6	364.0
High income econ.						457.9	109.2	57.8	124.8	98.9
Africa	**30 224.9**	**32 432.9**	**32 370.8**	**33 307.0**	**32 812.7**	**9 159.3**	**12 106.6**	**11 262.0**	**9 928.5**	**8 418.3**
Europe						**1 181.8**	**615.3**	**492.4**	**418.9**	**537.7**
Latin America and Carib.	**5 854.1**	**3 196.0**	**2 511.9**	**2 081.2**	**1 776.1**	**2 733.3**	**822.3**	**753.7**	**605.2**	**735.6**
North America						**442.0**	**374.8**	**313.5**	**398.0**	**427.9**
World	**179 379.5**	**144 989.1**	**134 197.7**	**128 457.5**	**122 323.0**	**34 647.6**	**34 497.4**	**28 661.5**	**22 159.5**	**20 257.0**

B.2. Maternal and reproductive health

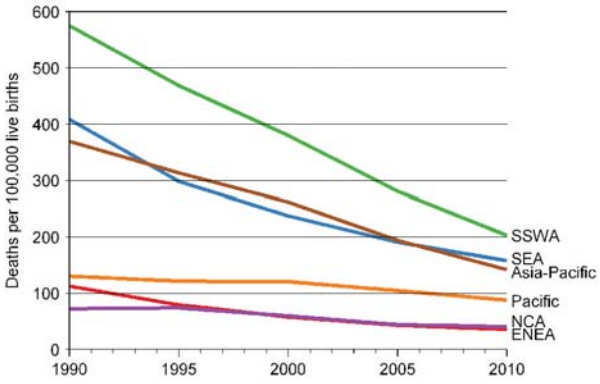
No woman should die giving birth. Yet, every day about 800 women die giving birth around the globe and more than one third of these deaths occur in the Asian and Pacific region, the majority of which are in South Asia. Great efforts have been made in the last decades to reduce maternal mortality in the region and, while certain progress has been achieved, Asia and the Pacific is still lagging behind in achieving Millennium Development Goal 5 in the areas of maternal mortality, skilled birth attendance, antenatal care and access to sexual and reproductive health. The vast majority of maternal deaths are preventable, and stronger action and bolder policies need to be pursued if the region as a whole aims to achieve Millennium Development Goal 5 by 2015.

288 women in Asia and the Pacific die every day due to complications during pregnancy or at childbirth

The maternal mortality ratio in Asia and the Pacific was 142 per 100,000 live births in 2010, equivalent to a total of 105,012 maternal deaths. This means that, on average, 288 women in Asia and the Pacific die every day due to complications during pregnancy or at childbirth. However, the 2010 maternal mortality ratio in the region has reduced almost 62 per cent from the 1990 level of 369 deaths per 100,000 live births. In comparison the global reduction in maternal mortality ratio over the two decades was 46 per cent. In the region in 2010, the maternal mortality ratio ranged from levels as high as 470 deaths per 100,000 live births in the Lao People's and 460 in Afghanistan (levels similar to the African average of 463) to levels as low as 3 in Singapore, 5 in Japan and 7 in Australia, which are comparable to the European average of just under 11. The most common causes behind maternal mortality are complications during pregnancy or at childbirth, such as haemorrhages and infections.[1] It is for this reason that skilled care during childbirth, especially emergency obstetric care, is key to reducing maternal mortality. Bhutan has managed to reduce maternal mortality by more than three quarters since 1990. This reduction is thanks to an increase in the births attended by skilled health personnel, from 24 per cent in 2000 to 65 per cent in 2010.

It is important to underline that a reduction in maternal deaths does not necessarily require a high national income. Lower-middle-income economies such as Bhutan and Maldives have managed some of the largest reductions in maternal mortality through the improvement of their health systems and the increase in access to family planning and skilled health personnel. Even Cambodia, a low-income economy, is a success story, having been able to reduce maternal mortality from 830 deaths per 100,000 live births in 1990 to 250 deaths per 100,000 live births in 2010. In the mid-2000s, Cambodia undertook a systematic upgrading of its public health facilities, making maternity services more accessible and increasing the antenatal care coverage of at least one visit, from only 38 per cent of pregnant women in 2000 to 89 per cent in 2010.

Figure B.2-1
Maternal mortality, Asian and Pacific subregions, 1990-2010



[1] K.S. Khan and others, "WHO analysis of causes of maternal death: a systematic review", Lancet, vol. 367, No. 9516 (April 2006), pp. 1066-1074. Available from www.ncbi.nlm.nih.gov/pubmed?cmd=Retrieve&list_uids=16581405.

Despite overall progress, differentials between subregions remain, with the highest maternal mortality occurring in South Asia.

South and South-West Asia has the highest maternal mortality ratios of all subregions in Asia and the Pacific, at 203 deaths per 100,000 live births, as opposed to 158 in South-East Asia and 37 in East and North-East Asia (excluding Japan). Because of the size of the population in this subregion, it also has the highest absolute number of maternal deaths, at over 77,700 in 2010. While having achieved some progress, the most populous countries of this subregion, namely Bangladesh, India and Pakistan, continue to struggle in reducing the number of maternal deaths due to a lack of skilled attendance at birth.

Slightly more than half of all births in South and South-West Asia are attended by skilled health personnel. This amounts to about 18 million births that are not attended by a skilled professional in the subregion, which is close to 88 per cent of total unattended births in Asia and the Pacific. At the country level, the figures for Bangladesh and Nepal were 32 per cent and 36 per cent, respectively, in 2011. Conversely, for the subregions of East and North-East Asia (excluding Japan) and South-East Asia, the figures were 99 per cent and 81 per cent, respectively.

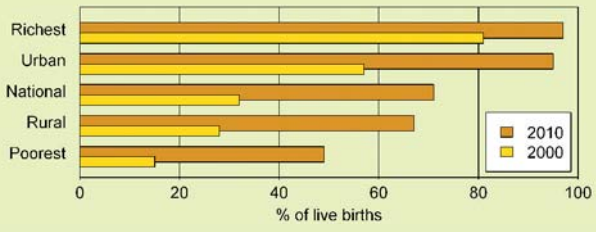
More work needs to be done to reduce maternal mortality in Asia and the Pacific. Governments need to reinforce their commitment to improve their health systems by addressing the main challenges that slow progress. Such challenges include inadequate human resource capacities, a lack of essential tools and equipment, poor prioritization of maternal health policies and planning, as well as limited access to these systems due to high user fees for the poor and other cultural or social barriers women face.

Box B.2-1
Disparities within countries are still significant, even in those that have made good progress

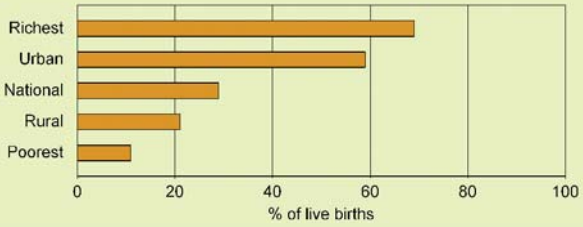
Just as advancements differ within regions and subregions, improvement at the national level does not imply advancement for the whole country. When considering the two different stories of Cambodia and Timor-Leste,[a] it can be observed that not everyone benefits equally from improvement at the country level. Between 2000 and 2010, Cambodia increased the number of births attended by skilled health personnel by more than 100 per cent. In Timor-Leste, on the other hand, the proportion of births attended by skilled health personnel increased from 25.8 per cent in 1997 to 29.3 per cent in 2010. However, subnational data reveal wide gaps between the different geographical areas and wealth quintiles within each of these countries.

In the case of Cambodia, pregnant mothers in urban areas and in the richest wealth quintile had almost complete access to attended skilled health personnel during childbirth. In contrast, only two thirds of pregnant mothers in rural areas could benefit from such services, and only half of those in the poorest wealth quintile could give birth to a child with the support of health personnel. These disparities are more evident in the case of Timor-Leste, where women in the richest quintile are seven times more likely to give birth with the support of a skilled health professional than women in the poorest quintile. While the result is not surprising, what is notable is the wide gap between subgroups.

Births attended by skilled health personnel in Cambodia by subgroup in 2000 and 2010



Births attended by skilled health personnel in Timor-Leste by subgroup in 2010



Source: Data repository WHO, GHO available at www.who.int/gho/database/en/

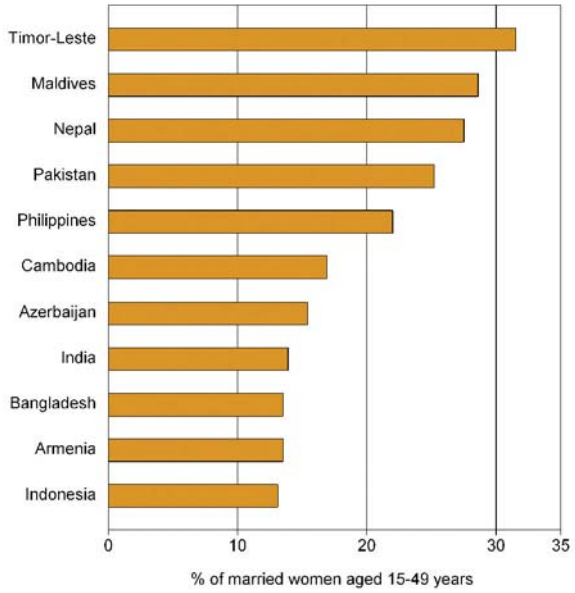
[a] Cambodia has a GDP per capita in purchasing power parity terms 1.4 times as high as that of Timor-Leste.

The lack of support for women's access to sexual and reproductive health is an obstacle in reducing maternal mortality.

In terms of saving mothers' lives, one main area often overlooked is the right to sexual and reproductive health. Based on one estimate, 41 per cent of all pregnancies are unintended at the global level and 38 per cent in Asia, which is equivalent to 45.1 million unintended pregnancies in the region.[2] At the global level, about half of these unintended pregnancies end up in abortions and approximately 13 per cent in miscarriages.[3] More important is the fact that most young women are the ones who are affected by an unintended pregnancy. All women should have the right to decide whether and when to have children. According to the United Nations Population Fund, access to voluntary family planning alone could reduce maternal deaths by more than one third and child deaths by as much as 20 per cent.[4] In South Asia, complications during pregnancy and childbirth are the leading causes of death for women of childbearing age. For these reasons, it is very important to improve women's access to family planning. According to the most recent figures available, contraceptive prevalence among women aged 15-49 years in Asia and the Pacific varies widely, from about 20 per cent in Afghanistan and Timor-Leste, to about 80 per cent in China and Thailand. Related to this, the unmet need for family planning is another indicator that identifies the demand for increased family planning and services.

Regarding this unmet need, there is a significant gap between (a) countries such as China and Thailand, with about 3 per cent, and Viet Nam, with 6.6 per cent, and (b) countries such as Cambodia, the Lao People's Democratic Republic and Timor-Leste, with about 30 per cent.[5] This demonstrates the clear need to raise awareness and to provide women with better information and services in order to ensure their health and that of their families.

Figure B.2-2
Unmet need for family planning, selected Asian and Pacific countries, latest year (percentage)



Source: ICF International, Measure DHS STATCompiler (2012) (accessed 4 July 2013).

Further reading

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————. State of World Population: By Choice Not By Chance – Family Planning, Human Rights and Development. 2012.

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[2] See www.escrh.eu/sites/escrh.eu/files/esc_unwanted_pregnancy_slides1.pdf.
[3] Ibid.
[4] See www.unfpa.org/webdav/site/global/shared/factsheets/srh/EN-SRH%20fact%20sheet-LifeandDeath.pdf.
[5] ICF International, Measure DHS STATCompiler (2012) (accessed 4 July 2013).

Technical notes

Maternal mortality (deaths per 100,000 live births, number of deaths)

Maternal mortality is the death of a woman while pregnant or within 42 days after termination of pregnancy, irrespective of the duration and location (domestic or abroad) of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes. **Aggregate calculations:** Millennium Development Goal aggregation and imputation methods; weighted averages using the number of live births (WPP2012) as weight (per 100,000 live births); sum of individual country values (number of deaths).

Births attended by skilled health personnel: total (percentage of live births)

Births attended by skilled health personnel (doctors, nurses or midwives) are deliveries attended by personnel trained in (a) providing life-saving obstetric care, including giving the necessary supervision, care and advice to women during pregnancy, labour and the post-partum period, (b) conducting deliveries on their own and (c) caring for newborns. Traditional birth attendants, even if they have received a short training course, are not included. Poorest and richest quintiles of the population are based on income data. **Aggregate calculations:** Millennium Development Goal aggregation and imputation methods; weighted averages using the number of live births (WPP2012) as weight.

Births not attended by skilled health personnel (thousands)

Births not attended by skilled health personnel is calculated for only economic, regional and subregional groupings. **Aggregate calculations:** The number of births for each economic, regional or subregional grouping multiplied by the percentage of births not attended by skilled health personnel (1 minus the percentage of births attended by skilled health personnel).

Contraceptive prevalence rate, females 15-49 years old (percentage)

The contraceptive prevalence rate is the proportion of women currently using, or whose sexual partner is using, a method of contraception among women of reproductive age (usually aged 15-49 years). In some countries the denominator is married women only, as (reported) sexual activity outside of marriage is considered rare.

Antenatal care coverage: at least four visits, at least one visit (percentage of women with a live birth)

At least four visits: Women aged 15-49 years with a live birth in a given time period who received antenatal care four or more times with any provider (whether skilled or unskilled). **At least one visit:** Women aged 15-49 years with a live birth in a given time period who received antenatal care provided by skilled health personnel (doctors, nurses or midwives) at least once during pregnancy. A skilled health worker/attendant is an accredited health professional, such as a midwife, doctor or nurse, who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and the immediate post-natal period, and in the identification, management and referral of complications in women and newborns. Both trained and untrained traditional birth attendants are excluded. **Aggregate calculations:** Millennium Development Goal aggregation and imputation methods; weighted averages using the number of live births (WPP2012) as weight.

Women lacking antenatal care coverage: at least one visit (thousands)

Women lacking antenatal care coverage is calculated for only economic, regional and subregional groupings. **Aggregate calculations:** The number of women with live births for each economic, regional or subregional grouping multiplied by the percentage of women lacking antenatal care (1 minus the percentage of women with antenatal care coverage).

Source

Source of maternal mortality data: Millennium Indicators Database. Based on data from the World Health Organization (WHO), the United Nations Development Programme, the United Nations Children's Fund (UNICEF) and the World Bank. Sources and methods used to determine maternal mortality vary by country. Primary sources of data include vital registration systems, household surveys (direct and indirect methods), reproductive-age mortality studies, disease surveillance or sample registration systems, special studies on maternal mortality and national population censuses. Despite being based on established demographic techniques and empirical data from other countries, the country-specific point estimates obtained through the statistical model do not necessarily represent the true levels of maternal mortality. **Data obtained:** 2 August 2013.

Source of data on births attended by skilled health personnel: rural, urban, poorest and richest quintiles: WHO Global Health Observatory. Microdata are from nationally representative surveys including demographic and health surveys, fertility and family surveys, reproductive health surveys with assistance from the Centers for Disease Control and Prevention in the United States of America, multiple indicator cluster surveys, and national family planning, or health, or household, or socio-economic surveys. Survey data from sources other than the national statistical system are included when other data are not available. The data are taken from published survey reports or, in exceptional cases, other published analytic reports. UNICEF and WHO base their estimates on the available data sources and internal verification procedures. **Data obtained:** 5 July 2012.

Source of data on births attended by skilled health personnel: antenatal care coverage, at least one visit and at least four visits, contraceptive prevalence rate and unmet need for family planning: Millennium Indicators Database. National-level household surveys, including multiple indicator cluster surveys and demographic and health surveys, are the most common sources of data. These surveys are generally conducted every three to five years. UNICEF reviews the data in collaboration with WHO. **Data obtained:** 2 August 2013.

B.2.1 Maternal mortality and reproductive health

	Maternal mortality			Births attended by skilled health personnel		Contraceptive prevalence rate		Antenatal care coverage: At least one visit		Antenatal care coverage: At least four visits	
	Deaths per 100,000 live births			% of live births		% of females 15-49 years old		% of women with a live birth			
	1990	2000	2010	Earliest	Latest	Earliest	Latest	Earliest	Latest	Earliest	Latest
East and North-East Asia	**113**	**58**	**36**	**94.4 (90)**	**99.3 (11)**			**70.3 (92)**	**94.2 (10)**		
China	120	61	37	94.0 (90)	99.6 (10)	84.6 (92)	84.6 (06)	69.7 (92)	94.1 (10)		
DPR Korea	97	120	81		100.0 (09)	61.9 (92)			100.0 (09)		93.5 (09)
Hong Kong, China						86.2 (92)	79.5 (07)				
Japan	12	10	5	100.0 (90)		57.9 (90)					
Macao, China											
Mongolia	120	96	63	93.6 (98)	99.8 (11)	57.3 (94)	55.0 (10)	89.8 (98)	99.0 (10)		
Republic of Korea	18	19	16	98.0 (90)		79.4 (91)	80.0 (09)				
South-East Asia	**408**	**237**	**158**	**47.5 (90)**	**80.9 (11)**			**65.7 (91)**	**91.9 (11)**	**43.6 (91)**	**79.9 (11)**
Brunei Darussalam	29	24	24	98.0 (94)	99.9 (09)			100.0 (94)	99.0 (09)		
Cambodia	830	510	250	34.0 (98)	71.0 (10)	12.6 (95)	50.5 (11)	34.3 (98)	89.1 (10)		59.4 (10)
Indonesia	600	340	220	31.7 (91)	79.4 (07)	49.7 (91)	61.9 (12)	76.3 (91)	92.7 (10)	55.4 (91)	81.5 (07)
Lao PDR	1 600	870	470		20.3 (06)	18.6 (93)			35.1 (06)		
Malaysia	53	39	29	92.8 (90)	98.6 (09)	55.1 (94)			90.7 (09)		
Myanmar	520	300	200	46.3 (91)	70.6 (10)	16.8 (91)	46.0 (10)	75.8 (97)	83.1 (10)		73.4 (07)
Philippines	170	120	99	52.8 (93)	62.2 (08)	40.0 (93)	48.9 (11)	83.1 (93)	91.1 (08)	52.1 (93)	77.8 (08)
Singapore	6	15	3	100.0 (98)		65.0 (92)					
Thailand	54	66	48		99.5 (09)	73.9 (93)	79.6 (09)	85.9 (96)	99.1 (09)		79.6 (09)
Timor-Leste	1 000	610	300	25.8 (97)	29.3 (10)	25.1 (91)	22.3 (10)	70.9 (97)	84.4 (10)		55.1 (10)
Viet Nam	240	100	59	77.1 (97)	92.9 (11)	65.0 (94)	77.8 (11)	70.6 (97)	93.7 (11)	15.2 (97)	59.6 (11)
South and South-West Asia	**575**	**380**	**203**	**30.9 (91)**	**53.8 (11)**			**48.9 (91)**	**72.7 (11)**	**21.2 (91)**	**39.8 (11)**
Afghanistan	1 300	1 000	460		38.6 (11)		21.8 (10)		47.9 (11)		14.6 (11)
Bangladesh	800	400	240	9.5 (94)	31.7 (11)	39.9 (91)	61.2 (11)	25.7 (94)	54.6 (11)	6.0 (94)	25.5 (11)
Bhutan	1 000	430	180	14.9 (94)	64.5 (10)	18.8 (94)	65.6 (10)		97.3 (10)		77.3 (10)
India	600	390	200	34.2 (93)	52.3 (08)	40.7 (93)	54.8 (08)	61.9 (93)	74.2 (06)	26.9 (93)	37.0 (06)
Iran (Islamic Rep. of)	120	48	21	86.1 (97)		64.6 (92)		76.5 (97)			
Maldives	830	190	60	90.0 (94)	94.8 (09)	29.0 (91)	34.7 (09)		99.1 (09)	65.0 (99)	85.1 (09)
Nepal	770	360	170	7.4 (91)	36.0 (11)	24.1 (92)	49.7 (11)	15.4 (91)	58.3 (11)	8.8 (96)	50.1 (11)
Pakistan	490	380	260	18.8 (91)	43.0 (11)	11.8 (91)	27.0 (08)	25.6 (91)	60.9 (07)	14.2 (91)	28.4 (07)
Sri Lanka	85	58	35	94.1 (93)	98.6 (07)	66.1 (93)	68.4 (07)	80.2 (93)	99.4 (07)		92.5 (07)
Turkey	67	39	20	75.9 (93)	91.3 (08)	62.6 (93)	73.0 (08)	62.3 (93)	92.0 (08)	35.9 (93)	73.7 (08)
North and Central Asia	**73**	**60**	**40**	**96.4 (90)**	**98.8 (10)**						
Armenia	46	38	30	99.7 (90)	99.5 (10)	56.0 (91)	54.9 (10)	82.0 (97)	99.1 (10)		92.8 (10)
Azerbaijan	56	65	43	97.3 (90)	99.4 (10)		51.1 (06)	98.3 (97)	76.6 (06)		45.2 (06)
Georgia	63	58	67	96.6 (90)	99.9 (09)		53.4 (10)	74.0 (97)	97.6 (10)		90.2 (10)
Kazakhstan	92	70	51	99.0 (90)	100.0 (10)	59.1 (95)	51.0 (11)	92.5 (95)	99.9 (06)	81.9 (95)	
Kyrgyzstan	73	82	71	98.9 (90)	98.3 (10)	59.5 (97)	47.8 (06)	97.3 (97)	96.9 (06)	81.1 (97)	
Russian Federation	74	57	34	99.2 (90)	99.7 (10)	62.5 (93)	79.5 (07)				
Tajikistan	94	120	65	90.3 (91)	87.7 (10)		27.9 (12)		88.8 (07)		49.4 (07)
Turkmenistan	82	91	67	95.8 (96)	99.5 (06)				99.1 (06)		
Uzbekistan	59	33	28	97.5 (96)	99.9 (06)	55.6 (96)	64.9 (06)	94.9 (96)	99.0 (06)	78.5 (96)	
Pacific	**130**	**121**	**88**	**83.8 (90)**	**81.6 (10)**			**91.0 (91)**	**91.5 (10)**		
American Samoa											
Australia	10	9	7	100.0 (91)		66.7 (95)		100.0 (91)	98.3 (08)		92.0 (08)
Cook Islands				99.0 (91)	100.0 (08)	63.2 (96)			100.0 (08)		
Fiji	32	31	26	100.0 (98)	99.7 (10)				100.0 (08)		
French Polynesia											
Guam											
Kiribati				72.0 (94)	79.8 (09)		22.3 (09)	88.0 (94)	88.4 (09)		70.8 (09)
Marshall Islands				94.9 (98)	99.0 (10)		44.6 (07)		81.2 (07)		77.1 (07)
Micronesia (F.S.)	140	130	100	92.8 (99)	100.0 (09)				80.0 (08)		
Nauru					97.4 (07)		35.6 (07)		94.5 (07)		40.2 (07)
New Caledonia											
New Zealand	18	12	15	95.0 (94)		75.0 (95)		95.0 (94)			
Niue				99.0 (90)	100.0 (08)				100.0 (08)		
Northern Mariana Islands											
Palau				99.0 (90)	100.0 (10)				90.3 (10)		81.0 (10)
Papua New Guinea	390	310	230	53.2 (96)	53.0 (06)	25.9 (97)	32.4 (07)	76.7 (96)	78.8 (06)		54.9 (06)
Samoa	260	150	100	76.0 (90)	80.8 (09)	24.5 (98)	28.7 (09)		93.0 (09)		58.4 (09)
Solomon Islands	150	120	93	83.5 (94)	85.5 (07)		34.6 (07)		73.9 (07)		64.6 (07)
Tonga	67	87	110	92.0 (91)	98.4 (10)				97.9 (10)		
Tuvalu				100.0 (90)	97.9 (07)		30.5 (07)		97.4 (07)		67.3 (07)
Vanuatu	220	120	110	87.0 (94)	74.0 (07)	39.0 (95)	38.4 (07)		84.3 (07)		
Asia and the Pacific	**369**	**262**	**142**	**57.4 (90)**	**72.8 (11)**			**60.8 (91)**	**82.3 (11)**		
Developed countries	12	10	6	100.0 (90)							
Developing countries	376	267	145	56.6 (90)	72.3 (11)			60.7 (91)	82.2 (11)		
LLDC	530	455	212	53.9 (90)	65.8 (11)			47.3 (91)	73.0 (11)		
LDC	820	488	271	12.6 (90)	41.1 (11)			25.9 (91)	59.8 (11)	15.0 (94)	40.4 (11)
ASEAN	407	236	157	47.5 (90)	81.1 (11)			65.8 (91)	92.0 (11)	43.7 (91)	80.0 (11)
ECO	343	311	182	42.8 (90)	65.7 (11)			43.7 (91)	73.5 (11)		
SAARC	618	403	217	27.8 (91)	50.6 (11)			48.1 (91)	70.9 (11)	20.9 (91)	38.4 (11)
Central Asia	71	62	47	93.5 (90)	97.9 (10)			84.3 (95)	96.3 (10)		
Pacific island dev. econ.	319	262	198	63.2 (90)	60.7 (10)			76.4 (94)	79.8 (10)		
Low income econ.	726	445	245	20.5 (90)	47.3 (11)			31.9 (91)	64.1 (11)	15.1 (94)	40.2 (11)
Lower middle income econ.	537	351	195	33.7 (90)	60.0 (11)			57.4 (91)	78.2 (11)	27.9 (91)	48.9 (11)
Upper middle income econ.	111	59	36	91.6 (90)	99.1 (10)			68.5 (92)	94.4 (10)		
High income econ.	14	12	8	99.4 (90)	100.0 (09)						
Africa	**766**	**675**	**463**	**35.2 (90)**	**53.2 (12)**			**53.7 (90)**	**77.1 (12)**	**39.2 (90)**	**48.1 (11)**
Europe	**25**	**13**	**11**								
Latin America and Carib.	**139**	**104**	**80**	**74.2 (90)**	**91.8 (11)**			**74.1 (90)**	**96.9 (11)**	**68.1 (90)**	**87.3 (11)**
North America	**11**	**13**	**20**								
World	**391**	**323**	**212**	**55.5 (90)**	**69.6 (12)**			**60.1 (90)**	**82.8 (12)**		

B.2.2 Maternal mortality: number of women affected

	Maternal mortality				
	Deaths				
	1990	1995	2000	2005	2010
East and North-East Asia	**32 591.9**	**17 446.9**	**10 614.6**	**8 013.6**	**7 214.7**
South-East Asia	**49 164.3**	**34 565.9**	**26 709.7**	**21 836.6**	**18 064.8**
South and South-West Asia	**229 413.8**	**186 415.6**	**150 102.4**	**108 801.7**	**77 712.4**
North and Central Asia	**2 848.9**	**2 276.6**	**1 670.2**	**1 357.0**	**1 379.9**
Pacific	**684.1**	**666.4**	**675.8**	**623.1**	**558.2**
Asia and the Pacific	**314 945.2**	**241 556.7**	**189 910.4**	**140 741.0**	**105 012.0**
Developed countries	189.5	148.3	144.6	106.0	84.8
Developing countries	314 762.2	241 413.3	189 769.6	140 637.9	104 929.5
LLDC	18 171.4	18 824.9	15 643.9	11 604.7	7 702.9
LDC	56 386.0	45 388.1	34 042.7	25 419.2	17 475.9
ASEAN	48 838.0	34 229.6	26 479.6	21 684.3	17 946.4
ECO	34 685.9	34 411.6	29 410.9	23 165.4	18 264.6
SAARC	226 264.2	184 666.7	148 984.5	108 052.2	77 156.3
Central Asia	1 367.1	1 268.5	908.4	789.9	809.0
Pacific island dev. econ.	677.5	649.1	667.2	612.8	543.0
Low income econ.	53 583.6	43 703.2	33 065.0	24 668.0	16 996.7
Lower middle income econ.	222 847.8	176 759.7	143 528.6	106 027.6	79 054.0
Upper middle income econ.	37 859.3	20 573.6	12 880.0	9 710.5	8 684.1
High income econ.	328.4	284.5	265.2	197.0	169.1
Africa	**200 156.1**	**208 631.4**	**208 898.7**	**196 076.5**	**173 141.9**
Europe	**1 779.7**	**1 080.9**	**783.1**	**634.6**	**674.0**
Latin America and Carib.	**16 491.0**	**14 171.0**	**12 402.4**	**10 085.6**	**8 897.2**
North America	**507.5**	**510.5**	**589.8**	**796.3**	**935.3**
World	**540 248.5**	**471 551.8**	**416 866.0**	**351 457.1**	**291 090.7**

	Births not attended by skilled health personnel				
	Thousands				
	1990	1995	2000	2005	2011
East and North-East Asia	**1 634.9**	**2 118.8**	**564.7**	**417.8**	**139.4**
South-East Asia	**6 324.1**	**4 805.2**	**3 744.0**	**3 068.1**	**2 178.3**
South and South-West Asia			**23 911.8**	**21 229.8**	**17 663.0**
North and Central Asia	**140.4**	**86.7**	**125.7**	**55.2**	
Pacific	**84.8**	**96.3**	**106.5**	**113.0**	
Asia and the Pacific	**36 359.7**	**33 323.5**	**28 490.3**	**24 918.9**	**20 182.4**
Developed countries	0.0	0.0			
Developing countries	36 336.3	33 299.7	28 469.3	24 899.1	20 165.9
LLDC	1 580.3	1 733.7	1 884.2	1 684.9	1 237.5
LDC	6 006.2	5 901.1	5 603.4	4 978.9	3 777.6
ASEAN	6 298.2	4 775.3	3 715.0	3 040.0	2 148.9
ECO	5 788.1	5 276.6	4 816.6	4 216.9	3 447.8
SAARC			23 554.4	21 034.1	17 544.2
Central Asia	124.3	74.1	115.1	46.0	
Pacific island dev. econ.	78.2	88.7	98.3	103.9	
Low income econ.	5 866.4		5 493.6	4 833.0	3 636.7
Lower middle income econ.	27 543.6	24 728.8	21 956.8	19 378.7	16 212.2
Upper middle income econ.	2 848.4	2 766.8	970.8	644.4	
High income econ.	15.1	0.4			
Africa	**16 932.8**	**17 162.1**	**17 532.3**	**18 014.6**	**17 893.4**
Europe					
Latin America and Carib.	**3 053.3**	**2 267.7**	**1 706.7**	**1 262.8**	**902.5**
North America					
World	**61 478.5**	**57 624.7**	**52 100.6**	**48 157.2**	**42 324.7**

	Women lacking antenatal care coverage, at least one visit				
	Thousands				
	1990	1995	2000	2005	2011
East and North-East Asia		**4 592.5**	**1 903.2**	**1 857.5**	
South-East Asia			**2 169.7**	**1 389.0**	**918.5**
South and South-West Asia			**17 399.8**	**13 729.8**	**10 447.3**
North and Central Asia					
Pacific				**54.4**	
Asia and the Pacific		**27 298.2**	**22 470.8**	**17 772.5**	**13 153.9**
Developed countries					
Developing countries		26 857.2	22 097.4	17 486.3	12 951.6
LLDC		1 823.2	1 751.2	1 475.1	975.5
LDC			4 482.0	3 543.1	2 578.4
ASEAN			2 154.8	1 377.7	910.0
ECO		5 230.2	4 351.4	3 969.4	2 661.9
SAARC			16 989.2	13 532.3	10 349.1
Central Asia		264.8	136.6	103.7	
Pacific island dev. econ.				56.3	
Low income econ.			4 387.3	3 446.7	2 475.8
Lower middle income econ.			14 631.4	11 467.0	8 831.3
Upper middle income econ.		5 906.8	2 619.3	2 204.9	
High income econ.					
Africa	**12 107.4**	**11 479.7**	**10 832.7**	**9 779.1**	**8 901.3**
Europe					
Latin America and Carib.	**3 070.6**	**2 018.1**	**1 124.8**	**654.5**	**346.4**
North America					
World	**55 145.5**	**45 245.6**	**38 137.7**	**31 246.1**	**24 799.2**

B.3. HIV and AIDS

The HIV epidemic has been stabilizing in the Asian and Pacific region overall. However, new HIV infections and AIDS-related deaths are on the increase in some subregions, and the prevention of new infections among populations at risk remains a key challenge. Between 2007 and 2011, new HIV infections increased by approximately 21 per cent in South-East Asia and in South and South-West Asia. This trend, coupled with funding and policy challenges, underlines the importance of countries' renewed commitments at the 2011 High-level Meeting of the General Assembly on AIDS (see box 1) to combat the disease.

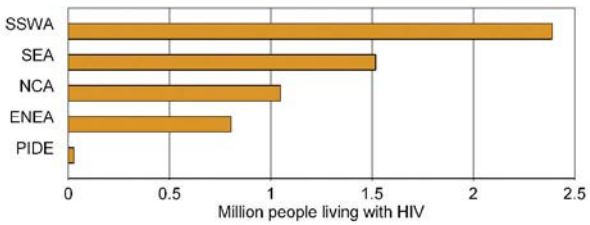
Data are collected regularly in many countries in the region, but more analysis and evaluation are needed to translate them into strategic information for action. Data-related challenges include data gaps for some marginalized groups, inconsistent disaggregation of information by age and gender, and the late release (or lack) of surveillance data in some countries.

There has been mixed progress in reducing new HIV infections and AIDS-related deaths.

In 2011, an estimated 5.8 million people were living with HIV in the region. The countries with the largest epidemics (China, India, Indonesia, Malaysia, Myanmar, the Russian Federation, Thailand and Viet Nam accounted for more than 90 per cent of people living with HIV in the region) reported positive results in addressing their epidemics. The trend in South and South-West Asia is dominated by India with its large number of new HIV infections but that is a number that declined, however, from 144,000 in 2007 to 131,000 in 2011. In neighbouring Pakistan, recent data from national surveillance indicate that the epidemic is expanding.[1] Trends in the HIV epidemic vary across the countries of South-East Asia. Although there was a declining trend between 2006 and 2011 in early epidemic countries such as Cambodia, Myanmar and Thailand, the epidemic in other countries of the subregion has continued to expand, accounting for an overall rising trend in the subregion. There are similar concerns that HIV is increasing in North and Central Asia, with about 990,000 people living with HIV in the Russian Federation.[2]

AIDS-related deaths in 2011 were estimated at about 240,000 for South-East Asia and South and South-West Asia together. These two subregions alone accounted for 15.6 per cent of global AIDS-related deaths. In 2011, AIDS-related deaths in India, the country with the highest HIV burden in the region, stood at 147,729, although this represented a decline of 28.5 per cent from 2007. During the same period, AIDS-related deaths declined by 37.5 per cent in the Pacific.

Figure B.3-1
HIV prevalence in Asia and the Pacific, total, 2011



There are key populations at higher risk of HIV exposure and transmission.

HIV is particularly affecting specific populations (as well as their intimate partners), such as people who inject drugs, male and female sex workers and their clients, and men who have sex with men, as well as certain vulnerable populations, such as migrants, transgender persons, refugees, prisoners and orphans, in specific countries or contexts throughout the region. The risk behaviours of these populations (having unprotected sex and sharing injecting equipment), compounded by socioeconomic factors within countries, are the main drivers of

[1] Pakistan, National AIDS Control Program, HIV Second Generation Surveillance in Pakistan: National Report Round IV 2011 (2011).
[2] Joint United Nations Programme on HIV/AIDS, *World AIDS Day Report 2012* (2012).

the epidemic. Young people below 25 years of age from these key populations face yet more risks, as data consistently show that they are even less likely than their older counterparts to use condoms or to seek testing for HIV. HIV is also concentrated in certain geographical areas, particularly cities, in many countries in Asia and the Pacific.

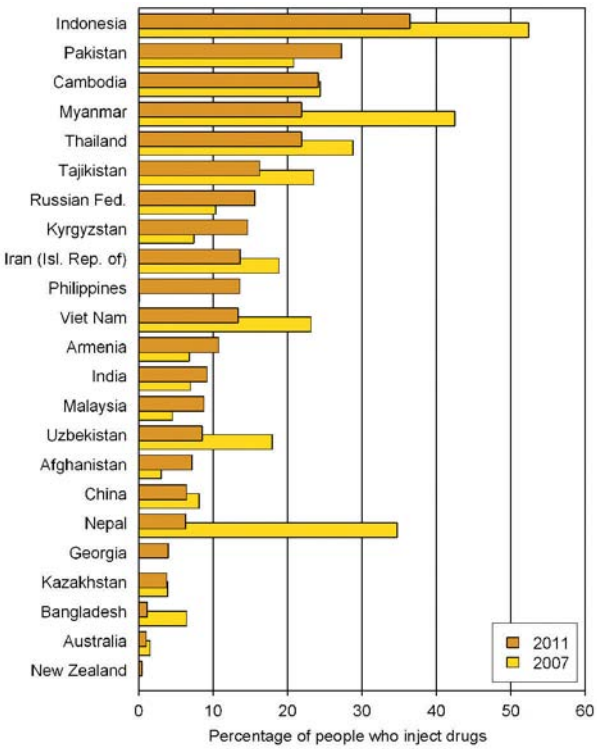
In general, HIV prevalence is highest among people who inject drugs compared with other key populations at higher risk. In 2011, prevalence was above 10 per cent in Armenia, Cambodia, Indonesia, the Islamic Republic of Iran, Kyrgyzstan, Myanmar, Pakistan, the Philippines, the Russian Federation, Tajikistan, Thailand and Viet Nam. It was as high as 36.4 per cent in Indonesia. In Australia, Georgia and Viet Nam, however, there was a higher prevalence among men who have sex with men.

HIV prevalence in the region tends to be higher or increasing among men who have sex with men, with rates that reached upwards of 30 per cent in Thailand and Viet Nam in 2011 for the age group 25 years or older. National estimates of HIV prevalence in men who have sex with men above 10 per cent are seen in Australia, Mongolia, Thailand and Viet Nam.

With the exception of Cambodia in 2009 and Papua New Guinea in 2011, countries in the region have less than 10 per cent national HIV prevalence among sex workers, including Myanmar, which was the one country above 15 per cent in 2009. However, high HIV prevalence is still found in some geographical locations within countries–usually in cities, hot-spot border areas and areas where sex workers or their clients inject drugs. The clients of sex workers represent a very large number of men at a higher risk of HIV infection, but very few prevention programmes are aimed at this key population.

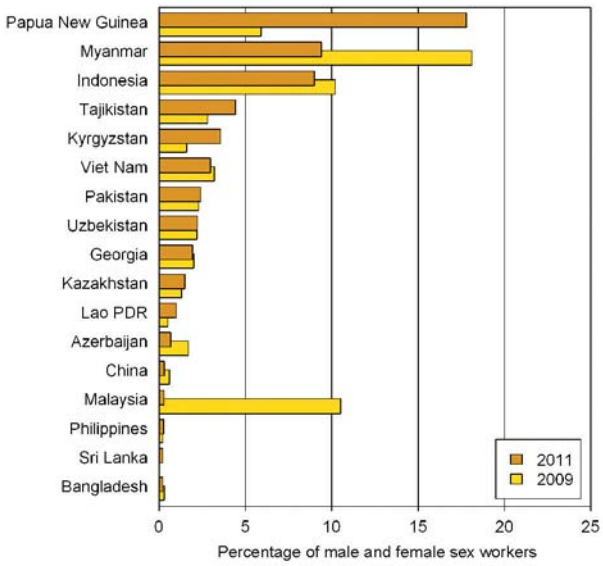
A comparison of the HIV prevalence data among young (under 25 years) key populations versus older cohorts clearly shows that young people are still at risk and are becoming infected in the region.

Figure B.3-2
HIV prevalence among people who inject drugs, Asia and the Pacific, total



Note: For Cambodia and Pakistan, the earliest figures are from 2009 instead of 2007; for India and the Russian Federation, the latest figures are from 2009 instead of 2011.

Figure B.3-3
HIV prevalence in male and female sex workers, Asia and the Pacific, total



Methods of prevention are more available, but coverage and community involvement are still inadequate in many countries.

Despite decades-long efforts to scale up prevention services among key populations at higher risk, protective behaviours have still not been widely adopted by certain populations, with prevention levels varying widely across countries. Thus, for 2011, figures for the indicators of HIV-risk, such as condom use at last sex, vary widely from as low as 8 per cent in Azerbaijan to 81 per cent in Cambodia among people who inject drugs, and from 26 per cent in Bangladesh to 85 per cent in Thailand among men who have sex with men. Among surveyed female sex workers, condom use at last sex ranged from 99 per cent in Georgia in 2009 to less than 1 per cent in Afghanistan in 2011.

Programmatic coverage also varies widely across the region, and can be quite low. For example, the coverage of opioid substitution treatment ranges from less than 1 per cent of the estimated number of people who inject drugs in Pakistan to 9 per cent of people who inject drugs in China.[3] No country in the region has reached the recommended level of 40 per cent coverage of opioid substitution treatment programmes, or 60 per cent coverage of needle and syringe programmes.[4]

In countries where protective behaviours have stagnated among key populations at higher risk, it is often because stigma and discrimination towards the key populations result in their low access to services. Policymakers need to consider new approaches to reach a greater number of people at risk, and how to rapidly scale up the availability of evidence-informed interventions (see box 2 on treatment as prevention). There is enough evidence in the region to invest more in community empowerment. Community responses can increase knowledge and reduce risk behaviours, as well as increase the demand for health services in the context of generalized and concentrated HIV epidemics among groups at higher risk of infection. Dedicated support from community members and caregivers, such as peer mentoring, is effective – more so than with "less personalized" approaches.[5]

The decrease in new infections among children is promising, but the room for progress is vast. In 2011, coverage of effective antiretroviral therapy (ART) regimens for preventing mother-to-child transmission was 18 per cent in South and South-West Asia and in South-East Asia (excluding the Islamic Republic of Iran and Turkey), and 43 per cent in East and North-East Asia and in the Pacific. This compares to the global average of 57 per cent.[6]

Treatment coverage is improving.

Worldwide, 54 per cent of people eligible for ART in low-income, lower-middle-income and upper-middle-income economies were receiving it in 2011.[7] This scale-up in treatment is unprecedented. In Asia and the Pacific, progress has also been significant (From 105,446 people in 2004 to 1.2 million people in 2011), although coverage trails behind the global average; only 46 per cent (1.1 million out of 2.4 million people)[8] in low-income, lower-middle-income and upper-middle-income economies eligible for ART were receiving it (excluding North and Central Asia, the Islamic Republic of Iran and Turkey).

Given recent discoveries in the role of ART in HIV prevention (see box 2) and renewed country

[3] A. Bergenstrom, V. Andreeva and A. Reddy, "Overview of epidemiology of injection drug use and HIV in Asia", poster presentation No. 642 at the International Harm Reduction Conference 2013, Vilnius, 9-12 June 2013.

[4] World Health Organization, United Nations Office on Drugs and Crime and United Nations Joint Programme on HIV/AIDS, *Technical Guide for Countries to Set Targets for Universal Access to HIV Prevention, Treatment and Care for Injecting Drug Users: 2012 Revision* (World Health Organization, 2012).

[5] Rosalla Rodriguez Garcia and others, *Investing in Communities Achieves Results: Findings from an Evaluation of Community Responses to HIV and AIDS* (World Bank, 2013).

[6] Joint United Nations Programme on HIV/AIDS, "Regional fact sheet 2012: Asia and the Pacific."

[7] Joint United Nations Programme on HIV/AIDS, Global Report: UNAIDS Report on the Global AIDS Epidemic 2012 (2012).

[8] Joint United Nations Programme on HIV/AIDS, World AIDS Day Report 2012 (2012).

Box B.3-1
A commitment to intensifying the response to HIV and AIDS[a]

In June 2011, the High-level Meeting on AIDS led to Member States reaffirming their commitment to the HIV and AIDS response by adopting a new political declaration on HIV and AIDS. This landmark declaration provided renewed and specific commitments and goals for 2015. Ten global targets were drawn from this declaration:

1. Reduce sexual transmission by 50 per cent.
2. Reduce HIV transmission among people who inject drugs by 50 per cent.
3. Eliminate new infections among children and substantially reduce the number of mothers dying from AIDS-related causes.
4. Provide antiretroviral therapy to 15 million people.
5. Reduce the number of people living with HIV who die from tuberculosis by 50 per cent.
6. Close the global AIDS resource gap and reach an annual global investment of $22 billion to $24 billion in low-income and middle-income countries.
7. Eliminate gender inequalities and gender-based abuse and violence and increase the capacity of women and girls to protect themselves from HIV.
8. Eliminate stigma and discrimination against people living with and affected by HIV by promoting laws and policies that ensure the full realization of all human rights and fundamental freedoms.
9. Eliminate restrictions for people living with HIV on entry, stay and residence.
10. Eliminate parallel systems for HIV-related services to strengthen the integration of the AIDS response in global health and development efforts.

The declaration also recognized that a greater effort was needed in country reporting through the Global AIDS Response Progress Reporting system. In 2012, 186 countries (96 per cent of United Nations Member States) and 50 ESCAP member States[b] (94 per cent) submitted comprehensive reports on progress in their national AIDS response, one of the highest response rates of any international health and development monitoring mechanism. In 2013, Member States will conduct midterm reviews of progress towards the 10 targets and report to the General Assembly in September.

[a] See the Political Declaration on HIV and AIDS: Intensifying our Efforts to Eliminate HIV and AIDS, adopted by the High-level Meeting of the General Assembly on AIDS, held at United Nations Headquarters from 8 to 10 June 2011. Available from www.unaids.org/en/media/unaids/contentassets/documents/epidemiology/2012/gr2012/20121120_UNAIDS_Global_Report_2012_en.pdf.
[b] Excludes ESCAP associate members.

commitments to increase coverage (see box 1), the region, which is a world leader in ART production, has even more incentive to increase access to life-saving medicines.

Sporadic HIV testing hinders progress.

People reach HIV treatment, care and the full range of prevention options through the gateway of voluntary HIV testing. The overall goal of HIV testing is to identify as many people with HIV as possible as early in their infection as possible, and to link them successfully to care and treatment services, as well as to link those who test negative to prevention services. While access to treatment and care services has expanded in the region, access to and uptake of HIV testing and counselling among key populations at higher risk remain low.

Although men who have sex with men play a substantial role in national HIV epidemics in the region, in almost half of the countries for which data are available, less than 35 per cent were tested for HIV in 2011. HIV testing coverage of people who inject drugs ranged from 3.9 per cent in Azerbaijan to 100 per cent in Malaysia, and that of male and female sex workers from 4.1 per cent in Afghanistan to 100 per cent in Singapore. The normalization of HIV testing in routine health care, the development of community-based testing services to supplement HIV testing and counselling provided by health workers or facilities, and the creation of community demand for HIV testing can help to address this situation, and subsequently allow for better access to care, treatment and prevention services.

Funding for HIV-related services is increasingly domestic and sustainable.

Although funding for HIV-related services is progressively more domestic and sustainable, enhanced domestic and international funding focused on key populations at highest risk is, nevertheless, still critical. Globally, $24 billion will be needed by 2015 annually, of which $3 billion would be required in Asia and the Pacific.[9]

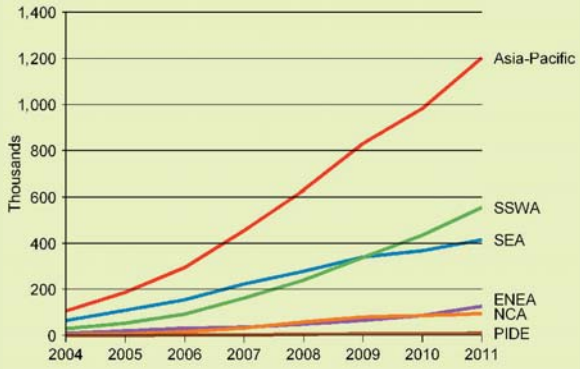
In 2011, for the first time, domestic public sources of funding in low-income, lower-middle-income and upper-middle-income economies in Asia and the Pacific represented about two thirds (66 per cent) of total AIDS spending, which is higher than the global average of 51 per cent.[10] This is an encouraging trend in terms of funding sustainability.

Box B.3-2
Getting to zero through the strategic use of antiretroviral therapy

The global expansion of access to HIV treatment ranks among recent great achievements in public health. At the end of 2011, an estimated 8 million people in low-income, lower-middle-income and upper-middle-income economies were receiving ART, a twentyfold increase since 2003. In Asia and the Pacific, 46 per cent of people in need in low-income, lower-middle-income and upper-middle-income economies (excluding North and Central Asia, the Islamic Republic of Iran and Turkey) had access to life-saving medicines in 2011.[a]

For those who have access, ART has transformed HIV from a death sentence to a chronic manageable disease.

Population receiving antiretroviral therapy, Asian and Pacific subregions, total



The safety and efficacy of ART have improved considerably, and a compelling body of research shows that it can significantly prolong lives and prevent new HIV infections,[b] particularly if treatment is started early when the immune system is still relatively strong.

The strategic use of ART is crucial to combat the HIV epidemic. This will require that people with HIV be diagnosed and start ART in greater numbers and at an earlier stage. People undergoing treatment need to remain in ART programmes in order to realize the maximum, long-term benefits.[c]

Timely knowledge of HIV status is essential for expanding access and linking people to HIV prevention and treatment services. Countries in the region should therefore broaden the strategic options for HIV testing (self-testing, home testing, and community-based counselling and testing) and focus testing on key populations (active community recruitment), with the aim of initiating early treatment in order to harvest the preventative benefits of treatment. This needs to be done in close partnership with civil society organizations in order to ensure active recruitment and testing in communities as well as adherence to counselling and follow-up. At the same time, more resolute changes are needed in order to dismantle social and structural barriers to treatment and care for key populations, such as stigma, discrimination and punitive legal frameworks.

[a] Joint United Nations Programme on HIV/AIDS, World AIDS Day Report 2012 (2012).
[b] Joint United Nations Programme on HIV/AIDS, Together We Will End AIDS (2012).
[c] World Health Organization, The Strategic Use of Antiretrovirals to Help End the HIV Epidemic (2012).

[9] Joint United Nations Programme on HIV/AIDS, Meeting the Investment Challenge: Tipping the Dependency Balance (2012).
[10] Analysis done by HIV and AIDS Data Hub for Asia and the Pacific, based on Joint United Nations Programme on HIV/AIDS, Global Report: UNAIDS Report on the Global AIDS Epidemic 2012 (2012). Available from www.aidsdatahub.org/en/regional-profiles/economics-of-aids/item/5941-hiv-expenditure-hiv-and-aids-data-hub-for-asia-pacific-2011.

Further reading

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Technical notes

HIV defined

HIV is a virus that weakens the immune system, ultimately leading to AIDS. HIV destroys the body's ability to fight off infection and disease, which can ultimately lead to death.

AIDS deaths (number)

The estimated number of adults and children that have died due to HIV/AIDS in a specific year. **Aggregate calculations:** Sum of individual country values. Missing data are not imputed.

Population living with HIV: total, adults and female adults (thousands)

Estimated number of people (adults and children) living with HIV. Estimates include all those infected with HIV, whether or not they have developed symptoms of AIDS. Adults are aged 15 years or older and children are 0-14 years. **Aggregate calculations:** Sum of individual country values. Missing data are not imputed.

HIV prevalence rate, individuals aged 15-49 years (percentage)

Individuals aged 15-49 years living with HIV. HIV prevalence includes all those infected with HIV, whether or not symptoms of AIDS have developed. **Aggregate calculations:** Weighted averages using population aged 15-49 years (WPP2012) as weight. Missing data are not imputed.

Comprehensive correct knowledge of HIV/AIDS: females and males aged 15-24 years (percentage)

Women and men aged 15-24 years with comprehensive correct knowledge of HIV/AIDS (answered correctly all five HIV/AIDS questions). "Comprehensive correct knowledge" is defined as correctly identifying the two major ways of preventing the sexual transmission of HIV (using condoms and limiting sex to one faithful, uninfected partner), rejecting the two most common local misconceptions about HIV transmission and knowing that a healthy-looking person can transmit HIV. **Aggregate calculations:** Weighted averages using female/male population aged 15-24 years (WPP2012) as weight. Missing data are not imputed.

Condom use among key populations at higher risk: men who have sex with men, people who inject drugs, sex workers; total, aged less than 25 years, aged 25 years or older; females, males (percentage)

Men who have sex with men: Percentage of men who reported the use of a condom the last time they had anal sex with a male partner in the last six months. A male partner includes both regular and non-regular partners, and both paid and unpaid sex. **People who inject drugs:** Percentage of people who reported having injected drugs and reported the use of a condom the last time they had sexual intercourse in the last month. **Sex workers:** Percentage of sex workers who reported

having had commercial sex in the last 12 months and reported the use of a condom with their most recent client.

Condom use at last sex among people with multiple sexual partners: females and males aged 15-19 years; females and males aged 20-24 years (percentage)

Multiple sexual partners: Percentage of women and men aged 15-19 years and 20-24 years who reported having had more than one partner in the past 12 months who used a condom during their last sexual intercourse.

HIV prevalence among populations at higher risk: total, aged 15-49 years, aged less than 25 years, aged 25 years or older; females and males (percentage)

Men who have sex with men: Percentage of men living with HIV who have sex with men. This indicator is calculated using data from HIV tests conducted among respondents in the primary sentinel site or sites. **People who inject drugs:** Percentage of people who inject drugs who are living with HIV. This indicator is calculated using data from HIV tests conducted among respondents in the primary sentinel site or sites or in the context of a surveillance survey. **Sex workers:** Percentage of sex workers aged 25 years or older who are living with HIV. This indicator is calculated using data from HIV tests conducted among respondents in the primary sentinel site or sites.

HIV testing among populations at higher risk: total, aged less than 25 years, aged 25 years or older; females and males (percentage)

Men who have sex with men: Percentage of men who have sex with men who have received an HIV test in the past 12 months and know their results. **People who inject drugs:** Percentage of people who inject drugs who received an HIV test in the past 12 months and know their results. **Sex workers:** Percentage of sex workers who have received an HIV test in the past 12 months and know their results.

HIV treatment: ART (percentage of eligible adults and children)

Percentage of eligible adults and children currently receiving ART.

Population receiving ART: total population (number)

Population (adults and children) currently receiving ART according to nationally approved treatment protocols (or Joint United Nations Programme on HIV/AIDS standards). **Aggregate calculations:** Sum of individual country values. Missing data are not imputed.

Estimated new HIV infections (all ages)

The number of new HIV infections in a population during a certain time period. **Aggregate calculations:** Sum of individual country values. Missing data are not imputed.

Source

Source of HIV data: Data tables provided by the Joint United Nations Programme on HIV/AIDS. Data for India on AIDS deaths and population living with HIV are obtained from the National Institute of Medical Statistics and National AIDS Control Organization, Technical Report: India HIV Estimates 2012. **Data obtained:** April and May 2013.

B.3.1 HIV/AIDS prevalence

	Population living with HIV					HIV prevalence rate			HIV prevalence rate		
	Total			Adults	Female adults	15-49 years old			Sex workers	Injecting drug users	Men who have sex with men
	Thousands					% of 15-49 years old			Percentage		
	2000	2005	2011	2011	2011	2000	2005	2011	2011	2011	2011
East and North-East Asia			**804**	**795**	**238**			**0.1**			
China			780	771	231			0.1	0.3	6.4	6.3
DPR Korea											
Hong Kong, China											
Japan	6	7	8	8	2	0.1	0.1	0.1		0.0	4.2
Macao, China											
Mongolia	0	0	1	1	1	0.1	0.1	0.1	0.0		10.7
Republic of Korea	6	12	15	15	4	0.1	0.1	0.1			3.0
South-East Asia	**1 099**	**1 305**	**1 517**	**1 468**	**484**	**0.4**	**0.4**	**0.4**			
Brunei Darussalam											
Cambodia	87	71	64	56	31	1.2	0.8	0.6		24.1	2.1
Indonesia	6	140	380	370	110	0.1	0.1	0.3	9.0	36.4	8.5
Lao PDR	3	6	10	10	5	0.1	0.2	0.3	1.0		
Malaysia	55	70	81	80	8	0.4	0.4	0.4	0.3	8.7	1.4
Myanmar	210	260	220	210	77	0.7	0.8	0.6	9.4	21.9	7.8
Philippines	2	5	19	19	4	0.1	0.1	0.1	0.3	13.6	1.7
Singapore	3	3	3	3	1	0.1	0.1	0.1			2.8
Thailand	650	560	490	480	200	1.8	1.4	1.2		21.9	20.0
Timor-Leste									1.5		1.3
Viet Nam	84	190	250	240	48	0.2	0.4	0.5	3.0	13.4	16.7
South and South-West Asia			**2 388**								
Afghanistan	2	3	6	6	1	0.1	0.1	0.1	0.0	7.1	
Bangladesh	2	4	8	8	1	0.1	0.1	0.1	0.2	1.1	0.0
Bhutan	0	1	1	1	1	0.1	0.1	0.3			
India			2 089								
Iran (Islamic Rep. of)	51	75	96	96	13	0.1	0.1	0.2		13.6	
Maldives	0	0	0	0	0	0.1	0.1	0.1			
Nepal	34	63	49	47	10	0.3	0.5	0.3		6.3	3.8
Pakistan	9	32	130	130	28	0.1	0.1	0.1	2.4	27.2	
Sri Lanka	2	3	4	4	1	0.1	0.1	0.1	0.2		0.9
Turkey	2	3	6	5	2	0.1	0.1	0.1			
North and Central Asia			**1 047**								
Armenia	3	4	4	4	1	0.2	0.2	0.2	1.2	10.7	2.3
Azerbaijan	3	5	7	7	1	0.1	0.1	0.1	0.7	9.5	2.0
Georgia	1	2	5	5	1	0.1	0.1	0.2	2.0	3.9	7.0
Kazakhstan	8	12	19	19	8	0.1	0.1	0.2	1.5	3.8	1.0
Kyrgyzstan	1	2	12	12	4	0.1	0.1	0.4	3.5	14.6	1.1
Russian Federation			990								
Tajikistan	5	7	11	10	4	0.2	0.2	0.3	4.4	16.3	1.7
Turkmenistan											
Uzbekistan									2.2	8.5	0.7
Pacific	**37**	**44**	**53**	**49**	**20**	**0.2**	**0.2**	**0.3**			
American Samoa											
Australia	12	16	22	22	7	0.1	0.1	0.2	0.0	1.0	11.2
Cook Islands											
Fiji	0	0	1	1	0	0.1	0.1	0.1			0.5
French Polynesia											
Guam											
Kiribati											
Marshall Islands											
Micronesia (F.S.)											
Nauru											
New Caledonia											
New Zealand	2	2	3	3	1	0.1	0.1	0.1		0.4	
Niue											
Northern Mariana Islands											
Palau											
Papua New Guinea	23	26	28	24	12	0.8	0.8	0.7	17.8		
Samoa											
Solomon Islands											
Tonga											
Tuvalu											
Vanuatu											
Asia and the Pacific			**5 810**								
Developed countries	20	25	33	33	10	0.1	0.1	0.1			
Developing countries			5 777								
LLDC	58	103	119	116	35	0.2	0.2	0.2			
LDC	338	407	358	337	126	0.3	0.3	0.2			
ASEAN	1 099	1 305	1 517	1 468	484	0.4	0.4	0.4			
ECO	80	140	286	285	61	0.1	0.1	0.1			
SAARC			2 287								
Central Asia											
Pacific island dev. econ.	23	26	29	25	12	0.7	0.7	0.6			
Low income econ.	340	410	370	348	128	0.3	0.3	0.2			
Lower middle income econ.			2 921								
Upper middle income econ.			2 468	1 458	463			0.2			
High income econ.	28	40	51	51	15	0.1	0.1	0.1			
Africa	**19 938**	**21 449**	**23 178**	**20 095**	**11 607**	**5.0**	**4.6**	**4.2**			
Europe	**860**	**1 064**	**1 155**	**1 152**	**354**	**0.3**	**0.3**	**0.3**			
Latin America and Carib.	**1 418**	**1 501**	**1 616**	**1 548**	**537**	**0.4**	**0.4**	**0.4**			
North America	**1 027**	**1 157**	**1 371**	**1 371**	**313**	**0.6**	**0.6**	**0.6**			
World			**33 162**	**26 862**	**13 641**			**0.9**			

B.3.2 HIV/AIDS testing and condom use

	HIV testing						Condom use					
	Sex workers		Injecting drug users		Men who have sex with men		Sex workers		Injecting drug users		Men who have sex with men	
	Percentage						Percentage					
	2009	2011	2009	2011	2009	2011	2009	2011	2009	2011	2009	2011
East and North-East Asia												
China	37.0	38.2	37.0	43.7	45.0	50.4	85.0	87.5	36.0	40.4	73.0	74.1
DPR Korea												
Hong Kong, China												
Japan		76.1			32.0	25.1	65.0	39.8		35.7	65.0	49.1
Macao, China												
Mongolia	52.0	52.4			78.0	66.3	90.0	89.8			78.0	70.2
Republic of Korea						27.6		79.6				65.5
South-East Asia												
Brunei Darussalam												
Cambodia	68.0		35.0	35.3	58.0	34.0	99.0			81.3	86.0	66.4
Indonesia	33.0	79.4	44.0	90.6	34.0	92.0	68.0	58.0	36.0	51.6	57.0	59.8
Lao PDR	14.0	22.3			14.0		94.0	92.5				
Malaysia	20.0	90.2	33.0	100.0		29.7	61.0	61.0	28.0	27.8	21.0	38.0
Myanmar	71.0	71.1	27.0	27.3	48.0	47.6	96.0	95.9	78.0	77.6	82.0	81.6
Philippines	19.0	16.5	1.0	4.8	7.0	5.2	65.0	64.9	22.0	15.0	32.0	36.3
Singapore	100.0	100.0			43.0	39.5	99.0	98.8			17.0	79.5
Thailand	36.0	50.5	62.0	40.8	21.0	29.2	92.0	94.6	42.0	46.1		84.5
Timor-Leste		66.3			26.0	32.5		36.1			38.0	66.0
Viet Nam	35.0	43.8	18.0	29.1	19.0	30.2	78.0	86.9	52.0	51.9	66.0	75.6
South and South-West Asia												
Afghanistan	4.0	4.1	22.0	22.5			58.0	0.8	35.0	35.0		
Bangladesh	4.0	9.7	4.0	4.7	3.0	9.3	63.0		43.0	44.8	31.0	26.1
Bhutan				28.2						53.7		
India	32.0		21.0		17.0		83.0		16.0		58.0	
Iran (Islamic Rep. of)	20.0		23.0	24.8	11.0		55.0		33.0	15.3	38.0	
Maldives	14.0		17.0		10.0							
Nepal			22.0	21.4	42.0	42.0			51.0	46.5	75.0	75.3
Pakistan	14.0	8.1	12.0	9.1			38.0	35.4	31.0	22.6		
Sri Lanka	43.0	44.0			14.0	13.6	89.0	89.3			61.0	61.4
Turkey												
North and Central Asia												
Armenia		15.9		16.1		47.9		92.9		43.7		65.9
Azerbaijan	6.0	12.0	5.0	3.9	13.0	24.5	75.0	53.0	15.0	7.7	57.0	28.5
Georgia	28.0		6.0	5.7	24.0	25.9	99.0		78.0	22.4	62.0	67.3
Kazakhstan	81.0	77.1	56.0	64.7	60.0	61.4	96.0	95.7	46.0	47.2	76.0	76.4
Kyrgyzstan	42.0	34.9	40.0	54.0		42.1	94.0	88.1	53.0	49.4		70.5
Russian Federation	39.0		26.0		61.0		71.0		45.0		56.0	
Tajikistan	42.0	47.3	36.0	46.0		40.3	84.0	75.0	28.0	39.6		67.8
Turkmenistan												
Uzbekistan	35.0	39.3	34.0	28.7	44.0	30.7	81.0	83.6	26.0	42.8	87.0	56.9
Pacific												
American Samoa												
Australia	82.0	59.6		47.6	61.0	71.5			27.0		47.0	38.9
Cook Islands												
Fiji												
French Polynesia												
Guam												
Kiribati												
Marshall Islands						100.0						
Micronesia (F.S.)										58.3		
Nauru												
New Caledonia												
New Zealand				80.0						34.0		
Niue												
Northern Mariana Islands												
Palau												
Papua New Guinea	56.0	46.4			67.0	55.8	50.0	79.7			51.0	63.1
Samoa												
Solomon Islands												
Tonga												
Tuvalu												
Vanuatu	12.0						67.0	39.1			63.0	71.4
Asia and the Pacific												
Developed countries												
Developing countries												
LLDC												
LDC												
ASEAN												
ECO												
SAARC												
Central Asia												
Pacific island dev. econ.												
Low income econ.												
Lower middle income econ.												
Upper middle income econ.												
High income econ.												
Africa												
Europe												
Latin America and Carib.												
North America												
World												

B.3.3 HIV/AIDS treatment and AIDS deaths

	HIV treatment: ART	Population receiving ART: total population		AIDS deaths				
	% of eligible adults and children	Number		Number				
	2011	2009	2011	1990	1995	2000	2005	2011
East and North-East Asia		**65 491**	**126 486**					
China		65 481	126 448					
DPR Korea								
Hong Kong, China								
Japan				500	1 000	200	200	200
Macao, China								
Mongolia	27	10	38	100	100	100	100	100
Republic of Korea				200	500	100	200	500
South-East Asia		**340 096**	**415 249**	**3 800**	**32 500**	**79 600**	**85 200**	**73 500**
Brunei Darussalam								
Cambodia	95	37 315	46 473	500	3 200	6 900	6 200	1 400
Indonesia	24	15 442	24 410	100	100	100	2 200	15 000
Lao PDR	53	1 345	1 988	100	100	100	500	500
Malaysia	37	9 962	14 002	200	1 800	4 500	5 800	5 900
Myanmar	32	21 138	40 128	500	3 000	8 600	16 000	16 000
Philippines	51	750	1 992	100	100	100	500	500
Singapore				100	100	100	200	200
Thailand	71	216 118	225 272	2 100	24 000	58 000	45 000	23 000
Timor-Leste		31	60					
Viet Nam	58	37 995	60 924	100	100	1 200	8 800	11 000
South and South-West Asia		**338 238**	**555 896**					**167 229**
Afghanistan	6	19	111	100	200	200	500	500
Bangladesh	31	353	681	100	200	200	500	500
Bhutan	24		64	100	100	100	100	100
India		330 300	543 000					147 729
Iran (Islamic Rep. of)	7	1 486	2 752	200	500	2 500	5 800	8 300
Maldives	22	3	3	100	100	100	100	100
Nepal	24	3 550	6 483	100	200	1 000	3 700	4 600
Pakistan	10	1 320	2 491	100	100	500	1 200	4 800
Sri Lanka	21	207	311	100	100	100	200	500
Turkey	50	1 000		100	100	100	200	100
North and Central Asia		**80 313**	**94 816**					
Armenia	22	179	330	100	100	200	500	500
Azerbaijan	28	238	707	100	100	200	500	500
Georgia	76	655	1 122	100	100	100	100	200
Kazakhstan	27	1 035	1 830	100	100	500	1 000	1 200
Kyrgyzstan	23	231	510	100	100	100	100	500
Russian Federation		75 900	85 716					
Tajikistan	22	322	769	100	100	500	500	1 000
Turkmenistan								
Uzbekistan		1 753	3 832					
Pacific				**800**	**2 200**	**1 800**	**2 500**	**1 500**
American Samoa								
Australia				500	1 000	200	200	200
Cook Islands			0					
Fiji	87	52	74	100	100	100	100	100
French Polynesia								
Guam								
Kiribati			6					
Marshall Islands		4	7					
Micronesia (F.S.)		5						
Nauru			0					
New Caledonia								
New Zealand				100	100	100	100	100
Niue			0					
Northern Mariana Islands								
Palau		3	2					
Papua New Guinea	68	6 751	9 435	100	1 000	1 400	2 100	1 100
Samoa			12					
Solomon Islands		8	8					
Tonga			0					
Tuvalu		1	0					
Vanuatu		2	3					
Asia and the Pacific		**830 964**	**1 201 994**					
Developed countries				1 100	2 100	500	500	500
Developing countries		830 964	1 201 994					
LLDC		8 682	16 662	1 000	1 200	3 000	7 500	9 500
LDC		63 762	96 017	1 500	7 000	17 100	27 500	23 600
ASEAN		340 065	415 189	3 800	32 500	79 600	85 200	73 500
ECO		7 404	13 002	900	1 300	4 600	9 800	16 900
SAARC		335 752	553 144					158 829
Central Asia		4 413	9 100					
Pacific island dev. econ.		6 826	9 547	200	1 100	1 500	2 200	1 200
Low income econ.		62 928	95 155	1 500	7 000	17 500	27 500	24 500
Lower middle income econ.		396 809	650 107					182 129
Upper middle income econ.		371 227	456 732					
High income econ.				1 400	2 700	700	900	1 200
Africa		**3 915 617**	**6 193 634**	**285 300**	**697 500**	**1 319 900**	**1 734 700**	**1 177 400**
Europe				**18 600**	**31 200**	**18 500**	**32 600**	**33 900**
Latin America and Carib.		**460 323**	**577 222**	**23 800**	**55 600**	**77 500**	**78 100**	**60 500**
North America				**33 300**	**61 500**	**20 500**	**20 500**	**20 500**
World		**5 235 477**	**8 015 540**					**1 541 129**

B.4. Malaria and tuberculosis

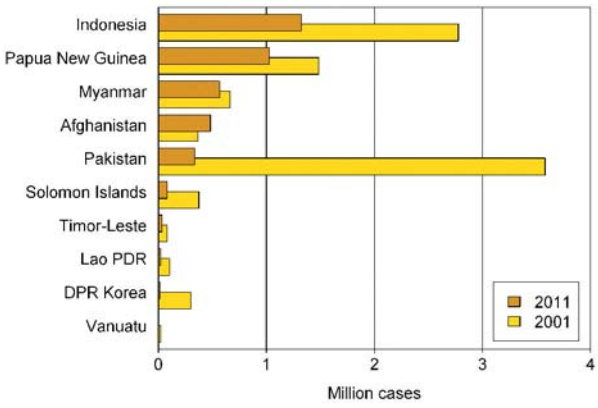
Malaria and tuberculosis (TB) are two infectious and potentially lethal diseases that have greatly affected the Asian and Pacific region. Progress has been made in fighting these pandemics in the region, and the number of malaria cases per 100,000 population has decreased significantly in recent years. Nevertheless, there are still high numbers of malaria cases in certain countries, and progress in bringing these down has been slow. There have been achievements in reducing TB cases in the region, especially in North and Central Asia, while the situation in the Pacific is not so promising and deserves attention.

The Asian and Pacific region has had significant success in reducing the incidence of malaria, placing several countries on track to meet, or even surpass, the malaria-related target of Millennium Development Goal 6.

In 2011, the region recorded the lowest malaria case incidence (136 per 100,000 population) in over three decades. The incidence was below 200 for the first time since 2000 and was less than half the figure for 2010, indicating a reduction of more than 50 per cent in the space of one year. Between 2001 and 2011, East and North-East Asia experienced a dramatic fall of over 90 per cent to very low levels of less than 2 per 100,000 population. In North and Central Asia, the decline was even greater and to even lower levels. Between 2001 and 2011, South and South-West Asia experienced a large drop in incidence, from 429 to 127, while in South-East Asia the number went from 765 to 349. Within the same period, the incidence in the Pacific (excluding Australia and New Zealand), albeit at much higher rates than other subregions, also fell significantly, dropping from 30,605 to 14,266.

Several countries across the region have shown remarkable progress in combating malaria over the past decade and they are therefore on track to accomplish a diminution in the incidence of at least 75 per cent from 2000 to 2015,[1] significantly greater than the relevant target under Millennium Development Goal 6. For example, Cambodia, the Lao People's Democratic Republic and Sri Lanka[2] had malaria incidence surpassing 1,000 per 100,000 in 2000, but, by 2011, the incidence of malaria in these countries had fallen by over one half to less than 500 per 100,000. These three countries also experienced substantial progress in decreasing the numbers of malaria cases. The 57,423 cases reported in Cambodia in 2011 constituted a 72 per cent decline from the figure for 2000. Over the same period, the cases reported in the Lao People's Democratic Republic (17,904) and Sri Lanka (175) for 2011 showed declines of over 90 per cent from 2000.

Figure B.4-1
Malaria cases for 2001 and 2011, for the 10 countries that had the highest incidence in 2001



Some countries in the Asian and Pacific region, particularly those with tropical or subtropical climates, continue to face challenges in combating malaria.

As rainfall and warm temperatures present an ideal habitat for Anopheles mosquitoes (the mosquitoes that host the malaria parasite), tropical and subtropical countries such as India (24 per cent), Indonesia (24 per cent) and Papua New Guinea (19 per cent) predictably reported

[1] World Health Organization, *World Malaria Report 2012* (Geneva, 2012). Available from www.who.int/malaria/publications/world_malaria_report_2012/en/.

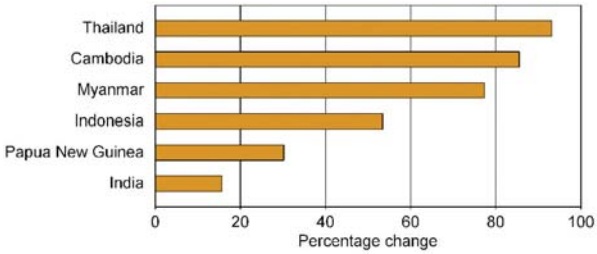
[2] Countries reported in the World Health Organization *World Malaria Report 2012,* and where data and reporting are considered consistent.

the highest proportions of malaria cases in the region in 2011. The situation in Indonesia warrants attention since, between 2000 and 2011, the country experienced only an 8 per cent decrease in case numbers, while the declines in India and Papua New Guinea were each about 36 per cent. The decline in Papua New Guinea has been significant; yet, in 2011, it still had a considerably higher incidence of malaria (14,617 cases per 100,000 population) than all the other countries in the Asian and Pacific region except Solomon Islands. In comparison, Indonesia and India recorded incidence figures of 542 and 107, respectively. In addition to Papua New Guinea and Solomon Islands, countries with a high incidence of malaria are Timor-Leste (3,290) and Vanuatu (2,384), both also surpassing the global average (1,530). However, in 2011, the cases recorded in Vanuatu represented a reduction of about 67 per cent from the 2010 figure.

The number of annual malaria deaths in the Asian and Pacific region has fallen by over two thirds since 2000.

The region has seen a very sizable decline in the number of malaria deaths, but, in some countries, there is still a lack of data, and this renders making comprehensive conclusions difficult. Improvements in detection, treatment and surveillance have proven to be instrumental in reducing malaria deaths. The annual number of malaria deaths in the region fell progressively between 2000 and 2011, from 7,848 to 2,481, which is the lowest number recorded since 1990. Within the same period of time, the three countries with the largest number of cases showed some variations in patterns. India witnessed the most deaths in 2006 (1,708), but the number fell significantly to 753 in 2011. Indonesia had a peak of 900 deaths in 2009 and the number fell to 388 in 2011. Papua New Guinea reported its highest number of deaths in 2005 (725), though the number declined steadily to 431 within six years. Myanmar, another high-endemic country, also recorded a significant decline in deaths; the peak of 2,814 deaths occurred in 2001 but the number then fell steadily to 581 in 2011. However, this trend may not be entirely representative given changes in reporting practices.[3]

Figure B.4-2
Percentage change in malaria deaths between 2000 and 2011, for the six countries that had the highest figures in 2000



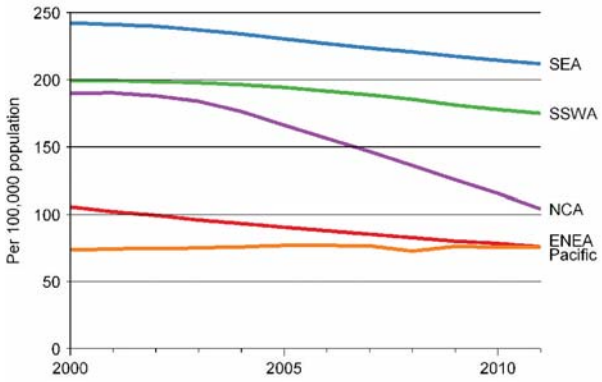
The Asian and Pacific region as a whole and most countries within it have met the TB-related target of Millennium Development Goal 6, but the region still accounts for the largest population of persons living with TB in the world.

Between 2000 and 2011, the number of new TB cases per 100,000 population in the region declined steadily by 17 per cent, falling from 167 to 139. Nonetheless, with the largest population of all regions (60 per cent of the global population), Asia and the Pacific has been recording a relatively larger population of those living with TB for the past decade. In 2011, the region hosted 8.5 million people living with TB (72 per cent of the global figure).Nonetheless, the figure for Asia and the Pacific (over 12.195 million) accounted for 78 per cent of the total global figure in 2000, showing a more rapid decline than the global aggregate. In 2011, there were three times more people living with TB in the Asian and Pacific region than in Africa. Yet, while there was a reduction of 30 per cent from 2000 to 2011 of people living with TB in this region, in Africa there was a 4 per cent increase over the same period.

[3] World Health Organization, *World Malaria Report 2012.*

North and Central Asia experienced the greatest reduction in the incidence of TB between 2000 and 2011 (45 per cent), followed by East and North-East Asia (28 per cent), South-East Asia (13 per cent) and South and South-West Asia (12 per cent). The Pacific, on the other hand, was the only subregion that, at a rate of 3 per cent, experienced an increase. In 2011, the incidence levels (per 100,000 population) of all North and Central Asian countries were below the region's average rate (139), except Tajikistan (193). The 2011 incidence in Kazakhstan (129), Azerbaijan (113), Uzbekistan (101) and Turkmenistan (74) had dropped by about 65 per cent, or more, as in the case of Azerbaijan, at 83 per cent, since 2000.

Figure B.4-3
Tuberculosis incidence, Asian and Pacific subregions, 2000 to 2011

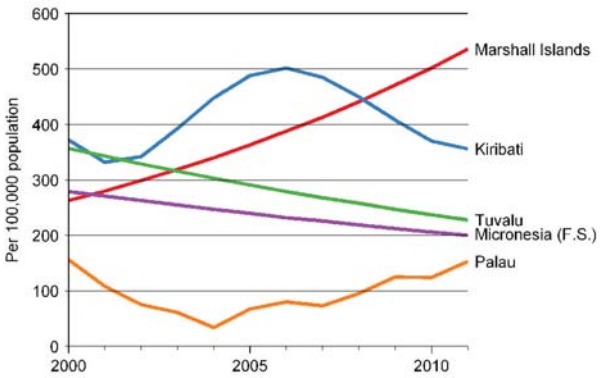


Another key approach to tracking a country's progress in addressing TB is by using the case detection rate under the internationally recommended TB control strategy Directly Observed Treatment Shortcourse (DOTS). In 2000, the DOTS case detection rate in the Asian and Pacific region was 46 per cent, while the global rate was 51 per cent. The most recent data for DOTS case detection rates are from 2011, and in that year the region's rate was equal to the global rate, at 71 per cent, showing greater improvement in the region than across the globe. Among the Asian and the Pacific subregions, South and South-West Asia recorded the lowest rate in 2011 (59 per cent), followed by the Pacific (65 per cent), South-East Asia (71 per cent), North and Central Asia (77 per cent), and East and North-East Asia (91 per cent).

Despite progress in the region more broadly, the number of people living with TB in the Pacific is rising.

The Pacific has always recorded the smallest number of people living with TB in the region (0.5 per cent of the region's total figure in 2011); yet, the number of new TB cases between 2000 and 2011 increased by 22 per cent. A notable resurgence of TB cases was seen in the Marshall Islands, where the incidence increased consistently to reach 536 cases per 100,000 in 2011, which is more than double the rate of 2000. In Kiribati, there was an increase from 372 in 2000 to a peak of 502 in 2006 and then a fall to 356 in 2011. Tuvalu and the Federated States of Micronesia, on the other hand, showed declining patterns within the same period, as the two countries experienced steady decreases from rates of 357 to 228 and of 279 to 200, respectively. Almost no change occurred in Papua New Guinea from 2000 to 2011, with an annual average of 351 per 100,000 population, a high burden that is accompanied by related challenges, as discussed in the box below.

Figure B.4-4
Tuberculosis incidence, Pacific subregion, 2000-2011



Conducting national prevalence surveys has helped countries to combat TB.

At the country level, Cambodia exhibits what can be achieved in a low-income, high-burden country. Cambodia and China are the only countries in the region that twice conducted a national prevalence survey between 2000

and 2011.[4] Cambodia conducted the surveys in 2002 and 2011 and within that period, the country's TB prevalence was nearly halved, from 1,511 to 817 cases per 100,000 population. China demonstrated similar success by reporting a 36 per cent reduction in TB prevalence between 2000 and 2010, the years in which it carried out the surveys. These successes may prove that surveys contribute significantly to enhancing the evaluation of the impact of TB control and help identify ways to improve the way in which TB is treated.

Box B.4-1
A challenge for the tuberculosis response in Papua New Guinea: drug resistant cases

With 14,749 new TB cases diagnosed in 2011,[a] Papua New Guinea has become the country with the highest TB burden in the Pacific, the only subregion where TB incidence has increased in recent years. TB is a treatable disease; yet, in 2011, the country's TB-related deaths were estimated at 3,700, almost 90 times greater than those in Australia (42), a Pacific country with just under one tenth of the number of new cases in 2011 (1,202) of Papua New Guinea. This shows that treatment for many TB cases in Papua New Guinea is inadequate or unattainable. In addition, some cases have become drug resistant, making treatment even more complex.

People who are diagnosed with TB should undergo treatment that involves taking anti-TB drugs (antibiotics) for at least six to nine months. However, such a lengthy treatment period often makes individuals prone to stopping the medication once they begin to feel better. Such an interruption unfortunately enables the bacteria to mutate, develop resistance and bring about further infection. A shortage of drugs is another factor that causes individuals to stop their medication. Financial constraints and the poor management of stock replenishment are frequent causes of shortages. Improper treatment regimens can also cause drug resistance. A clinical setting with poor quality of resources and the behavioural patterns of those infected may therefore increase the likelihood of drug-resistant TB.

Multi-drug-resistant TB (MDR-TB), in which the disease is resistant to basic anti-TB drugs (isoniazid and rifampicin), is a growing problem in Papua New Guinea. In 2011, the country estimated 410 MDR-TB cases, or 4.9 per cent of total TB cases.[b] Treatment for MDR-TB entails a different combination of stronger antibiotics for an even longer period of time; the current regimens recommended by the World Health Organization (WHO) last 20 months.[c] In 2012, a more severe form of drug resistant TB, called extensively drug-resistant TB (XDR-TB), was observed through six cases arising in Papua New Guinea's Western Province.[d] XDR-TB shows resistance to two of the second-line drugs that are used to treat MDR-TB (namely the injectable agent and any one fluoroquinolone). This level of drug-resistant TB also comes about as a result of inadequate or interrupted treatment for MDR-TB; moreover, the treatments for MDR-TB and XDR-TB are even less accessible since the options for treatment are limited and expensive. In addition, studies on effective treatment for XDR-TB are yet to be carried out in large cohorts, and, thus, WHO cannot recommend a routine use of the treatment's alternatives.

In neighbouring Australia, which recently set up the Centre of Research Excellence in Tuberculosis Control to stop the spread of TB and to reduce its impact in the Asian and Pacific region, efforts have been directed at helping Papua New Guinea combat TB. The two Governments have been collaborating to establish better surveillance, detection, diagnosis and treatment for TB in Western Province. Under the partnership, the WHO-based six-point Stop TB Strategy has been adopted to reduce the burden of TB by 2015 by ensuring that all TB patients, including those with drug-resistant TB, benefit from universal access to high-quality diagnosis and patient-centred treatment. Attention to having patients take the proper and full course of anti-TB drugs at the right time over the full period of medication has also become a key focus of the Stop TB Strategy in the fight to prevent the development of drug resistance.

[a] Tuberculosis profile of Papua New Guinea by the World Health Organization. Available from https://extranet.who.int/sree/Reports?op=Replet&name=/WHO_HQ_Reports/G2/PROD/EXT/TBCountryProfile&ISO2=pg&outtype=pdf.
[b] Ibid.
[c] World Health Organization, *Global Tuberculosis Report 2012.*
[d] Emma McBryde, Evaluation of Risks of Tuberculosis in Western Province Papua New Guinea (Canberra, Australian Agency for International Development, 2012). Available from www.ausaid.gov.au/countries/pacific/png/Documents/png-tb-evaluation-of-risk.pdf.

[4] World Health Organization, *Global Tuberculosis Report 2012* (Geneva, 2012), p. 26. Available from http://apps.who.int/iris/bitstream/10665/75938/1/9789241564502_eng.pdf.

Further reading

Global Fund to Fight AIDS, Tuberculosis and Malaria. *Making a Difference: Asia Regional Results Report 2011.* Geneva, 2011. Available from www.theglobalfund.org/en/library/publications/regionaloverviews/.

_____. *Making a Difference: Eastern Europe and Central Asia Regional Results Report 2011.* Geneva, 2011. Available from www.theglobalfund.org/en/library/publications/regionaloverviews/.

World Health Organization. *Global Tuberculosis Report 2012.* Geneva, 2012. Available from www.who.int/tb/publications/global_report/en/.

_____. *World Malaria Report.* Geneva, 2012. Available from www.who.int/malaria/publications/world_malaria_report_2012/en/.

Technical notes

Malaria cases (number, per 100,000 population)

The number of new cases of malaria reported (presumed and confirmed) in a given time period expressed per 100,000 population. **Aggregate calculations:** Sum of individual country values (number); weighted averages using population (WPP2012) as weight (per 100,000 population). Missing data are not imputed.

Malaria deaths (number)

Deaths caused by malaria in a given time period. **Aggregate calculations:** Sum of individual country values. Missing data are not imputed.

TB prevalence and incidence rates (per 100,000 population)

Prevalence: TB prevalence refers to the number of cases of TB (all forms) in a population at a given point in time (sometimes referred to as "point prevalence"). It is expressed as the number of cases per 100,000 population. Estimates include cases of TB in people with HIV. **Incidence**: TB incidence is the estimated number of new TB cases arising in one year per 100,000 population. All forms of TB are included, as are cases of people with HIV. **Aggregate calculations:** MDG aggregation and imputation methods; weighted averages using population (WPP2012) as weight.

TB detection rate under DOTS (percentage of new TB cases)

The TB detection rate is the percentage of estimated new infectious TB cases detected under the internationally recommended TB control strategy DOTS. The term "case detection" as used here means that TB is diagnosed in a patient and is reported within the national surveillance system, and then to WHO. **Aggregate calculations:** Weighted averages using the number of TB cases per year (WHO Global Health Observatory) as weight. Missing data are not imputed.

Population living with TB (thousands)

Population living with TB refers to the number of cases of TB (all forms) in a population at a given point in time expressed in thousands. This is calculated for only economic, regional and subregional groupings. **Aggregate calculations:** MDG aggregation and imputation methods; the population for each economic, regional or subregional grouping multiplied by the TB prevalence rate, divided by 100,000.

New cases of TB (thousands)

New cases of TB refers to the estimated number of new TB cases arising in one year expressed in thousands. This is calculated for only economic, regional and subregional groupings. **Aggregate calculations:** MDG aggregation and imputation

methods; the population for each economic, regional or subregional grouping multiplied by the TB incidence rate, divided by 100,000.

Source

Source of malaria data: WHO Global Malaria Programme, WHO World Malaria Report 2012, annexes (available from www.who.int/malaria/publications/world_malaria_report_2012/en/). The principal data sources are national malaria control programmes in endemic countries. Standardized data collection forms are sent to each Government. Survey data (demographic and health surveys, multiple indicator cluster surveys and malaria indicator surveys) have been used to complement data submitted by national malaria control programmes. **Data obtained:** 4 June 2013 for malaria deaths, and 27 June 2013 for malaria cases.

Source of TB data: Millennium Indicators Database. Based on data from WHO. Annual standardized data collection forms are distributed to national TB control programmes or the relevant public health authorities. National TB control programmes that respond to WHO are also asked to update information on earlier years. As a result, case notification and treatment outcome data of a given year may differ from those published previously. Completed forms are collected and reviewed by WHO country offices, regional offices and headquarters. **Data obtained:** 1 August 2013 except Tuberculosis detection rate under DOTS obtained on 19 August 2013.

B.4.1 Malaria and tuberculosis

	Malaria				Tuberculosis					
	Cases		Deaths		Prevalence		Incidence		Detection under DOTS	
	Per 100,000 population		Number		Per 100,000 population				% of new tuberculosis cases	
	2000	2011	2000	2011	2000	2011	2000	2011	2000	2011
East and North-East Asia	**15**	**2**	**31**	**33**	**168**	**104**	**106**	**76**	**39**	**91**
China	0	0	31	33	170	104	109	75	33	89
DPR Korea	895	68			669	422	344	345	43	110
Hong Kong, China					142	99	111	78	80	86
Japan					45	26	35	20	89	86
Macao, China					158	94	123	73	84	84
Mongolia					433	348	254	223	51	68
Republic of Korea	9	2	0		184	149	79	100	60	88
South-East Asia	**560**	**349**	**5 685**	**1 165**	**515**	**331**	**242**	**212**	**39**	**71**
Brunei Darussalam					109	89	85	70	110	81
Cambodia	1 662	393	608	94	1 619	817	577	424	26	64
Indonesia	685	542	833	388	457	281	204	187	19	70
Lao PDR	5 195	275	350	17	961	540	330	213	13	32
Malaysia	54	18	35		138	101	95	81	68	85
Myanmar	1 200	1 084	2 556	581	831	506	412	381	17	74
Philippines	47	10	536	12	775	484	329	270	47	76
Singapore					65	46	52	37	85	86
Thailand	126	37	625	43	276	161	171	124	32	76
Timor-Leste	1 782	3 290		16		701		498		76
Viet Nam	340	51	142	14	344	323	205	199	56	56
South and South-West Asia	**417**	**127**	**1 472**	**832**	**411**	**254**	**199**	**175**	**48**	**59**
Afghanistan	990	1 659		40	433	351	189	189	16	46
Bangladesh	331	34	484	36	481	411	225	225	26	45
Bhutan		28	15	1	718	230	402	192	50	87
India	195	107	892	753	438	249	216	181	49	59
Iran (Islamic Rep. of)	30	4	4		39	31	26	21	71	71
Maldives					110	44	74	34	65	81
Nepal	210	264		2	242	243	163	163	74	71
Pakistan	2 320	190			547	350	231	231	3	64
Sri Lanka	1 114	1	77		107	101	66	66	68	70
Turkey	18	0	0		45	24	36	24	78	85
North and Central Asia	**11**	**0**	**2**		**347**	**145**	**190**	**104**	**63**	**77**
Armenia	5	0			89	78	61	55	71	74
Azerbaijan	19	0	0		1 609	177	682	113	9	62
Georgia	5	0			487	159	256	125	36	84
Kazakhstan					641	168	351	129	49	87
Kyrgyzstan	0	0	0		441	175	249	128	50	80
Russian Federation	1	0	2		192	124	127	97	75	81
Tajikistan	308	1			476	350	220	193	20	47
Turkmenistan	1	0	0		411	96	213	74	42	
Uzbekistan	1	0	0		618	177	286	101	22	52
Pacific					**113**	**115**	**74**	**76**	**59**	**65**
American Samoa					10	13	7	8	75	55
Australia					8	8	6	6	90	90
Cook Islands					10	8	8	6	69	82
Fiji					107	33	54	26	33	92
French Polynesia					47	29	37	23	71	100
Guam					53	84	41	65	85	68
Kiribati					497	462	372	356	81	95
Marshall Islands					539	924	263	536	25	47
Micronesia (F.S.)					561	294	279	200	30	66
Nauru					41	42	32	33	130	150
New Caledonia					53	32	41	25	110	83
New Zealand					14	10	11	8	80	91
Niue					63	52	49	40	0	170
Northern Mariana Islands					155	77	120	60	91	90
Palau					257	256	156	153		38
Papua New Guinea	29 859	14 617	617	431	530	534	349	346	56	61
Samoa					35	13	23	10	100	110
Solomon Islands	89 469	15 030	38	19	364	162	185	103	40	70
Tonga					39	27	28	16	88	55
Tuvalu					633	381	357	228	48	53
Vanuatu	18 253	2 384	3	1	162	97	110	67	75	67
Asia and the Pacific	**319**	**136**	**7 848**	**2 481**	**324**	**202**	**167**	**139**	**46**	**71**
Developed countries					39	23	31	18	89	86
Developing countries	319	136	7 848	2 481	335	209	172	143	45	71
LLDC	549	469			559	249	268	147	46	63
LDC	892	481	4 054	807	592	430	274	254	33	60
ASEAN	558	343	5 685	1 149	515	331	242	211	39	71
ECO	1 050	200			386	210	175	136	43	64
SAARC	454	138	1 468	832	446	275	215	189	48	59
Central Asia	37	0			667	182	320	117	37	70
Pacific island dev. econ.	33 612	14 266	658	451	409	403	264	262	56	62
Low income econ.	627	398	3 648	753	586	421	277	259	35	69
Lower middle income econ.	595	221	3 503	1 652	462	277	221	190	47	63
Upper middle income econ.	8	2	697	76	177	102	112	75	44	87
High income econ.					76	55	45	39	79	87
Africa	**6 144**	**7 985**		**115 955**	**330**	**262**	**269**	**231**	**52**	**64**
Europe					**48**	**28**	**35**	**22**	**76**	**86**
Latin America and Carib.	**241**	**87**	**362**	**113**	**83**	**54**	**61**	**43**	**71**	**85**
North America					**8**	**5**	**7**	**4**	**86**	**86**
World	**1 064**	**1 530**	**88 393**	**118 626**	**257**	**170**	**148**	**125**	**51**	**70**

B.5. Other health risks

Causes of death can be classified into three broad categories: communicable diseases, non-communicable diseases (NCDs) and injuries. Unfortunately, there is a dearth of recent data on causes of death (the latest being for 2008), which makes planning and monitoring effective responses to social and health challenges difficult for decision makers.

NCDs have been attracting increased attention in the Asian and Pacific region. However, in low-income, lower-middle-income and upper-middle-income economies, where fewer resources are available for health, the risk of NCDs is rapidly growing. Most health systems in the region are currently not in a position to address the challenges that present themselves, while the human and financial impacts of NCDs are set to increase significantly in the coming decades. In response, preventive measures and health promotion must be given higher priority.

The major NCDs (including cardiovascular diseases, cancers, chronic respiratory diseases and diabetes) correspond to common, interrelated and modifiable risk factors. These include being overweight/obese, the harmful use of tobacco and alcohol, unhealthy diets, insufficient physical activity, and elevated levels of blood pressure, blood sugar and cholesterol. Due to the lack of recent data for some indicators, the present topic considers only smoking and alcohol consumption in the Asian and Pacific region.

Smoking prevalence among females was much lower in the Asian and Pacific region (5.1 per cent) than in most of the rest of the world in 2009.

In the Asian and Pacific region, the prevalence of smoking among females is well below the global average and lower than in any other region apart from Africa. Furthermore, over the period from 2006 to 2009, smoking prevalence among women in the region fell by 20 per cent. This was a decline greater than that in Latin America and the Caribbean and in Europe (where prevalence was several times higher), while there was a rise in Africa and, especially, North America. The global prevalence decreased from 9.6 per cent in 2006 to 8.6 per cent in 2009.

Unlike among females, the smoking prevalence among males in the Asian and Pacific region was above the global average and the averages of all other regions. The decrease of 12 per cent from 2006 to 2009 was, nonetheless, the greatest decline compared with that of other regions, and contrary to the increased smoking prevalence among males in North America.

Most countries in the region have large gender differences, with men smoking more than women. However, in 2009, Nepal and some Pacific countries recorded relatively small differences between females and males in smoking prevalence. For Australia, New Zealand and Nepal the difference was between 3 percentage points and 7 percentage points, while for the Cook Islands it was 12 percentage points. Nauru stands out as being the only country in the region where the prevalence among females is greater than among males, with half of all women smoking. The above-mentioned countries, along with Kiribati and the Russian Federation, have a smoking prevalence among females of between 19 per cent and 50 per cent. While in many countries there was little change over time, female smoking prevalence in some countries with relatively high rates, namely Turkey, the Russian Federation and the Cook Islands, fell, with reductions between 2006 and 2009 of 25 per cent, 14 per cent and 9 per cent,

Figure B.5-1
Smoking prevalence among males, 10 highest prevalence countries in Asia and the Pacific, 2006 and 2009

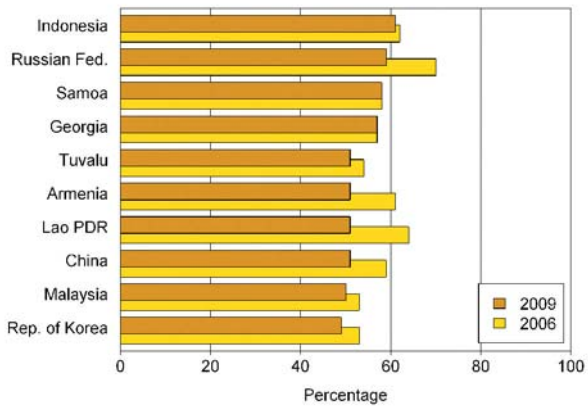
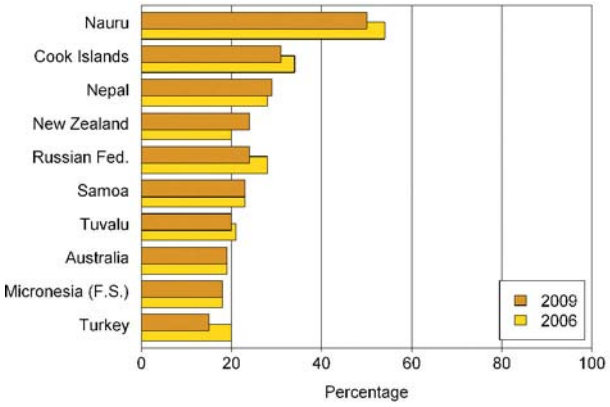


Figure B.5-2
Smoking prevalence among females, 10 highest prevalence countries in Asia and the Pacific, 2006 and 2009



respectively. The rates of New Zealand and Nepal increased by 20 per cent and 3 per cent, respectively, over the same period.

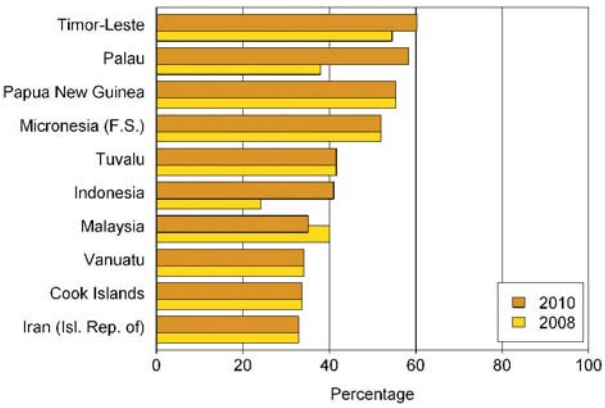
In 2009, about 60 per cent of the male populations of Indonesia, Papua New Guinea, the Russian Federation and Samoa smoked tobacco, while in Kiribati the number was 71 per cent. In other countries in the region, such as Armenia, China, Georgia, the Lao People's Democratic Republic, Malaysia and Tuvalu, at least half of male adults smoked. In Armenia, Fiji, India, the Lao People's Democratic Republic, the Russian Federation, Sri Lanka and Tonga, the recorded smoking prevalence among males in 2009 was more than 15 per cent lower than it was in 2006. In some countries, however, there was an increase in smoking prevalence among males between 2006 and 2009, namely New Zealand (23 per cent), Mongolia (4 per cent), Nauru (4 per cent), Thailand (5 per cent) and the Cook Islands (2 per cent).

Smoking among adolescents is a serious concern in the Asian and Pacific region, with prevalence increasing in some countries.

Tobacco companies often target adolescents to make them their key consumers and thus adolescents are often at high risk of tobacco consumption. Given that many young smokers continue the habit to, and throughout, adulthood, exposure to tobacco use and to smoking during adolescence may establish risk factors for NCDs that can set in later in life. Studies show that tobacco consumption has a direct link with the incidence of cancer, heart disease and stroke, and theearly symptoms of these diseases can be found in adolescents who consume tobacco.[1]

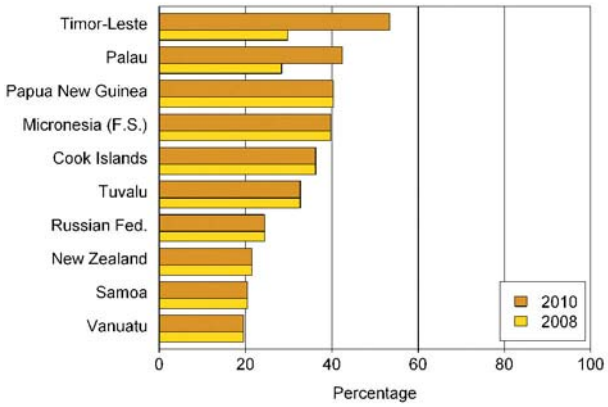
In 2010, 40 per cent or more of adolescents, both male and female, in the Federated States of Micronesia, Palau, Papua New Guinea and Timor-Leste consumed tobacco. For 2008 and 2010, the proportions in the Federated States of Micronesia and Papua New Guinea remained constant, while Timor-Leste and Palau recorded alarming increases. In 2010, smoking prevalence among female adolescents in Timor-Leste (53 per cent) and in Palau (42 per cent) increased by 79 per cent and 49 per cent, respectively, from the figures for 2008. In other countries, such as the Cook Islands, the Federated States of Micronesia and Tuvalu, between 33 per cent and 40 per cent of female adolescents were smokers and there was no change in the figures from 2008 to 2010.

Figure B.5-3
Smoking prevalence among adolescent males, 10 highest prevalence countries in Asia and the Pacific, 2008 and 2010



[1] United States Department of Health and Human Services, Centers for Disease Control and Prevention, "Preventing tobacco use among young people: a report of the Surgeon General (executive summary)", *Morbidity and Mortality Weekly Report,* vol. 43, No. RR-4 (March 1994). Available from www.cdc.gov/mmwr/PDF/rr/rr4304.pdf.

Figure B.5-4
Smoking prevalence among adolescent females, 10 highest prevalence countries in Asia and the Pacific, 2008 and 2010



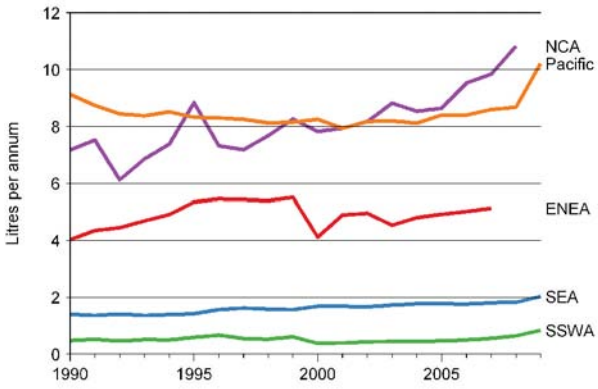
In 2010, the proportions of male adolescent smokers in Timor-Leste (60 per cent) and in Palau (58 per cent) were the highest in the region, with Palau recording a 53 per cent increase from 2008. Within the same period, Indonesia and Turkey also recorded increases in the prevalence of smoking among both male and female adolescents. Smoking among male adolescents in Indonesia increased from 24 per cent in 2008 to 41 per cent in 2010, an alarming change that could imply a significant increase in the future disease burden. In Bhutan, Kazakhstan and Malaysia signs were more promising, these being the only countries in the region that recorded reductions in the prevalence of smoking among both male and female adolescents.

There are substantial differences in the amount of alcohol consumed per capita across Asian and Pacific subregions, with North and Central Asia and the Pacific recording the highest rates, and South and South-West Asia by far the lowest.

In 2007, adult per capita alcohol consumption in the region was 3.18 litres, 30 per cent lower than the global average and lower than in any other region. Over recent decades, the region's annual rate has fluctuated; it reached a peak of 3.38 litres per adult in 1995, then fell steadily to a nadir of 2.67 litres per adult in 2000. Since then, the average consumption level among adults has risen again. Among the subregions, there are large differences in the levels of alcohol consumption per adult; the most recent data show high levels in North and Central Asia (10.9) and the Pacific (10.2), moderate levels in East and North-East Asia (5.1), and low levels in South-East Asia (2.0) and especially in South and South-West Asia (0.8).

From the 1980s through the 1990s and on until the 2000s, the Pacific recorded high levels of adult per capita alcohol consumption. In North and Central Asia, the level was moderate in the 1980s, rose in the 1990s and by 2003 was the highest in the region. Generally, increases have also been experienced in the remaining three subregions, yet with levels consistently lower than those of the two above-mentioned subregions.

Figure B.5-5
Per capita alcohol consumption (litres), Asian and Pacific subregions, 1990 to last year with data available



In the year with the most recent data, more than 10 litres of alcohol was consumed by each adult in the Cook Islands (18.0), the Republic of Korea (12.1), the Russian Federation (11.5), Australia (10.4) and New Caledonia (10.1). The highest levels of per capita alcohol consumption observed in South-East Asia and in South and South-West Asia were 6.1 in Thailand and 1.3 in Turkey.

Box B.5-1
Non-communicable diseases and related risks in the Pacific

The World Health Organization (WHO) estimates that 75 per cent of deaths in the Pacific are caused by NCDs.[a] In all Pacific island developing economies, with the exception of Papua New Guinea and Solomon Islands, there are more years of life lost to NCDs than to communicable diseases. Papua New Guinea and Solomon Islands have the dual burden of a high rate of communicable diseases and an increasing rate of NCDs. The high prevalence of NCDs in the Pacific can be explained by a number of factors, including excessive alcohol consumption, a high prevalence of smoking, poor nutrition, a lack of physical activity and obesity. As stated in this chapter, smoking prevalence in the Pacific is high for both women and men, and per capita alcohol consumption is almost double the world average. In addition, a large percentage of the population of almost all countries in the Pacific has a low daily intake of fruits and vegetables and low levels of physical activity (see table).

This combination of risk factors, along with ageing populations, has led to an increased risk of heart disease, diabetes, stroke and cancer. The high NCD risk and a lack of early clinical intervention for many NCDs result in the additional risk of permanent disability for many Pacific islanders. Defining and measuring disability is challenging; however, disability prevalence rates are available for many countries in the Asian and Pacific region. The Pacific has the highest estimated prevalence of disability of any of the subregions, and although NCDs are not the only cause of disability, the increasing threat of NCDs poses an additional risk of disability if preventive measures and clinical intervention are not improved.

Momentum has been building for positive change and in September 2011, the Pacific Islands Forum Leaders recognized the emerging challenges caused by NCDs and committed to improving accountability, prevention and early intervention.

Table. Prevalence of behavioural risk factors for non-communicable diseases, Pacific island developing economies with data available, most recent year

Country/areas	Percentage of the population (most recent data available)			
	Low fruit and vegetable intake	Low physical activity	Obesity	High non-communicable disease risk
Cook Islands	84.7	73.9	61.4	71.8
Fiji	..	..	29.6	..
Kiribati	99.3	50.1	50.6	74.6
Marshall Islands	91.1	50.0	..	..
Nauru	97.0	52.3	..	79.3
Papua New Guinea	98.9	9.9	6.8	21.9
Samoa	43.3	50.3	54.8	33.8
Solomon Islands	93.6	41.9	32.8	46.0
Tonga	69.4	42.4	69.1	..

Source: Secretariat of the Pacific Community, various NCD Risk Factors STEPS reports for the years 2005-2010 for the Pacific countries and territories listed in the table (2005-2010). Available from http://www.spc.int/hpl/index.php?option=com_content&task=view&id=54&Itemid=42.

[a] Secretariat of the Pacific Community, "Pacific NCD Forum Meeting report" (New Caledonia, 2010).

Box B.5-2
Improving national civil registration systems for safeguarding rights, promoting good governance and producing better data, including on causes of death

The United Nations Children's Fund estimates that, globally, 49 per cent of children under 5 years of age have not had their birth registered and do not have a birth certificate.[a] Of similar concern, it is estimated that two thirds of deaths, approximately 38 million, occur every year without being registered.[b] Births and deaths are just two types of important life events that are not being registered; others include marriages, divorces and adoptions.

The implications of these life events going unregistered are profound. Related rights and entitlements, many of them fundamental, are being lost. These include the right to have a name and a legal identity, to claim inheritance, to participate in political processes, and to access such essential services as health, education and social protection. If these life events are not legally recorded, it is as if they had never happened.

At the same time, the registration of these life events is an important opportunity to collect data that can be used to generate vital statistics on the health and demographics of the population, including on mortality. For example, precise cause-of-death statistics can be produced through correct death registration and certification processes. Unlike other sources of vital statistics, such as surveys and censuses, the data generated from universal and effective civil registration systems are complete and continuous and can be disaggregated to the administrative subdivisions of a country.

Data from civil registration systems also serve the imperative purpose of providing reliable and recent information on socioeconomic progress and thus have a role in improving development outcomes. Importantly, the vital statistics generated through civil registration systems form the basis of measuring most of the Millennium Development Goal indicators.

To measure progress towards meeting Millennium Development Goal 5 on maternal health, the main sources of information in developing countries are demographic and health surveys, and multiple indicator cluster surveys. While these surveys provide highly useful information and without them possibly no other source of data would be available, they are not the best long-term solution to measuring maternal mortality and causes of death. In these cases, the preferred source of data is from civil registration systems.

Unfortunately, the majority of ESCAP member States do not have well-functioning civil registration systems to safeguard the rights of individuals and to produce better vital statistics. In response, ESCAP is partnering with over a dozen other organizations, including Plan International, the Secretariat of the Pacific Community, the United Nations Children's Fund, the United Nations Population Fund, the Office of the United Nations High Commissioner for Refugees and the World Health Organization, to work with countries to remedy the situation.

In November 2014, ESCAP and development partners will convene a ministerial meeting with the aim of raising awareness of the importance of universal and effective civil registration and vital statistics systems in the Asian and Pacific region and to secure commitment by governments and development partners to a set of actions and milestones for the region.

[a] United Nations Children's Fund, "Without birth registration, children are shut out of society altogether", 14 February 2013. Available from www.unicef.org/protection/57929_67803.html.
[b] P.W. Setel and others, "A scandal of invisibility: making everyone count by counting everyone", *The Lancet*, vol. 370, No. 9598 (November 2007), pp. 1569-1577.

Further reading

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Technical notes

Years of life lost: communicable diseases, NCDs and injuries (percentage of years of life lost)

Years of life lost is an estimate of the average number years a person would have lived had he or she not died prematurely; that is, a measure of premature mortality. Years of life lost per person represents the difference between the standard life expectancy of a person and his or her age at death; if the age exceeds the life expectancy, years of life lost equals zero. The standard life expectancy value is consistent across countries and generated using a standard life table. A life table is the statistical representation of the probability that a person will survive for an additional year, and based on that probability, the probability of surviving for another year, and so on.

Suicide rate: females and males (per 100,000 population)

The total number of suicides in a given year divided by the respective midyear population, expressed per 100,000 population. Suicide is defined as the act of deliberately killing oneself. Disaggregated by gender.

Smoking prevalence rate: females and males (percentage of females or males)

Tobacco smoking includes cigarettes, cigars, pipes or any other smoked tobacco products. Current smoking includes both daily and non-daily or occasional smoking. Disaggregated by gender. **Aggregate calculations:** Weighted averages using the population aged 15 years or older (WPP2012) as weight. Missing data are not imputed.

Adolescent tobacco use: females and males (percentage of population aged 13-15 years)

Adolescents aged 13-15 years who report use of tobacco, including smoking, oral tobacco and snuff, on more than one occasion in the 30 days preceding the survey. Disaggregated by gender. **Aggregate calculations:** Weighted averages using the population aged 13-15 years (WPP2012) as weight. Missing data are not imputed.

Recorded adult per capita alcohol consumption, total (litres per annum)

The recorded amount of alcohol consumed per adult (aged 15 years or older) over a calendar year in a country, in litres of pure alcohol. The indicator takes into account only the consumption that is recorded from production,

import, export and sales data often via taxation. **Numerator:** The amount of recorded alcohol consumed per adult (aged 15 years or older) during a calendar year, in litres of pure alcohol. **Denominator:** Midyear resident population (aged 15 years or older) for the same calendar year (WPP2012). **Aggregate calculations:** Weighted averages using the population aged 15 years or older (WPP2012) as weight. Missing data are not imputed.

Source

Source of years of life lost data: WHO Global Health Observatory. WHO uses a standardized questionnaire for data collection. Cause-of-death distributions are estimated from death registration data, together with data from population-based epidemiological studies, disease registers and notifications systems for selected specific causes of death. Causes of death for populations without usable death-registration data are estimated using cause-of-death models together with data from population-based epidemiological studies, disease registers and notification systems for 21 specific causes of death. **Data obtained:** 20 June 2011.

Source of suicide data: WHO, Department of Mental Health and Substance Abuse. Online report accessed on 1 March 2011. Member States report to WHO the causes of death including suicide. Country data are supplemented by data provided by the WHO Regional Office for the Western Pacific. **Data obtained:** 29 August 2012.

Source of tobacco data: WHO Global Health Observatory. Smoking and tobacco-use prevalence data were sourced from survey data provided by countries. **Data obtained:** 29 and 30 August 2012.

Source of alcohol consumption data: WHO Global Health Observatory, Global Information System on Alcohol and Health. Data were collected through the Global Survey on Alcohol and Health, which was conducted in 2008 in collaboration with all six WHO regional offices. The survey data collection tool was forwarded to every WHO member State in each region for completion by focal points and national counterparts who were officially nominated by their respective ministry of health. Data were adjusted by WHO for consistency. **Data obtained:** 3 October 2012.

B.5.1 Tobacco and alcohol consumption

	Smoking prevalence rate				Adolescent tobacco use				Recorded adult per capita consumption				
	Females		Males		Females		Males						
	% of females/males				% of population aged 13-15				Litres per annum				
	2006	2009	2006	2009	2008	2010	2008	2010	1990	2000	2003	2005	07-10
East and North-East Asia	**4.8**	**3.1**	**57.3**	**50.2**					**4.0**	**4.1**	**4.5**	**4.9**	**5.1** (07)
China	4.0	2.0	59.0	51.0	4.1	4.1	7.1	7.1	3.4	3.5	3.9	4.4	4.7 (07)
DPR Korea	0.0		58.0						3.7	3.5	3.1	3.2	2.3 (08)
Hong Kong, China									4.0	2.9	2.4	2.5	2.9 (09)
Japan	13.0	12.0	42.0	42.0					8.3	8.0	7.8	8.0	7.3 (07)
Macao, China									3.4	4.0	4.0	5.4	6.1 (08)
Mongolia	6.0	6.0	46.0	48.0	16.0	16.0	25.7	25.7	2.2	2.8	1.6	1.9	3.4 (08)
Republic of Korea	6.0	7.0	53.0	49.0	10.6	10.6	14.9	14.9	8.4	10.9	12.2	11.7	12.1 (07)
South-East Asia	**6.1**	**5.0**	**53.7**	**51.8**					**1.4**	**1.7**	**1.7**	**1.8**	**2.0** (09)
Brunei Darussalam		4.0		32.0					2.9	0.4	0.1	0.2	0.1 (08)
Cambodia	7.0	3.0	49.0	42.0	3.0	3.0	7.2	7.2	0.4	1.4	1.7	2.0	2.2 (08)
Indonesia	5.0	5.0	62.0	61.0	4.0	6.2	24.1	41.0	0.1	0.1	0.1	0.1	0.1 (09)
Lao PDR	15.0	4.0	64.0	51.0	3.9	3.9	7.8	7.8	4.8	5.5	5.6	5.8	5.9 (08)
Malaysia	3.0	2.0	53.0	50.0	11.5	9.4	40.0	35.1	0.8	0.6	0.5	0.5	0.5 (09)
Myanmar	15.0	8.0	43.0	40.0	8.2	8.2	22.5	22.5	0.1	0.1	0.1	0.1	0.1 (08)
Philippines	12.0	10.0	53.0	47.0	17.5	17.5	28.3	28.3	4.2	4.8	4.5	4.2	4.6 (09)
Singapore	6.0	6.0	36.0	35.0	7.5	7.5	10.5	10.5	0.6	2.0	1.5	1.6	2.0 (10)
Thailand	2.0	3.0	43.0	45.0	8.4	7.5	21.7	24.0	5.0	6.0	6.3	6.5	6.1 (09)
Timor-Leste					29.8	53.4	54.5	60.2	0.4	0.5	0.4	0.3	0.1 (08)
Viet Nam	2.0	2.0	49.0	48.0	1.5	1.5	6.5	6.5	0.2	0.7	1.0	1.3	1.9 (09)
South and South-West Asia	**5.4**	**4.8**	**35.0**	**29.5**					**0.5**	**0.4**	**0.4**	**0.5**	**0.8** (09)
Afghanistan					3.2	3.2	13.1	13.1	0.0	0.0	0.0	0.0	0.0 (08)
Bangladesh	4.0	2.0	47.0	46.0	5.1	5.1	9.1	9.1	0.0	0.0	0.0	0.0	0.0 (08)
Bhutan					12.4	11.6	28.6	27.6	1.7	2.3	0.8	0.7	0.4 (07)
India	4.0	4.0	33.0	26.0	9.4	8.3	16.8	19.0	0.6	0.4	0.5	0.6	1.0 (09)
Iran (Islamic Rep. of)	5.0	2.0	30.0	26.0	19.5	19.5	32.9	32.9	0.0	0.0	0.0	0.0	0.0 (09)
Maldives	12.0	11.0	45.0	43.0	3.4	3.4	8.5	8.5					
Nepal	28.0	29.0	36.0	36.0	5.3	5.3	13.0	13.0	0.0	0.1	0.2	0.2	0.2 (08)
Pakistan	7.0	6.0	35.0	34.0	7.5	7.5	12.4	12.4	0.0	0.0	0.0	0.0	0.0 (09)
Sri Lanka	2.0	1.0	32.0	27.0	5.8	5.8	12.4	12.4	0.2	0.2	0.3	0.3	0.4 (08)
Turkey	20.0	15.0	51.0	47.0	4.4	7.4	11.1	14.4	0.8	1.5	1.4	1.3	1.3 (09)
North and Central Asia	**21.9**	**19.4**	**61.5**	**52.0**					**7.2**	**7.8**	**8.8**	**8.6**	**10.8** (08)
Armenia	3.0	2.0	61.0	51.0	2.7	4.3	13.0	10.9	3.2	2.5	3.3	3.6	3.5 (09)
Azerbaijan	1.0			41.0					2.5	1.4	1.3	1.3	1.5 (07)
Georgia	6.0	6.0	57.0	57.0	2.8	2.8	15.2	15.2	4.8	4.1	4.0	5.0	6.0 (09)
Kazakhstan	9.0	9.0	43.0	40.0	8.1	7.8	15.2	12.2	11.9	5.6	5.9	6.4	7.0 (07)
Kyrgyzstan	2.0	2.0	46.0	45.0	4.4	4.4	10.3	10.3	4.5	4.1	4.5	4.6	5.5 (07)
Russian Federation	28.0	24.0	70.0	59.0	24.4	24.4	30.1	30.1	7.1	9.8	11.3	11.0	11.5 (08)
Tajikistan					2.8	2.8	6.8	6.8		0.4	0.4	0.4	0.3 (08)
Turkmenistan										2.9	2.3	2.3	2.3 (07)
Uzbekistan	3.0	3.0	23.0	22.0	1.6	1.6	2.7	2.7		1.6	1.5	1.8	
Pacific	**18.7**	**21.1**	**22.5**	**28.9**					**9.1**	**8.3**	**8.2**	**8.4**	**10.2** (10)
American Samoa										0.2	0.2	0.1	0.2 (08)
Australia	19.0	19.0	22.0	22.0					10.5	10.0	10.0	10.3	10.4 (10)
Cook Islands	34.0	31.0	42.0	43.0	36.3	36.3	33.7	33.7	6.1	3.7	9.3	11.7	18.0 (08)
Fiji	4.0	3.0	22.0	18.0	10.2	10.1	11.6	17.5	2.4	2.1	1.8	2.1	2.0 (08)
French Polynesia									8.0	6.7	8.5	8.8	
Guam									6.4	5.0	5.5	0.4	0.4 (07)
Kiribati		43.0		71.0					0.2	1.2	1.7	1.6	
Marshall Islands	6.0	7.0	36.0	36.0									
Micronesia (F.S.)	18.0	18.0	30.0	30.0	39.8	39.8	51.9	51.9	0.0	0.2	3.5	3.3	
Nauru	54.0	50.0	47.0	49.0						5.5	2.3	2.3	2.2 (08)
New Caledonia									6.6	10.1	10.1	10.1	10.1 (08)
New Zealand	20.0	24.0	22.0	27.0	21.5	21.5	18.7	18.7	11.5	8.9	9.0	9.3	9.6 (10)
Niue									7.6	6.1	10.8	7.8	8.9 (08)
Northern Mariana Islands													
Palau	9.0	9.0	38.0	37.0	28.4	42.4	38.0	58.3			7.0	11.3	
Papua New Guinea		31.0		58.0	40.3	40.3	55.4	55.4	2.2	1.8	1.5	1.4	1.6 (08)
Samoa	23.0	23.0	58.0	58.0	20.4	20.4	25.8	25.8	2.3	3.0	4.2	3.6	3.9 (08)
Solomon Islands		19.0		46.0					0.7	0.9	1.2	0.9	1.1 (08)
Tonga	15.0	13.0	62.0	44.0					0.8	1.6	1.8	1.6	2.1 (07)
Tuvalu	21.0	20.0	54.0	51.0	32.7	32.7	41.6	41.6	1.3	1.0	2.0	1.0	1.6 (08)
Vanuatu	7.0	8.0	50.0	43.0	19.6	19.6	34.1	34.1	1.5	1.3	1.2	0.9	0.8 (08)
Asia and the Pacific	**6.4**	**5.1**	**48.2**	**42.2**					**2.7**	**2.7**	**2.9**	**3.1**	**3.2** (07)
Developed countries	13.9	13.2	38.9	38.8					8.6	8.2	8.1	8.3	7.8 (07)
Developing countries	6.0	4.7	48.7	42.4					2.4	2.4	2.7	2.8	3.0 (07)
LLDC	10.9			35.4					4.3	2.0	2.0	2.1	2.4 (07)
LDC	9.5	6.3	45.6	43.7					0.2	0.2	0.2	0.3	0.3 (08)
ASEAN	6.1	5.0	53.7	51.8					1.4	1.7	1.7	1.8	2.0 (09)
ECO	8.9	6.9	36.7	34.5					1.2	0.8	0.8	0.8	0.3 (09)
SAARC	4.7	4.4	34.6	28.9					0.5	0.3	0.4	0.4	0.9 (09)
Central Asia	4.4	4.9	36.3	35.0						2.9	2.9	3.1	
Pacific island dev. econ.		26.2		52.1					2.5	2.2	2.2	2.0	1.9 (08)
Low income econ.	8.2	6.2	46.4	43.5					0.6	0.5	0.5	0.5	0.4 (08)
Lower middle income econ.	4.7	4.5	38.7	33.5					0.7	0.6	0.7	0.7	1.0 (09)
Upper middle income econ.	6.9	4.7	57.7	50.1					3.7	3.9	4.4	4.7	6.0 (08)
High income econ.	12.0	11.7	42.0	41.1					8.3	8.5	8.7	8.7	8.4 (07)
Africa	**2.5**	**2.8**	**20.5**	**20.3**					**3.8**	**3.7**	**3.5**	**3.5**	**4.5** (08)
Europe	**26.1**	**23.7**	**38.5**	**36.7**					**11.2**	**10.6**	**10.6**	**10.6**	**10.5** (09)
Latin America and Carib.	**15.3**	**12.8**	**27.6**	**24.7**					**5.8**	**5.9**	**5.7**	**5.7**	**5.8** (07)
North America	**18.9**	**24.2**	**24.9**	**32.1**					**9.2**	**8.2**	**8.3**	**8.4**	**8.6** (09)
World	**9.6**	**8.6**	**41.3**	**37.4**					**4.5**	**4.2**	**4.3**	**4.4**	**4.6** (07)

B.6. Financial and human resources for health

Investments in health, as with other elements of social protection, are often seen as vital to achieving sustainable and inclusive development. With the Asian and Pacific region acting as the engine of global economic growth it might be expected that more resources would be directed to health. In reality, many countries exhibit low levels of health spending and limited coverage of health workers. There are, however, some positive trends, including countries that have achieved or are close to achieving universal coverage of health care, and these need to be built upon.

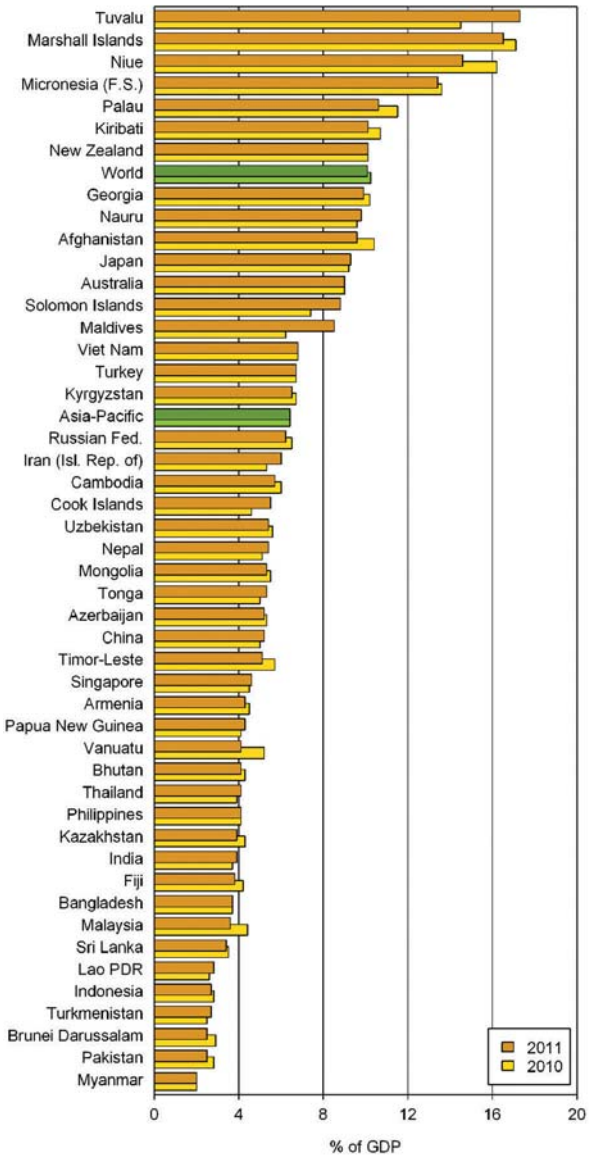
Although the Asian and Pacific region is a key source of global economic dynamism, its growth has generally not led to relative increases in health spending, and the level of spending is still significantly lower than the global aggregate, particularly government spending on health.

Asia and the Pacific has an abundance of financial resources, with substantial economic investments taking place across the region. However, health expenditure has not reached the same level. In fact, the regional aggregate figure for total health expenditure as a percentage of GDP, at 6.43 per cent in 2011, is considerably lower than the global aggregate of 10.07 per cent.

At the subregional level, East and North-East Asia and South and South-West Asia experienced decreases in total health expenditure as a percentage of GDP between 2009 and 2010, and an increase between 2010 and 2011, but this was not enough to return to 2009 levels. During the same period, South-East Asia decreased in consecutive years from 4.05 per cent in 2009 to 3.65 per cent in 2011. North and Central Asia experienced an increase in 2010 to 6.23 per cent from 6.02 per cent a year earlier, and then a decrease back down to 5.94 per cent in 2011. Although the Pacific has remained constant since 2009 at around 9.05 per cent, if Australia and New Zealand are excluded from that aggregate, there was a modest decrease from 5.03 per cent in 2009 to 4.93 per cent in 2011. The five countries with the highest rates of total health expenditure as a percentage of GDP were all in the Pacific (Tuvalu, Marshall Islands, Niue, Federated States of Micronesia, and Palau).

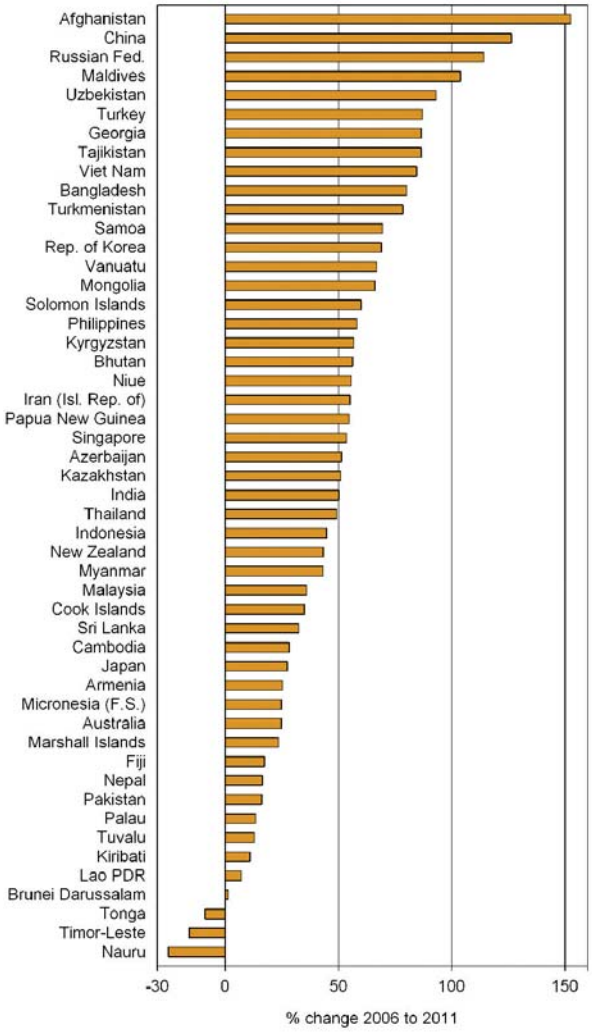
With regard to total health expenditure per capita, significant variations exist between countries, but several countries stand out for having achieved large increases, often facilitated by economic growth. Afghanistan, China, Maldives and Russian Federation more than doubled per capita expenditure over the period 2005 to 2011, while in Nauru the figure experienced a reduction of 25 per cent. In

Figure B.6-1
Total health expenditure as a percentage of GDP, Asia and the Pacific, 2010 and 2011



Bangladesh, Georgia, Tajikistan, Turkey, Uzbekistan and Viet Nam the increase from 2005 to 2011 was in the range of 80 per cent to 95 per cent. Only three countries recorded decreases in the same period: Nauru (25 per cent), Timor-Leste (16 per cent), and Tonga (9 per cent).

Figure B.6-2
Total health expenditure per capita, Asia and the Pacific, percentage change from 2005 to 2011



General government health expenditure as a percentage of total government expenditure tends to be higher in East and North-East Asian and in Pacific countries than in countries in other subregions. Some of the lowest rates are found in several least developed countries in the region, such as Myanmar (1.3 per cent) and Timor-Leste (2.9 per cent).

In terms of general government health expenditure per capita, East and North-East Asia and the Pacific are the only subregions where all countries with reported data have figures over the WHO recommended minimum spending of $60 per capita purchasing power parity (PPP) to achieve the health-related Millennium Development Goals.[1] In South-East Asia, six countries spend less than this amount, in South and South-West Asia five countries spend less, and in North and Central Asia one country spends less.

The five countries with the largest declines in general government health spending per capita between 2010 and 2011 were Afghanistan (33 per cent), Malaysia (29 per cent), Vanuatu (19 per cent), Brunei Darussalam (14 per cent) and Pakistan (11 per cent). In the same period, the five countries with the largest increases were Solomon Islands (31 per cent), India (23 per cent), the Lao People's Democratic Republic (23 per cent), Tuvalu (22 per cent) and the Cook Islands (22 per cent). Interestingly, in Solomon Islands there was a 84 per cent increase from 2007 to 2011 and a more than doubling between 2004 and 2011.

There are large disparities across the Asian and Pacific region in the proportion of health spending from the private sector.

Private health expenditure as a percentage of total health expenditure varies considerably across the region and, with few exceptions, has shown little change at the individual country level in recent years. In East and North-East Asia, the rate is between 42 per cent and 45 per cent, apart from Japan with 20 per cent. Rates for countries in the Pacific range between 0 and 32 per cent. In the remaining three subregions, there are large variations, with some rates at 80 per cent or more, and others at or considerably below 38 per cent.

[1] This excludes the Democratic People's Republic of Korea, for which the latest data (2008) show a figure of $46 PPP.

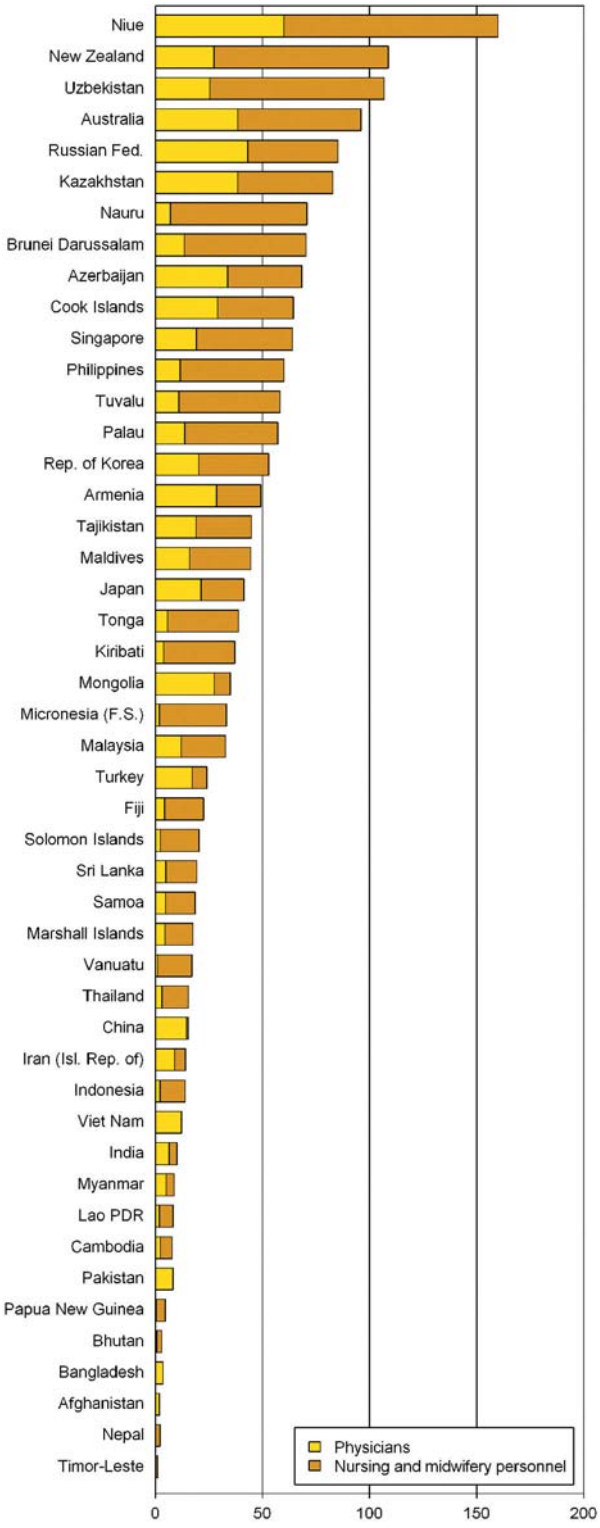
People in the Asian and Pacific region spend more on out-of-pocket health expenses than people in any other region in the world, affecting access to health-care services and potentially exacerbating health and socioeconomic inequalities.

The high percentage of out-of-pocket health expenditure in total private health expenditure is a concern in the region. It especially affects the poor and marginalized and often contributes to a vicious cycle of poverty and ill health, especially when the spending becomes catastrophic. At the regional level, the figure is 79.77 per cent (2011), having shown a very marginal fall in recent years from 80 per cent or just above that. This is higher than all other regions and significantly higher than the global figure of 60.45 per cent. At the subregional level, the rate is highest in North and Central Asia, at 89 per cent, having risen steadily from a little under 70 per cent in 1995. In South and South-West Asia, the rate is 83 per cent; yet, there has been a steady fall from 95 per cent in 1995. The rate in East and North-East Asia is 80 per cent, with little change over the years. In South-East Asia, the rate is 76 per cent, with a slow decline from about 80 per cent in the mid- to late 1990s. The Pacific, with 63 per cent, has the lowest rate in the region, but it also displays the greatest subregional variation, with several countries having rates of 100 per cent and several others having rates of about or considerably below 60 per cent.

The Asian and Pacific region is facing difficulties in deploying enough physicians, nurses, midwives and hospital beds to address people's health needs.

Health expenditure is often an important indicator of government commitment to health and social development in general. However, the success of delivering effective health care depends to a large extent on the quality of resources, and this is where human resource development in the health sector is vital. Data for the region are not comprehensive, but, from what is available, it is evident that many challenges remain in order to increase human resources for health; this is especially the case in remote and rural areas.

Figure B.6-3
Number of health workers,* latest data available



Note: * Physicians, and nursing and midwifery personnel

The number of physicians per 10,000 population is higher in countries in North and Central Asia than in countries in other subregions, with figures above 18 and as high as 43. In East and North-East Asia, the figures are in the range of 15 to 33. In the Pacific, Niue, Australia, the Cook Islands and New Zealand have the highest rates of 60, 39, 29 and 27 respectively, while in the remainder the figure is about 10 or below. Low rates of under 3 are found in South-East Asia and South and South-West Asia, such as in Afghanistan and Indonesia, both having a rate of 2.

Nursing and midwifery personnel play a vital role in maintaining health and in reducing morbidity and mortality, including infant, child and maternal mortality. Again, the numbers per 10,000 population are highest in North and Central Asia, with a range of 45 to 107, except for Georgia. The figures are also high in the Pacific, though five countries have a figure at about or below 20. China has a figure of 15 and the other countries in East and North-East Asia have a figure in the range of 35 to 53. South-East Asia and South and South-West Asia, where, apart from Brunei Darussalam, Malaysia, Maldives, the Philippines, Singapore and Turkey, the figures are at about 20 or considerably below. In fact, several countries have a figure well below 10 or even 5; these countries tend to be those with the highest levels of maternal and child mortality, which stresses the need to invest significantly more resources in this domain of health care.

A consideration of hospital beds per 10,000 population shows a picture similar to that of physicians, nursing and midwifery personnel. The highest figures are in East and North-East Asia. North and Central Asia has figures in the range of 31 to 97. The Pacific again exhibits considerable variations, with several countries over 45, and two below 20. South-East Asia and South and South-West Asia are quite similar in having a few countries with a figure above 30 and several with a figure below 10.

Box B.6.1
Progress in achieving universal health-care coverage in the Asian and Pacific region

Experiences in Asia and the Pacific, as well as beyond, show that universal health-care coverage allows for the realization of the inalienable right of every person to access health care. Universal health-care coverage has also proven to be critical in enabling the poor and marginalized to gain access to health-care services, many of which would have otherwise been unavailable or would have contributed to impoverishment.

In the region, a number of countries have achieved or are close to achieving universal health-care coverage. They include the high-income economies of Australia; Brunei Darussalam, Japan, New Zealand, the Republic of Korea and Singapore as well as Hong Kong, China. They also include the lower-middle-income economies of Mongolia and Sri Lanka, and the upper-middle-income economies of Malaysia and Thailand. In addition, China is endeavouring to achieve universal coverage over the next few years.

Malaysia, Sri Lanka and Thailand have made significant progress in expanding health-care coverage to achieve universal coverage and to contribute to successes in socioeconomic development, including the achievement of the Millennium Development Goals. In all cases, there has been political commitment at the highest level, along with pro-poor strategies, including targeting to enhance access to health-care services.[a]

Political commitment has contributed to an increased availability of financial resources for health as well as an enhanced capacity of health workers. Strategic planning, developing managerial capacity and raising awareness among Governments and populations have also played roles in ensuring greater sustainability, especially in the context of global financial uncertainty and the rising health-care costs related to ageing populations.

WHO estimates that 20 per cent to 40 per cent of all health spending is currently used inefficiently. Successful examples in the Asian and Pacific region show a move away from a reliance on direct payments, including user fees, and a greater reliance on raising funds through required prepayment and the pooling of funds. Such strategies have the greatest impact on those who are the least able to pay for health-care services and have proven to be the most efficient and equitable way of expanding health coverage to a greater percentage of the population.

In the region, where to a large extent the coverage of health-care services remains low, there is an urgent need to use the gains from economic growth for greater investments in health so that development may be more inclusive and sustainable.

[a] ESCAP. *Development of Health Systems in the Context of Enhancing Economic Growth towards Achieving the Millennium Development Goals in Asia and the Pacific*. Bangkok, 2007. ST/ESCAP/2449.

Further reading

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Technical notes

Total health expenditure (percentage of GDP, 2005 PPP dollars per capita)

Total expenditure on health is the sum of general government and private expenditure on health. Expressed as a percentage of GDP and in per capita PPP dollars. **Indicator calculations:** Per capita figures are based on population figures (WPP2012). **Aggregate calculations:** Weighted averages using current GDP in United States dollars as weight (percentage of GDP). Missing data are not imputed.

General government health expenditure (percentage of government expenditure, PPP dollars per capita)

The sum of outlays for health maintenance, restoration or enhancement paid for in cash or supplied in kind by governmental entities, such as the ministry of health, other ministries, parastatal organizations or social security agencies (without double-counting governmental transfers to social security and extrabudgetary funds). Such expenditure includes transfer payments to households to offset medical care costs and extrabudgetary funds to finance health services and goods. The revenue base of such entities may comprise multiple sources, including external funds. General government expenditure corresponds to the consolidated outlays of all levels of government: territorial authorities (central/federal Government, provincial/regional/-state/district authorities, municipal/local government), social security institutions and extrabudgetary funds, including capital outlays. **Indicator calculations:** Per capita figures are based on population figures (WPP2012).

Private health expenditure (percentage of total health expenditure)

The sum of outlays for health by private entities, such as commercial or mutual health insurance providers, non-profit institutions serving households, resident corporations and quasi-corporations not controlled by governmental authorities with health services delivery or financing, and direct household out-of-pocket payments.

Out-of-pocket health expenditure (percentage of private health expenditure, percentage of total health expenditure)

The direct outlay of households, including gratuities and payments in kind, made to health practitioners and suppliers of pharmaceuticals, therapeutic appliances and other goods and services, whose primary intent is to contribute to the restoration or to the enhancement of the health status of individuals or population groups. Such expenditure includes household payments to public services, non-profit institutions and non-governmental organizations, as well as non-reimbursable cost sharing, deductibles, co-payments and fee-for-service. It excludes payments made by companies that deliver medical and paramedical benefits, whether required by law or not, to their employees, and payments for overseas treatment. **Aggregate calculations:** Weighted averages using current GDP in United States dollars as weight. Missing data are not imputed.

Physicians and nursing and midwifery personnel (per 10,000 population)

Physicians: Physicians include generalists and specialists. **Nursing and midwifery personnel**:

Nursing and midwifery personnel include professional nurses, professional midwives, auxiliary nurses, auxiliary midwives, enrolled nurses, enrolled midwives and other personnel, such as dental nurses and primary care nurses.

Hospital beds (per 10,000 population)

In-patient hospital beds include hospital and maternity beds and exclude cots and delivery beds.

Source

Sources of resources for health data: WHO Global Health Observatory. **Expenditure data:** WHO collects national health accounts and other data from countries. National sources collected by WHO include national health accounts reports, national accounts reports, general government accounts, public expenditure reviews, government expenditure by purpose reports (Classification of the Functions of Government), institutional reports of public entities involved in health-care provision or financing, notably social security and other health insurance compulsory agencies and ministry of finance reports. The most comprehensive and consistent data on health financing are generated from national health accounts. If national health accounts data are not available, WHO estimates are based on technical contacts in-country and publicly available documents and reports that are adjusted to the national health accounts framework. WHO sends estimates to the respective ministry of health every year for validation. **Medical personnel and hospital bed data:** WHO collects data from countries. Data collected include population censuses, labour force and employment surveys, health facility assessments and routine administrative information systems reports (on public expenditure, staffing and payroll, as well as professional training, registration and licensure). Most of the data from administrative sources are derived from published national health sector reviews and/or official country reports to WHO offices. **Data obtained:** 28 August 2013.

B.6.1 Total and government health expenditure

	Total health expenditure							General government health expenditure					
	% of GDP				2005 PPP dollars per capita			% of government expenditure			2005 PPP dollars per capita		
	2005	2009	2010	2011	2005	2010	2011	2005	2010	2011	2005	2010	2011
East and North-East Asia	**6.9**	**7.3**	**7.0**	**7.1**									
China	4.7	5.1	5.0	5.2	191	374	432	9.9	12.1	12.5	74	203	242
DPR Korea								6.0			42		
Hong Kong, China													
Japan	8.2	9.5	9.2	9.3	2 491	3 120	3 174	18.3	18.2	18.2	2 032	2 506	2 540
Macao, China													
Mongolia	5.3	5.8	5.5	5.3	151	221	251	10.5	8.6	6.8	76	126	144
Republic of Korea	5.7	6.9	7.1	7.2	1 291	2 035	2 181	11.3	13.7	13.7	683	1 185	1 250
South-East Asia	**3.5**	**4.0**	**3.8**	**3.7**									
Brunei Darussalam	2.6	3.0	2.9	2.5	1 278	1 503	1 296	6.9	8.8	8.8	1 076	1 284	1 102
Cambodia	7.0	6.3	6.0	5.7	105	132	135	11.6	6.1	6.3	23	28	30
Indonesia	2.8	2.9	2.8	2.7	88	123	127	5.0	6.2	5.3	28	44	43
Lao PDR	4.3	3.6	2.6	2.8	73	67	78	4.1	5.4	6.1	12	31	38
Malaysia	3.6	4.6	4.4	3.6	411	645	559	7.7	9.2	6.1	214	358	255
Myanmar	2.1	2.1	2.0	2.0	20	26	28	1.0	1.3	1.3	2	3	4
Philippines	3.5	4.2	4.1	4.1	107	164	169	8.1	8.8	8.5	42	59	56
Singapore	4.0	5.1	4.5	4.6	1 814	2 592	2 787	7.0	9.0	8.8	466	813	865
Thailand	3.5	4.2	3.9	4.1	237	331	353	12.4	14.3	14.5	153	248	267
Timor-Leste	10.2	6.9	5.7	5.1	98	84	82	38.3	5.0	2.9	84	63	59
Viet Nam	5.9	7.0	6.8	6.8	125	216	231	5.2	7.7	9.4	33	80	93
South and South-West Asia	**4.6**	**4.8**	**4.6**	**4.7**									
Afghanistan	6.4	8.0	10.4	9.6	20	52	51	1.1	3.9	3.3	2	12	8
Bangladesh	3.2	3.7	3.7	3.7	37	61	67	7.5	8.9	8.9	13	22	25
Bhutan	4.3	4.6	4.3	4.1	151	226	236	9.0	8.4	7.9	112	192	198
India	4.2	3.9	3.7	3.9	94	126	141	6.8	6.8	8.1	21	36	44
Iran (Islamic Rep. of)	5.8	5.8	5.3	6.0	599	797	929	8.8	10.1	10.1	228	320	369
Maldives	7.0	7.9	6.2	8.5	373	510	760	9.4	9.3	9.3	221	310	338
Nepal	6.2	5.5	5.1	5.4	59	61	68	13.3	9.5	9.6	19	23	27
Pakistan	2.8	2.9	2.8	2.5	60	75	69	3.1	3.4	3.6	16	21	19
Sri Lanka	4.1	3.5	3.5	3.4	145	175	191	8.0	6.9	7.2	67	80	85
Turkey	5.4	6.7	6.7	6.7	621	1 039	1 161	11.3	12.8	12.8	421	777	870
North and Central Asia	**5.2**	**6.0**	**6.2**	**5.9**									
Armenia	4.9	4.6	4.5	4.3	199	240	250	6.8	6.4	5.8	61	97	89
Azerbaijan	7.9	5.9	5.3	5.2	346	520	523	5.2	4.2	3.7	39	114	112
Georgia	8.6	10.2	10.2	9.9	302	524	564	6.2	6.9	6.9	58	124	125
Kazakhstan	4.1	4.5	4.3	3.9	353	528	534	9.3	11.4	10.5	219	312	309
Kyrgyzstan	5.8	6.8	6.7	6.5	103	152	161	11.9	11.9	11.6	42	85	96
Russian Federation	5.2	6.2	6.5	6.2	615	1 277	1 316	11.7	9.7	10.1	381	749	786
Tajikistan	4.8	5.9	6.0	5.8	73	129	135	5.9	5.9	6.2	17	34	40
Turkmenistan	3.0	2.4	2.5	2.7	141	219	251	10.3	9.8	9.8	96	132	153
Uzbekistan	4.9	5.7	5.6	5.4	98	177	190	7.3	8.5	8.5	46	87	97
Pacific	**8.4**	**9.1**	**9.1**	**9.1**									
American Samoa													
Australia	8.5	9.0	9.0	9.0	2 958	3 685	3 692	16.7	16.8	16.8	1 979	2 525	2 529
Cook Islands	4.7	4.3	4.6	5.5	367	404	495	13.2	11.9	14.3	346	375	458
Fiji	3.6	4.3	4.2	3.8	156	194	183	10.7	10.8	9.1	127	136	125
French Polynesia													
Guam													
Kiribati	9.8	12.2	10.7	10.1	229	262	255	8.9	10.0	10.0	216	213	204
Marshall Islands	16.0	18.9	17.1	16.5	311	374	384	15.5	17.0	18.3	257	314	319
Micronesia (F.S.)	12.1	13.3	13.6	13.4	370	453	462	19.1	18.6	19.8	345	413	419
Nauru	13.0	10.0	9.6	9.8	320	220	240	18.5	10.3	9.9	287	190	208
New Caledonia													
New Zealand	8.4	10.0	10.1	10.1	2 117	2 992	3 033	17.7	19.8	19.8	1 687	2 490	2 524
Niue	12.9	17.5	16.2	14.6	2 034	3 200	3 163	11.3	20.3	17.6	2 015	3 176	3 136
Northern Mariana Islands													
Palau	10.9	10.8	11.5	10.6	1 410	1 605	1 600	15.9	16.0	16.0	1 078	1 222	1 196
Papua New Guinea	4.0	4.2	4.1	4.3	75	101	115	8.0	9.8	12.8	57	76	91
Samoa	5.0	5.4	6.3	7.0	190	275	321	15.4	23.4	25.1	154	241	286
Solomon Islands	7.8	7.9	7.4	8.8	162	200	260	28.5	20.3	25.5	153	187	246
Tonga	6.5	4.6	5.0	5.3	270	226	245	16.9	13.0	15.8	235	184	205
Tuvalu	17.6	13.3	14.5	17.3	415	384	469	18.4	18.1	18.0	415	383	468
Vanuatu	3.3	5.1	5.2	4.1	114	230	191	12.9	17.2	15.0	83	207	168
Asia and the Pacific	**6.3**	**6.6**	**6.4**	**6.4**									
Developed countries	8.2	9.4	9.2	9.3									
Developing countries	4.7	5.1	5.0	5.1									
LLDC	4.8	5.0	4.9	4.6									
LDC	4.0	4.1	4.2	4.1									
ASEAN	3.5	4.0	3.8	3.6									
ECO	5.1	5.7	5.6	5.6									
SAARC	4.0	3.8	3.7	3.8									
Central Asia	4.8	5.1	4.8	4.6									
Pacific island dev. econ.	4.7	5.0	4.9	4.9									
Low income econ.	3.9	4.2	4.3	4.2									
Lower middle income econ.	3.9	3.8	3.6	3.7									
Upper middle income econ.	4.8	5.4	5.3	5.4									
High income econ.	7.8	9.0	8.8	8.9									
Africa	**5.9**	**6.2**	**5.9**	**5.9**									
Europe	**9.5**	**10.4**	**10.3**	**10.1**									
Latin America and Carib.	**6.9**	**7.8**	**7.7**	**7.6**									
North America	**15.3**	**17.1**	**17.0**	**17.2**									
World	**10.0**	**10.6**	**10.2**	**10.1**									

B.6.2 Private health expenditure and health resources

	Private health expenditure			Out-of-pocket health expenditure			Physicians	Nursing and midwifery personnel	Hospital beds
	% of total health expenditure			% of private health expenditure			Per 10,000 population		
	2005	2010	2011	1995	2005	2011	Latest	Latest	Latest
East and North-East Asia				**81.0**	**83.8**	**80.0**			
China	61.2	45.7	44.1	93.7	85.3	78.8	15 (10)	15 (10)	42 (09)
DPR Korea							33 (03)		132 (02)
Hong Kong, China									
Japan	18.4	19.7	20.0	78.9	83.6	82.0	21 (08)	41 (06)	137 (09)
Macao, China									
Mongolia	49.9	43.0	42.7	66.3	93.6	93.1	28 (08)	35 (08)	58 (10)
Republic of Korea	47.1	41.8	42.7	84.4	80.5	77.1	20 (10)	53 (08)	103 (09)
South-East Asia				**67.4**	**80.7**	**76.2**			
Brunei Darussalam	15.8	14.6	15.0	98.9	98.9	98.9	14 (10)	70 (10)	26 (09)
Cambodia	78.0	78.5	77.6	82.7	77.3	73.4	2 (08)	8 (08)	
Indonesia	67.7	63.9	65.9	72.4	79.6	75.7	2 (12)	14 (12)	6 (10)
Lao PDR	82.9	53.5	50.7	89.0	75.2	78.2	2 (09)	8 (09)	7 (10)
Malaysia	48.0	44.5	54.3	70.2	75.5	76.8	12 (10)	33 (10)	18 (10)
Myanmar	91.0	87.9	87.0	99.9	99.6	92.7	5 (10)	9 (10)	6 (06)
Philippines	60.8	63.9	66.7	82.7	80.9	83.9	12 (04)	60 (04)	5 (09)
Singapore	74.3	68.6	69.0	0.0	89.0	87.6	19 (10)	64 (10)	31 (08)
Thailand	35.6	25.0	24.5	80.4	76.5	55.8	3 (04)	15 (04)	21 (10)
Timor-Leste	14.0	25.3	28.5		13.9	14.2	1 (04)		59 (10)
Viet Nam	73.6	62.9	59.6	95.1	91.9	93.3	12 (08)	10 (08)	31 (09)
South and South-West Asia				**95.1**	**84.2**	**83.3**			
Afghanistan	90.8	77.5	84.4		94.0	94.0	2 (10)	1 (10)	4 (10)
Bangladesh	65.1	63.5	63.4	95.9	96.2	96.6	4 (11)	2 (11)	3 (05)
Bhutan	25.7	15.4	16.1	100.0	97.8	94.7	1 (08)	3 (08)	18 (11)
India	77.9	71.8	69.0	91.4	90.3	86.0	7 (09)	10 (08)	9 (05)
Iran (Islamic Rep. of)	61.5	59.8	60.3	97.0	89.2	97.0	9 (05)	14 (05)	17 (09)
Maldives	40.8	39.2	55.6	36.9	73.4	88.3	16 (07)	44 (07)	43 (09)
Nepal	67.3	62.6	60.7	94.6	72.7	90.4	2 (04)		50 (06)
Pakistan	73.2	71.8	73.0	97.7	81.4	86.3	8 (09)	6 (09)	6 (10)
Sri Lanka	53.8	54.4	55.4	85.9	82.5	83.0	5 (06)	19 (07)	31 (04)
Turkey	32.2	25.2	25.1	100.0	70.8	64.4	17 (11)	24 (11)	25 (09)
North and Central Asia				**68.1**	**84.3**	**89.0**			
Armenia	69.6	59.5	64.2	95.5	95.7	89.4	28 (11)	49 (11)	37 (09)
Azerbaijan	88.8	78.1	78.5	87.3	92.7	89.3	34 (11)	68 (11)	75 (09)
Georgia	80.8	76.4	77.9	100.0	95.0	89.2	42 (11)	2 (11)	31 (09)
Kazakhstan	38.0	40.9	42.1	98.6	98.6	98.7	38 (11)	83 (09)	76 (09)
Kyrgyzstan	59.1	44.3	40.3	92.6	94.7	85.3	25 (11)		51 (07)
Russian Federation	38.0	41.3	40.3	64.7	82.4	87.9	43 (06)	85 (06)	97 (06)
Tajikistan	76.4	73.3	70.4	99.2	96.5	85.4	19 (11)	45 (11)	52 (09)
Turkmenistan	31.6	39.6	39.2	100.0	100.0	100.0			40 (09)
Uzbekistan	53.2	51.0	48.6	98.1	90.2	90.2	25 (10)	107 (10)	46 (09)
Pacific				**50.4**	**57.9**	**62.9**			
American Samoa									
Australia	33.1	31.5	31.5	47.0	56.2	63.0	39 (10)	96 (09)	38 (09)
Cook Islands	5.7	7.1	7.5	100.0	100.0	100.0	29 (09)	64 (09)	63 (05)
Fiji	18.6	29.8	31.9	63.5	63.5	65.8	4 (09)	22 (09)	21 (09)
French Polynesia									
Guam									
Kiribati	5.9	18.8	20.0	1.8	2.2	6.5	4 (10)	37 (10)	14 (10)
Marshall Islands	17.2	16.2	16.7	75.2	75.2	75.2	4 (10)	17 (10)	27 (10)
Micronesia (F.S.)	6.6	8.7	9.2	100.0	96.5	97.5	2 (09)	33 (09)	32 (09)
Nauru	10.4	13.6	13.3	58.4	58.4	58.4	7 (10)	71 (09)	50 (10)
New Caledonia									
New Zealand	20.3	16.8	16.8	70.7	69.2	62.6	27 (10)	109 (07)	23 (11)
Niue	1.0	0.8	0.8	100.0	100.0	100.0	60 (08)	160 (08)	52 (06)
Northern Mariana Islands									
Palau	23.5	23.9	25.3	81.3	53.0	45.8	14 (10)	57 (10)	48 (10)
Papua New Guinea	23.5	24.8	21.0	46.3	55.9	55.9	1 (08)	5 (08)	
Samoa	18.7	12.4	11.0	84.6	68.5	63.8	5 (08)	19 (08)	10 (05)
Solomon Islands	5.9	6.2	5.2	55.9	56.7	56.7	2 (09)	21 (09)	
Tonga	12.9	18.7	16.4	77.5	62.3	67.8	6 (10)	39 (10)	26 (10)
Tuvalu	0.1	0.1	0.1	100.0	100.0	100.0	11 (09)	58 (08)	56 (01)
Vanuatu	27.1	9.8	12.1	71.6	71.6	56.7	1 (08)	17 (08)	17 (08)
Asia and the Pacific				**79.1**	**81.7**	**79.8**			
Developed countries				76.6	79.5	77.8			
Developing countries				83.4	83.6	80.7			
LLDC				96.0	94.5	94.5			
LDC				94.9	90.7	90.5			
ASEAN				67.4	80.9	76.3			
ECO				98.7	79.4	81.9			
SAARC				92.5	89.4	86.5			
Central Asia				97.6	96.6	94.9			
Pacific island dev. econ.				55.8	61.0	59.3			
Low income econ.				95.6	93.2	93.0			
Lower middle income econ.				85.6	86.5	83.4			
Upper middle income econ.				85.7	82.8	79.8			
High income econ.				76.3	79.8	78.0			
Africa				**67.2**	**72.1**	**70.7**			
Europe				**65.2**	**62.1**	**63.4**			
Latin America and Carib.				**76.2**	**77.4**	**71.1**			
North America				**28.8**	**25.8**	**23.8**			
World				**60.5**	**57.7**	**60.4**			

C.1. Participation in education

Education is not only a fundamental right but also one of the most basic ways people can achieve well-being. It increases lifetime earnings, as well as how much a person can engage with and contribute to society. Better-educated individuals tend to be healthier and to live longer. A workforce with the right skills is critical to the success of an economy. Investing in education brings individuals and societies enormous benefits socially, environmentally and economically. To realize these benefits, children and adolescents must have access to education, starting with pre-primary education.

Almost half of all children in the Asian and Pacific region do not receive pre-primary education.

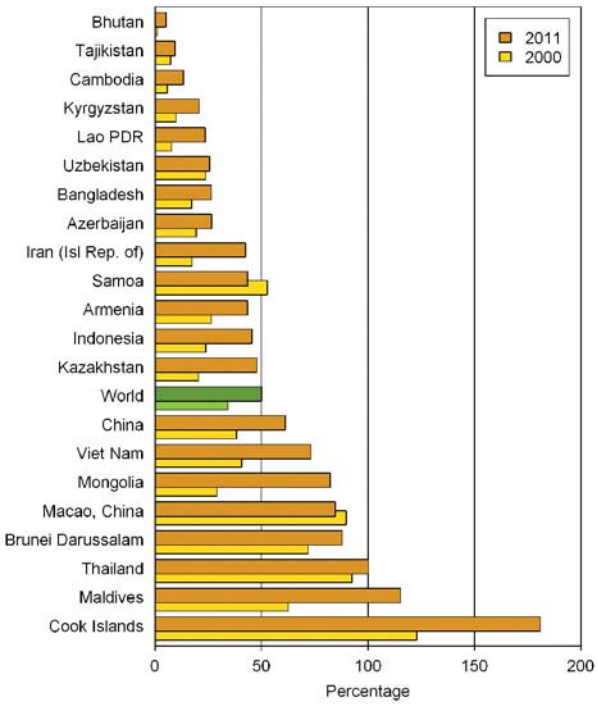
Early childhood, defined as the period from birth to age 8, is a time of remarkable brain growth. Pre-primary programmes that attend to health, nutrition, security and learning, and provide for children's holistic development are critical for laying the foundation for children's subsequent learning and development. Opportunities for pre-primary education vary widely across Asia and the Pacific. In the countries with recent data, of which there are just under 40, enrolment in pre-primary education was less than 50 per cent in about half. Pre-primary enrolment was as low as 9 per cent in Bhutan and Tajikistan. For the rest of the countries, the rate ranged from slightly above 50 per cent, for example 51.3 in the Philippines, 52.7 in Kazakhstan and 54.8 in India, to over 100 per cent in the Cook Islands, Maldives, the Republic of Korea and Thailand.

Enrolment in pre-primary education in Asia and the Pacific has increased significantly over the last 10 years, with the rate doubling or more in many countries in South and South-West Asia. Other countries that experienced the doubling of pre-primary enrolment rates include Cambodia, Indonesia, the Lao People's Democratic Republic, Kazakhstan, Kyrgyzstan, Mongolia and the Philippines. Despite this progress, as many as 50 per cent or more of young children in about half of the countries in the region still do not receive pre-primary education.

It is important to have pre-primary education as the platform upon which future learning is built, and it is recommend that countries expand and improve the provision of pre-primary education. To this end, significant progress has been made by several countries in the region, including the Islamic Republic of Iran, Kazakhstan, the Lao People's Democratic Republic and Mongolia. Although even after a rapid increase, pre-primary education in the Lao People's Democratic Republic still reached only about 20 per cent of the target population in 2011. In Viet Nam, there has also been rapid and expansive improvement in the provision of pre-primary education, with more than 70 per cent of children enrolled in 2011.

Other countries in the region, however, have not performed as well. For example, enrolment in pre-primary education in Uzbekistan has increased only marginally since 2001, and in Bhutan, Cambodia, Myanmar and Tajikistan, gross enrolment is below 15 per cent. Samoa and Macao, China, are two places where the pre-primary enrolment rate declined between 2000 and 2011.

Figure C.1-1
Gross enrolment in pre-primary education, Asia and the Pacific, 2000 and 2011

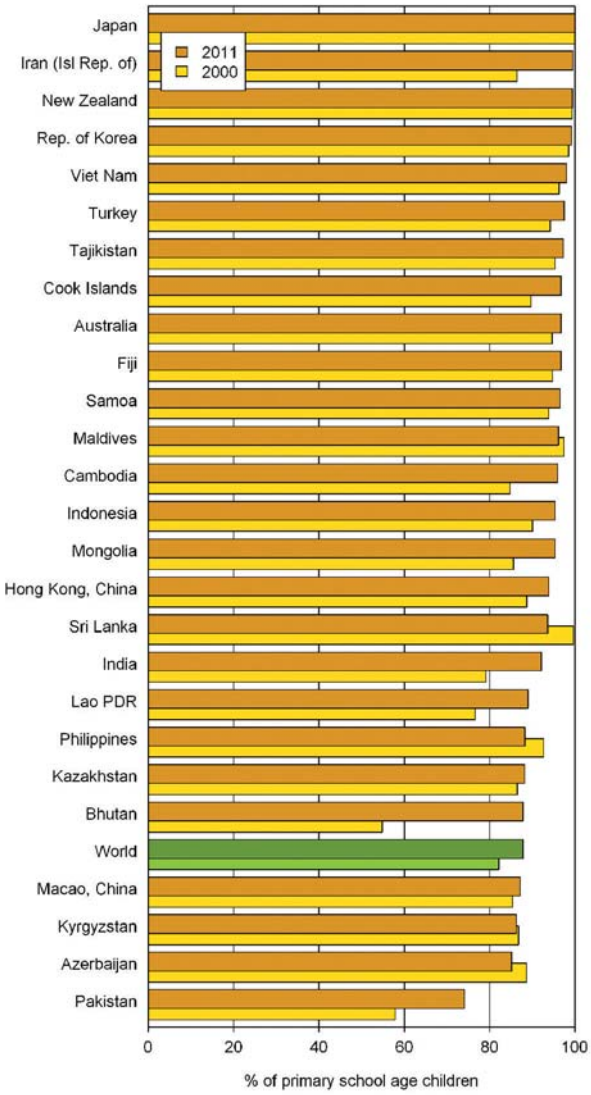


Despite overall high levels of enrolment in the Asian and Pacific region, access to primary school remains unavailable to as many as one out of every four children of primary school age in least developed countries and landlocked developing countries.

Achieving the goal of universal primary education for all[1] by 2015 requires 100 per cent of children of primary school age to have access to primary education and to be enrolled. In the Asian and Pacific region, approximately 95 per cent of the targeted population were enrolled in primary school in 2011, which is comparable to levels in Latin America and the Caribbean (95 per cent) and North America (96 per cent), higher than the level in Africa (80 per cent) but lower than that in Europe (98 per cent). Within the Asian and Pacific region, net enrolment rates for primary education ranged from close to 87 per cent in the Pacific to 93 per cent in South and South-West Asia to 98 per cent in East and North-East Asia. Overall, the challenge to provide access to primary schooling seems the greatest in the least developed countries and landlocked developing countries, where the overall net primary enrolment rate is estimated to be 74 per cent. In other words, one out of every four children of primary school age in these countries in the region is not enrolled in primary school.

The region has made substantial strides in improving access to primary education, raising the net primary enrolment rate from less than 88 per cent in 2000 to almost 95 per cent in 2011. Progress is particularly visible in South and South-West Asia, where the net primary enrolment rate increased from 79 per cent in 2000 to 93 per cent in 2011. In Bhutan and India, net enrolment rates increased from respectively 59 per cent and 83 per cent in 2000 to 89 per cent and 99 per cent in 2011. Other countries in Asia and the Pacific that made notable progress between 2000 and 2011 include Cambodia (92 per cent to 98 per cent), the Islamic Republic of Iran (86 per cent to almost 100 per cent), Kazakhstan (94 per cent to almost 100 per cent), the Lao People's Democratic Republic (78 per cent to 97 per cent), Mongolia (92 per cent to 99 per cent) and Pakistan (58 per cent to 72 per cent).

Figure C.1-2
Net enrolment rates in primary education, selected Asian and Pacific countries and areas, 2000 and 2011



Note: Data for 2000 include observations of 1999 and 2001 when data for 2000 are missing. Data for 2011 include observations of 2010 when data for 2011 are missing.

[1] The goal of universal primary education is to ensure that, by 2015, all children, particularly girls, children in difficult circumstances and those belonging to ethnic minorities, have access to and complete free and compulsory primary education of good quality.

Box C.1-1
Out-of-school children

Progress in reducing the number of out-of-school children

The number of children of primary school age worldwide who are not in school has remained at about 61 million over the last three years. This stagnation is largely due to trends in sub-Saharan Africa, where the number of primary school age children who were out of school increased from 29 million in 2008 to 31 million in 2010 due to the population increasing faster than the primary school enrolment rate.

In recent decades, the number of out-of-school children in the Asian and Pacific region has decreased from over 51 million to about 20 million. The most significant progress occurred in South and West Asia,[a] where the number of out-of-school children fell by two thirds, from 39 million in 1990 to 13 million in 2010.

Pakistan has the largest number of out-of-school children (5.4 million in 2011, of which more than 60 per cent were female) followed by India (1.7 million in 2010, of which more than half were female).

Have these children ever been to school? What are their chances of enrolling in the future?

Of the children in the Asian and Pacific region who are currently out of school, about half will never enter school, more than one fifth are likely to enter school in the future, and one third have left school early.

Gender, geography and socioeconomic status: Which children are out of school?

An analysis of countries around the world (for which data are available) shows that:

- Girls are more likely than boys to be out of school
- Rural children are twice as likely as urban children to be out of school
- Children from the poorest quintile (of household wealth) are four times more likely to be out of school than children from the richest quintile.

Whom to target, where to target and how to target: Designing effective policies to deliver education for all requires information and data on out-of-school children

The problem of out-of-school children can be addressed with broader policies to address social exclusion and marginalization. In 2009, UNICEF and the UNESCO Institute for Statistics launched a global initiative on out-of-school children to accomplish the following:

(a) To improve information and the statistical analysis of data on out-of-school children and develop complex profiles of these children that reflect the multiple deprivations and disparities they face in relation to education;

(b) To analyse existing interventions related to enhanced school participation, identify bottlenecks, and develop context-appropriate policies and strategies for increasing the enrolment and attendance of excluded and marginalized children.

This initiative is designed to support countries worldwide in providing all children with not only access to primary education but also the support they need to stay in school and to learn.

[a] In this case, the subregion of South and West Asia comprises Afghanistan, Bangladesh, Bhutan, India, the Islamic Republic of Iran, Maldives, Nepal, Pakistan and Sri Lanka.

For every 10 children of eligible age in Asia and the Pacific, 6 are enrolled in secondary education, compared with fewer than 5 a decade ago.

Enrolment in secondary education has continued to increase in the region in recent years. Between 1999 and 2011, enrolment increased by 14 percentage points to over 60 per cent. In South-East Asia, the increase was even greater, with net enrolment in secondary education reaching 65 per cent in 2011 compared with 48 per cent in 1999.

Although these trends are encouraging, there are large differences in access between countries. For example, Brunei Darussalam, Japan, Kazakhstan, New Zealand and the Republic of Korea report enrolment rates close to or above 90 per cent, while in contrast, the Lao People's Democratic Republic, Pakistan, Solomon Islands and Timor-Leste have enrolment rates below 45 per cent.

Regional averages also reflect relatively low rates of enrolment in secondary education overall compared with net enrolment in primary education. Only 6 in every 10 eligible students in the region were enrolled in secondary

education in 2010, compared with more than 9 in every 10 primary school-aged students.

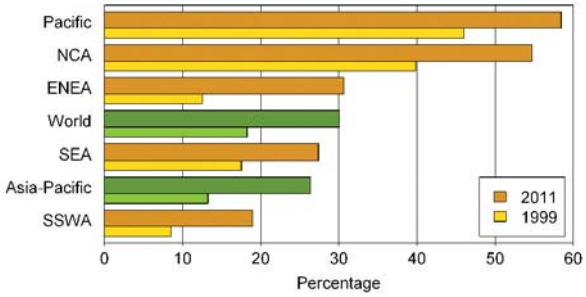
Tertiary enrolment rate reached 31 per cent in East and North-East Asia, which led the region in rapid expansion of tertiary education.

Enrolment in tertiary education has increased significantly in the Asian and Pacific region in the last decade, from a gross enrolment rate of 13 per cent in 1999 to over 26 per cent in 2011. This trend appears to be continuing most prominently in East and North-East Asia, where gross enrolment rates increased from 13 per cent in 1999 to over 30 per cent in 2011.

There are large differences in tertiary enrolment rates across countries in the region. For example, 2011 data reveal that, of the countries for which data have been reported, three (Bhutan, Pakistan and Uzbekistan) have gross enrolment rates of less than 10 per cent. By contrast, Australia, New Zealand and the Republic of Korea reported rates of about 80 per cent in 2010.

Levels of participation in tertiary education are higher in wealthier countries. For 2011, high-income economies reported gross enrolment rates of about 74 per cent, while rates for upper-middle-income, lower-middle-income and low-income economies were 34 per cent, 19 per cent and 15 per cent, respectively.

Figure C.1-3
Gross enrolment in tertiary education, subregional weighted averages, 1999 and 2011



Source: United Nations Educational, Scientific and Cultural Organization, *Education for All Global Monitoring Report 2011: The Hidden Crisis – Armed Conflict and Education* (Paris, 2011).

The increasing numbers of tertiary students in each country reflect growth in both domestic and international students, and the patterns of where students choose to study in the region are changing over time. In general, more students are choosing to study overseas and many of them are choosing to study in countries within the region rather than in traditional destination countries such as the United States and the United Kingdom of Great Britain and Northern Ireland.

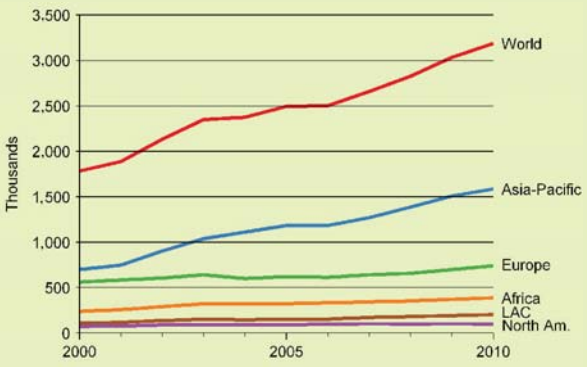
Box C.1-2
Mobility of international students in the Asian and Pacific region

In 2010, almost 3 million tertiary students around the world chose to study in a country other than their own, which is almost double the number from 10 years before. All regions of the world have been sending more students overseas for tertiary study, but the most significant growth has been in the Asian and Pacific region. In 2011, more than half of all international students came from countries in the region (see figure A).

In 2011, within the Asian and Pacific region, China sent the greatest number of tertiary students overseas (accounting for 46 per cent of the region's total), followed by India, the Republic of Korea and Malaysia.

The rapid growth in the number of international students in the region is due to several possible factors. First, gross enrolment in tertiary education has increased faster than the global average over the decade (13 per

Figure A. Total number of international students by source region, 2000-2011

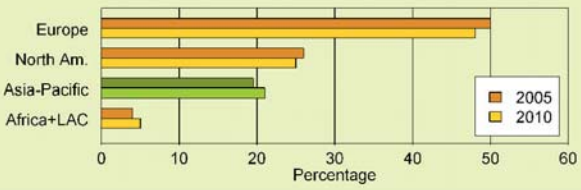


Source: UNESCO Institute for Statistics, Date Centre. Available from http://stats.uis.unesco.org/unesco/tableviewer/document.aspx?ReportId=143.

cent in the region compared with 12 per cent worldwide). Second, some Governments in the region have implemented policies to encourage students to move overseas to study, such as Campus Asia and the ASEAN International Mobility for Students Program.[a, b] The Global 30 project in Japan seeks to encourage students from other countries to study at Japanese universities, including by offering courses in English and by providing access to scholarships.[c] Universities in the region have also actively sought to raise their profiles as desirable international destinations to study, including by designing high quality courses that reflect current areas of interest for students.

Australia, China, Japan and Malaysia were the most popular destinations in 2010. The Republic of Korea and Thailand also recorded high growth rates in the enrolment of international students, especially for students from Europe and North America (see figure B).

Figure B. Share of total international students by destination, 2005 and 2010



Note: Data for Austria, Brazil and Malaysia are for 2004, data for China are for 2006, and data for Bangladesh, Canada and the Russian Federation are for 2009.
Source: UNESCO Institute for Statistics, Date Centre. Available from http://stats.uis.unesco.org/unesco/tableviewer/document.aspx?ReportId=143.

[a] The ASEAN International Mobility for Students Program promotes student mobility between universities in ASEAN countries. Available from http://74.220.213.127/rihed/programmes/aims/ (accessed 7 May 2013).
[b] Ka Ho Mok, "Questing for internationalization of universities in East Asia: critical reflections", paper presented at the International Symposium at Osaka University, Japan, 13 and 14 January, 2006. Available from https://gcn-osaka.jp/project/finalreport/6E/6-4-3e_paper.pdf.
[c] Other examples include the "211" and "985" projects in China, the "Brain Korea 21" project in the Republic of Korea and the "21st Century Center of Excellence" in Japan. See Akiyoshi Yonezawa, "The internationalization of Japanese higher education: policy debates and realities", in *Higher Education in the Asia-Pacific*, Simon Marginson, Sarjit Kaur and Erlenawati Sawir, eds. (Stringer, 2007).

On average, the Asian and Pacific region has achieved gender parity at the primary school level. There are disparities, however, at the secondary and tertiary levels.

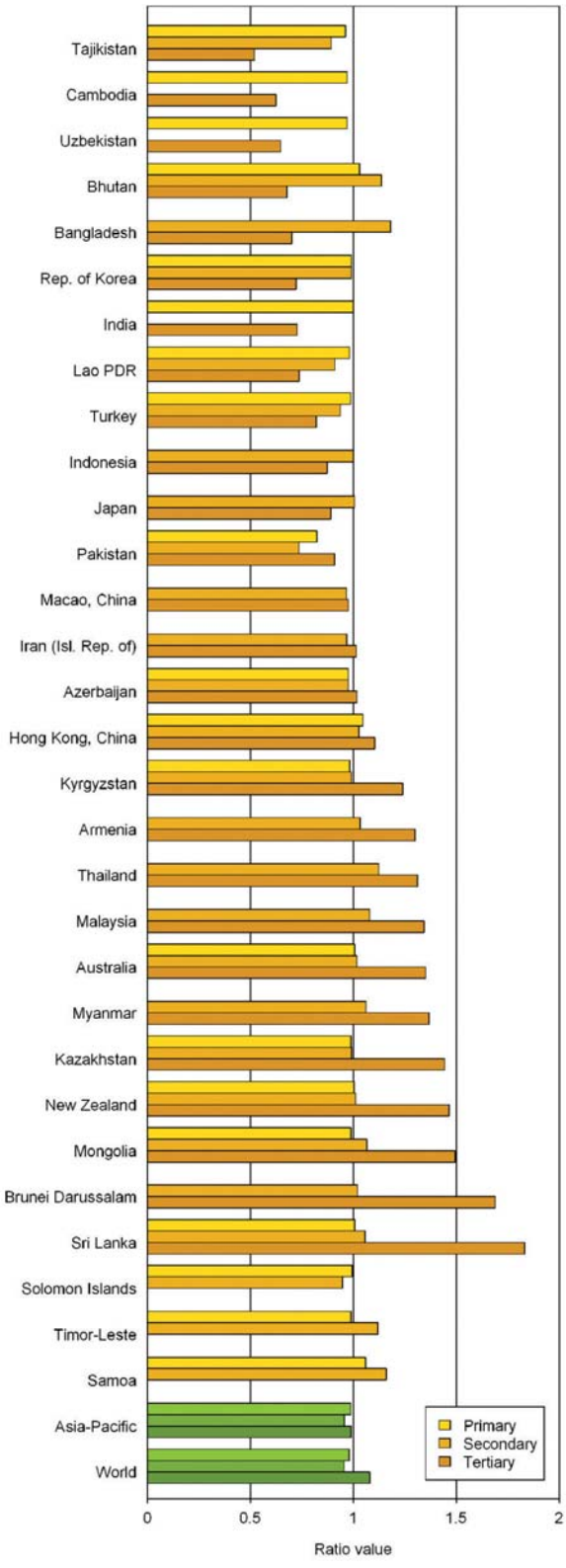
The gender parity index (GPI) is used to assess the degree of gender disparities at primary, secondary and tertiary levels in terms of net enrolment ratios. In this context, a GPI value of less than 1 shows that the net enrolment rate for boys is higher than the net enrolment rate for girls, and vice versa for a GPI value of more than 1. A GPI value of between 0.97 and 1.03 is generally considered to reflect gender parity.

In 2011, almost all countries in the region for which primary net enrolment data by gender were available reached gender parity except Tajikistan, and most notably, Pakistan.

Gender disparities are larger and more widespread throughout the region for secondary net enrolment. Relatively more boys than girls are enrolled in secondary education in Pakistan, Tajikistan and the Lao People's Democratic Republic, where the GPI value for secondary education is 0.74, 0.89 and 0.91, respectively. The opposite is true in Bangladesh, Bhutan, the Cook Islands, Fiji, Mongolia, Samoa, Sri Lanka, Thailand and Timor-Leste, which have GPI values between 1.06 and 1.18.

At the tertiary level, gender disparities are reflected in differences between gross enrolment rates by gender, and these differences show that gender disparities are more extreme at the tertiary level, but they are not always in favour of males. At one extreme are countries where the enrolment rates for females are far lower than those for males, resulting in GPI values far below the parity level of 1. These countries include Tajikistan (0.52), Cambodia (0.62), Bhutan (0.68) and Bangladesh (0.70). At the other extreme are countries where the enrolment rates for females far exceed those for males, resulting in GPI values that are much higher than the parity level of 1. These countries include Sri Lanka (1.83), Brunei Darussalam (1.69), Mongolia (1.49) and Kazakhstan (1.44).

Figure C.1-4
Gender parity index for enrolment in primary, secondary and tertiary education, Asia and the Pacific, 2010 or 2011

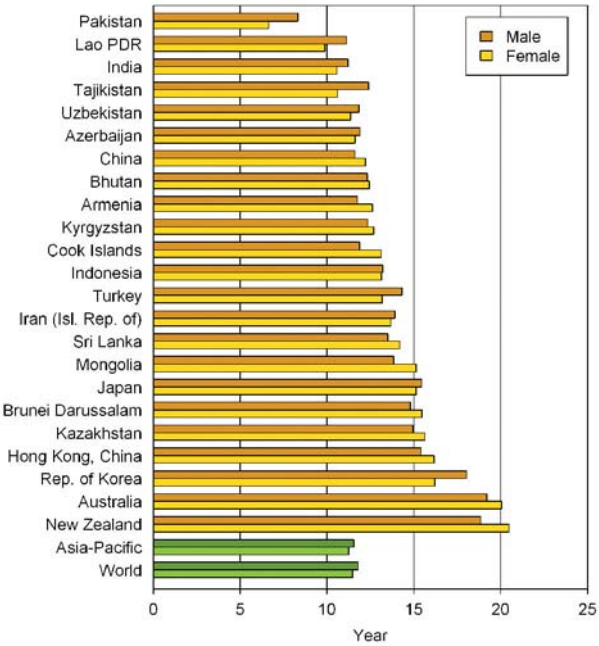


Note: Net enrolment rates are used to calculate the gender parity index for primary and secondary education. Gross enrolment rates are used for tertiary education.

The expected duration of education in Asia and the Pacific has been increasing, although children and youth have very different schooling opportunities across countries.

In 2000, a typical girl at the age of starting primary school in the region could expect to have a total of less than 9 years of schooling by the time she reached the age of completing tertiary education. By 2011, this number had increased to over 11. The increase for a typical boy was from less than 10 years to almost 12 years. Mongolia had one of the largest increases, where the expected duration of education for girls increased from about 10 years in 2001 to over 15 years in 2011 and from less than 9 to almost 14 for boys. Other countries in the region have also experienced significant increases in the expected duration of education, including Cambodia, Indonesia, Kazakhstan and the Lao People's Democratic Republic. In Indonesia, males and females receive almost the same number of years of schooling, while in Mongolia and Kazakhstan females are expected to receive on average 1.3 and 0.7 years more than boys,

Figure C.1-5
Expected duration of education from primary to tertiary, Asia and the Pacific, 2010 or 2011



respectively. In Cambodia and the Lao People's Democratic Republic, males receive about 1 year more education than females, although this disparity has decreased from about 1.5 years' difference in 2001.

Despite significant improvement in some countries, there is still a gap between the countries providing the longest duration of education. For instance, males and females in Australia and New Zealand could expect to receive at least 19 years of schooling in 2010. In contrast their counterparts in Pakistan and the Lao People's Democratic Republic could expect to have no more than 11 years as recently as in 2011.

Further reading

UNESCO. *Education for All Global Monitoring Report 2012: Youth and Skills – Putting Education to Work.* Paris, 2012. Available from www.unesco.org/new/en/education/themes/leading-the-international-agenda/efareport/.

_____. *From Access to Equality: Empowering Girls and Women through Literacy and Secondary Education.* Paris, 2012. Available from www.uis.unesco.org/Library/Pages/DocumentMorePage.aspx?docIdValue=687&docIdFld=ID.

UNESCO Institute for Statistics. *Global Education Digest 2012: Opportunities Lost – The Impact of Grade Repetition and Early School Leaving.* Montreal, Canada, 2012. Available from www.uis.unesco.org/Library/Pages/DocumentMorePage.aspx?docIdValue=718&docIdFld=ID.

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UNESCO Institute for Statistics and Centre for Universal Education at the Brookings Institution. *Toward Universal Learning: What Every Child Should Learn.* 2013. Available from www.uis.unesco.org/Education/Documents/lmtf-rpt1-toward-univrsl-learning.pdf.

Technical notes

Gross enrolment in pre-primary education (percentage of the population in the relevant official age group)

Total number of children enrolled in early childhood care and education programmes, regardless of age, expressed as a percentage of the population in the relevant official age group.

Net enrolment in primary and secondary education (percentage of primary or secondary school age children)

Enrolment of the official age group for primary or secondary education expressed as a percentage of primary or secondary school age population. **Aggregate calculations:** UNESCO Institute for Statistics (UIS).

Gross enrolment in tertiary education (percentage of tertiary school age population)

Total enrolment in tertiary education, regardless of age, expressed as a percentage of the eligible official school age population corresponding to tertiary education in a given school year. For the tertiary level, the population used is the five age cohorts immediately following the official secondary school graduation age. **Aggregate calculations:** UIS.

GPI: net primary enrolment, net secondary enrolment and gross tertiary enrolment (female-to-male ratio)

The ratio of female-to-male enrolment ratios for each level of education. **Aggregate calculations:** UIS.

Expected duration of education, primary to tertiary, female and male (years)

The number of years a 4-year-old girl or boy can be expected to spend in education from the primary to the tertiary level, including years spent in repetition. Data are disaggregated by sex. **Aggregate calculations:** UIS.

Sources

Source of participation in education data (except gross enrolment in pre-primary education): UIS. Collected from school registers, school surveys or censuses for data on enrolment by age or level of education, population censuses or estimates for school age population. **Data obtained:** May and June 2013.

Source of gross enrolment in pre-primary education data: UIS Data Centre. Collected from school registers, school surveys or censuses, population censuses or estimates for school age population. **Data obtained:** 12 July 2013.

C.1.1 Primary, secondary, and tertiary education

	Gross enrolment in pre-primary education			Net enrolment in primary education			Net enrolment in secondary education			Gross enrolment in tertiary education		
	Percentage			% of primary school age children			% of secondary school age children			% of tertiary school age population		
	Earliest	2005	Latest	2000	2005	Latest	1999	2005	Latest	1999	2005	Latest
East and North-East Asia				**96.6**	**96.6**	**98.1 (11)**	**60.9**	**68.2**	**76.9 (11)**	**12.6**	**24.0**	**30.7 (11)**
China	38.3 (00)		61.2 (11)							6.7	19.4	26.8 (11)
DPR Korea												
Hong Kong, China		89.1			96.1	97.2 (11)		75.0	72.6 (11)		32.5	60.4 (11)
Japan	84.5 (00)	88.1	87.7 (10)	100.0	100.0	100.0 (10)	99.1	99.4	99.5 (10)	46.6	55.4	59.7 (10)
Macao, China	89.8 (00)	83.9	84.7 (11)	86.0	88.7	87.3 (08)	65.4	77.0	78.3 (11)	27.5	60.2	67.8 (11)
Mongolia	29.1 (00)	44.2	82.1 (11)	91.8	90.8	98.8 (11)	58.2	81.9	76.4 (11)	26.9	44.7	57.2 (11)
Republic of Korea		118.9	118.9 (10)	99.8	99.4	98.9 (10)	96.4	95.7	96.0 (10)	74.2	93.5	103.1 (10)
South-East Asia				**92.7**	**92.9**	**95.6 (11)**	**47.9**	**55.5**	**65.2 (11)**	**17.5**	**20.5**	**27.4 (11)**
Brunei Darussalam	72.0 (00)	87.6	87.9 (11)					90.9	99.0 (11)	12.2	16.9	19.6 (11)
Cambodia	6.0 (00)	10.6	13.3 (11)	91.6		98.2 (11)	14.0	24.8	37.6 (08)		3.4	14.5 (11)
Indonesia	23.9 (00)	33.3	45.5 (11)	94.0	95.1	99.0 (11)		56.0	74.4 (11)		16.5	24.9 (11)
Lao PDR	7.8 (00)	9.5	23.6 (11)	78.1	82.6	97.4 (11)	26.2	36.1	40.7 (11)	2.4	7.9	17.7 (11)
Malaysia	51.4 (00)	57.0	68.6 (10)	97.8	95.9		66.1	69.9	68.6 (10)	22.7	29.3	42.3 (10)
Myanmar		10.2	10.2 (10)				32.5	43.7	50.8 (10)			14.8 (11)
Philippines	25.6 (00)	37.6	51.3 (09)		89.8	88.7 (09)	49.8	59.3	61.6 (09)	28.4	27.5	28.2 (09)
Singapore												
Thailand	92.5 (00)	94.4	101.3 (12)			89.7 (09)			74.1 (11)	32.7	43.9	47.7 (11)
Timor-Leste		10.1			66.8	90.9 (11)			38.7 (11)			16.7 (09)
Viet Nam	40.8 (00)		73.0 (11)	97.0	91.6	99.4 (11)				11.0	15.7	24.4 (11)
South and South-West Asia				**79.0**	**90.4**	**93.1 (11)**	**40.2**	**47.5**	**52.1 (08)**	**8.6**	**11.1**	**18.9 (11)**
Afghanistan									24.1 (07)			3.3 (09)
Bangladesh	17.3 (00)	11.4	26.4 (11)				43.7	42.8	46.6 (11)	5.6	6.2	13.6 (11)
Bhutan	1.2 (00)	1.5	9.1 (12)	58.5	73.8	89.3 (11)	16.6	35.0	53.8 (11)	2.5	4.7	8.8 (11)
India	23.8 (00)	39.0	54.8 (10)	83.5		98.6 (10)					10.8	17.9 (10)
Iran (Islamic Rep. of)	17.4 (00)	46.1	42.6 (11)	85.7	96.7	99.9 (11)			81.2 (11)	19.1	23.2	48.6 (11)
Maldives	62.7 (00)	81.6	115.2 (11)	98.6	97.9	94.6 (11)	30.3					13.0 (08)
Nepal	11.9 (00)			71.1							6.9	7.3 (06)
Pakistan	62.6 (00)	49.2			65.3	72.1 (11)		29.1	34.6 (11)		4.7	8.3 (11)
Sri Lanka		84.4	84.4 (11)		99.8	93.0 (11)			88.2 (11)			14.3 (11)
Turkey	6.3 (00)	11.2	26.4 (10)	96.0	96.6	98.9 (10)	55.8	74.6	78.9 (10)	23.1	31.9	55.4 (10)
North and Central Asia				**93.5**	**93.8**	**95.1 (11)**				**39.8**	**54.7**	**54.7 (11)**
Armenia	26.5 (00)	31.5	43.5 (11)		88.2			84.0	86.3 (10)	23.6	28.3	48.9 (11)
Azerbaijan	19.3 (00)	25.4	26.6 (11)	88.2	84.0	87.3 (11)			86.1 (11)	15.7	14.5	19.6 (11)
Georgia	37.3 (00)	57.0			90.5	98.4 (11)	76.3	76.1	79.4 (09)	35.8	46.6	30.0 (11)
Kazakhstan	20.4 (00)	34.0	52.7 (12)	94.0	98.5	99.5 (11)		88.7	89.6 (11)	24.4	52.7	40.8 (11)
Kyrgyzstan	9.8 (00)	13.2	20.8 (11)	92.3	95.5	96.1 (11)		80.9	80.4 (11)	29.2	42.5	41.3 (11)
Russian Federation	74.5 (00)	86.6	89.9 (09)			95.7 (09)				51.4	72.2	75.9 (09)
Tajikistan	7.3 (00)	9.0	9.3 (11)	96.1	97.6	97.6 (11)	63.2	80.3	86.0 (11)	17.2	22.2	23.4 (11)
Turkmenistan												
Uzbekistan	23.8 (00)	26.7	25.6 (11)			92.8 (11)				12.9	9.8	8.9 (11)
Pacific				**88.9**	**85.5**	**86.5 (11)**	**70.5**	**67.6**	**66.3 (11)**	**46.0**	**51.8**	**58.5 (11)**
American Samoa												
Australia	103.5 (01)	101.1	78.4 (10)	94.5	95.2	97.2 (10)		85.1	85.5 (10)	65.8	72.1	79.9 (10)
Cook Islands	123.0 (00)	167.7	180.8 (11)	94.3		98.4 (10)	59.0	76.0	77.7 (11)			
Fiji	10.9 (00)		17.8 (09)	94.7		99.0 (11)	75.7		84.2 (11)		16.1	61.8 (11)
French Polynesia												
Guam												
Kiribati				99.0				68.6				
Marshall Islands	50.7 (01)		45.6 (11)			99.4 (11)			62.2 (07)			
Micronesia (F.S.)										14.0		
Nauru	74.3 (00)	100.6										
New Caledonia												
New Zealand	85.6 (00)	91.9	93.1 (10)	99.0	99.1	99.5 (10)			94.7 (10)	64.9	80.6	82.6 (10)
Niue	109.7 (01)	93.9					93.4					
Northern Mariana Islands												
Palau	58.7 (00)											
Papua New Guinea										1.9		
Samoa	52.8 (00)		43.5 (11)	92.2		93.4 (11)	71.9		76.3 (11)	11.6		
Solomon Islands	35.8 (00)		49.4 (10)		77.0	87.5 (10)	23.8		42.7 (10)			
Tonga	28.7 (00)				98.8		74.4			3.5		
Tuvalu	95.8 (01)	91.0										
Vanuatu	52.5 (01)	74.7	58.7 (10)	99.3	98.9		29.7		47.4 (10)	3.9		
Asia and the Pacific				**87.7**	**92.8**	**94.9 (11)**	**50.3**	**57.0**	**63.9 (11)**	**13.3**	**19.5**	**26.4 (11)**
Developed countries												
Developing countries												
LLDC				66.4		73.8 (11)		62.1	63.3 (08)	11.9	15.9	17.1 (11)
LDC				70.8	81.9	83.2 (11)	35.7	39.0	45.5 (11)	5.6	6.6	12.6 (11)
ASEAN				92.7	93.0	95.6 (11)	47.9	55.5	65.2 (11)	17.5	20.5	27.4 (11)
ECO				69.4	76.4	79.9 (11)	47.6	52.7	57.5 (11)	12.1	16.0	24.7 (11)
SAARC				78.0	89.9	92.7 (11)	37.6	45.3	50.1 (08)	7.3	9.4	15.9 (11)
Central Asia				94.6	94.5	94.5 (11)	78.2	87.7	89.8 (11)	19.5	25.5	23.2 (11)
Pacific island dev. econ.										3.8		
Low income econ.				72.4	83.0	83.8 (11)	38.6	42.4	48.6 (11)	7.3	9.0	15.0 (11)
Lower middle income econ.				83.6	91.9	95.0 (11)	40.6	49.0	54.1 (08)	9.9	12.2	18.5 (11)
Upper middle income econ.				95.5	96.2	97.5 (11)	61.6	68.0	76.1 (11)	13.7	26.1	34.1 (11)
High income econ.				98.7	98.8	99.0 (11)	95.7	94.8	94.8 (11)	54.8	66.2	74.2 (11)
Africa				**64.4**	**74.0**	**79.5 (11)**	**27.1**	**31.8**	**32.7 (07)**	**7.5**	**9.4**	**10.9 (11)**
Europe				**97.7**	**97.8**	**98.0 (11)**	**86.5**	**89.3**	**91.1 (11)**	**47.4**	**58.6**	**64.2 (11)**
Latin America and Carib.				**94.2**	**95.7**	**95.3 (11)**	**64.4**	**71.9**	**76.1 (11)**	**21.4**	**30.9**	**42.3 (11)**
North America				**97.3**	**95.4**	**96.1 (11)**	**87.3**	**90.7**	**89.3 (11)**	**71.6**	**80.0**	**91.4 (11)**
World	**34.3 (00)**	**40.0**	**50.2 (11)**	**84.5**	**89.2**	**91.2 (11)**	**52.1**	**57.7**	**62.7 (11)**	**18.3**	**24.1**	**30.1 (11)**

C.1.2 Gender disparity in education

	Gender parity index									Expected duration of education, primary to tertiary			
	Net primary enrolment			Net secondary enrolment			Gross tertiary enrolment			Female		Male	
	Female-to-male ratio									Years			
	2000	2005	Latest	2000	2005	Latest	2000	2005	Latest	2000	Latest	2000	Latest
East and North-East Asia	**1.00**	**1.00**	**1.00 (11)**	**0.95**	**1.02**	**1.04 (11)**	**0.74**	**0.88**	**1.07 (11)**	**10.3**	**12.5 (11)**	**10.6**	**12.0 (11)**
China								0.91	1.13 (11)		12.2 (11)		11.6 (11)
DPR Korea													
Hong Kong, China		0.98	1.05 (11)		1.00	1.03 (11)		0.99	1.10 (11)		16.2 (11)		15.4 (11)
Japan						1.00 (10)	0.85	0.89	0.89 (10)	14.5	15.1 (10)	14.8	15.5 (10)
Macao, China	1.04	1.00	1.02 (08)	1.07	1.07	0.97 (11)	0.91	0.70	0.97 (11)	12.5	13.8 (08)	12.9	14.4 (08)
Mongolia	1.01	1.00	0.99 (11)	1.22	1.11	1.06 (11)	1.76	1.62	1.49 (11)	10.2	15.1 (11)	8.5	13.8 (11)
Republic of Korea	1.01	0.99	0.99 (10)	1.00	0.99	0.99 (10)	0.61	0.65	0.72 (10)	15.0	16.2 (10)	16.8	18.0 (10)
South-East Asia	**0.98**	**0.98**	**1.01 (11)**	**1.00**	**1.04**	**1.04 (11)**	**1.03**	**1.00**	**1.06 (11)**	**10.2**	**12.2 (11)**	**10.4**	**12.1 (11)**
Brunei Darussalam					1.04	1.02 (11)	1.77	2.01	1.69 (11)	14.0	15.5 (11)	13.5	14.8 (11)
Cambodia	0.89		0.97 (11)	0.56	0.84	0.91 (08)	0.33	0.46	0.62 (11)	6.7	9.9 (08)	8.3	11.2 (08)
Indonesia	0.97	0.97		0.95	0.99	1.00 (11)	0.88		0.87 (11)	10.1	13.1 (11)	10.5	13.2 (11)
Lao PDR	0.92	0.94	0.98 (11)	0.79	0.85	0.91 (11)	0.53	0.71	0.74 (11)	7.2	9.9 (11)	9.2	11.1 (11)
Malaysia	1.00	1.00		1.09	1.10	1.08 (10)	1.06	1.30	1.34 (10)	12.2		11.7	
Myanmar				1.06	0.98	1.06 (10)			1.37 (11)				
Philippines		1.03	1.02 (09)		1.21	1.19 (09)		1.23	1.24 (09)		11.5 (09)		11.1 (09)
Singapore													
Thailand			0.99 (09)			1.12 (11)	1.20	1.14	1.31 (11)		12.7 (09)		11.9 (09)
Timor-Leste		0.96	0.99 (11)			1.12 (11)			0.70 (09)		11.2 (09)		12.2 (09)
Viet Nam							0.72	0.71	1.01 (11)				
South and South-West Asia	**0.84**	**0.95**	**0.97 (11)**	**0.78**	**0.86**	**0.88 (08)**	**0.67**	**0.75**	**0.78 (11)**	**7.2**	**10.1 (11)**	**9.0**	**10.9 (11)**
Afghanistan						0.38 (07)			0.24 (09)		6.1 (09)		10.1 (09)
Bangladesh				1.03	1.08	1.18 (11)	0.49	0.53	0.70 (11)				
Bhutan	0.90	1.00	1.03 (11)	1.00	1.00	1.14 (11)		0.67	0.68 (11)		12.4 (11)		12.3 (11)
India	0.84		1.00 (10)				0.66	0.71	0.73 (10)	7.2	10.5 (10)	9.3	11.2 (10)
Iran (Islamic Rep. of)	0.97	0.98				0.97 (11)	0.86	1.06	1.01 (11)	11.3	13.7 (11)	12.4	13.9 (11)
Maldives	1.01	1.01	1.01 (11)	1.16					1.13 (08)	12.2		12.1	
Nepal	0.82						0.40	0.62	0.60 (06)	7.5		10.0	
Pakistan		0.75	0.82 (11)		0.76	0.74 (11)		0.85	0.91 (11)		6.6 (11)		8.3 (11)
Sri Lanka			1.01 (11)			1.06 (11)			1.83 (11)		14.2 (11)		13.5 (11)
Turkey	0.92	0.96	0.99 (10)	0.79	0.86	0.94 (10)		0.74	0.82 (10)		13.2 (10)		14.3 (10)
North and Central Asia	**0.99**	**0.99**	**0.99 (11)**				**1.23**	**1.30**	**1.29 (11)**	**11.8**	**13.6 (11)**	**11.5**	**13.2 (11)**
Armenia		1.04	1.03 (07)		1.03	1.03 (10)	1.08	1.22	1.30 (11)		12.6 (10)		11.7 (10)
Azerbaijan	0.99	0.94	0.97 (11)			0.97 (11)	0.71	0.87	1.02 (11)		11.6 (11)		11.9 (11)
Georgia		0.98	0.98 (07)	1.00	0.98	0.95 (08)	0.95	1.03	1.20 (11)	11.7	12.8 (08)	11.7	12.7 (08)
Kazakhstan	1.01	1.00	0.99 (11)	1.03	0.99	0.99 (11)	1.18	1.43	1.44 (11)	12.6	15.6 (11)	12.0	14.9 (11)
Kyrgyzstan	0.98	0.99	0.98 (11)		1.00	0.99 (11)	1.01	1.24	1.24 (11)	11.9	12.7 (11)	11.6	12.3 (11)
Russian Federation			1.00 (09)					1.37	1.35 (09)		14.8 (09)		13.8 (09)
Tajikistan	0.93	0.96	0.96 (11)	0.87	0.85	0.89 (11)	0.45	0.47	0.52 (11)	8.9	10.6 (11)	10.7	12.4 (11)
Turkmenistan													
Uzbekistan			0.97 (11)				0.83	0.70	0.65 (11)	10.6	11.4 (11)	10.9	11.8 (11)
Pacific	**0.98**	**0.97**	**0.97 (11)**	**1.03**	**1.03**	**1.03 (11)**	**1.26**	**1.28**	**1.35 (11)**	**15.0**	**14.5 (11)**	**14.8**	**14.1 (11)**
American Samoa													
Australia	1.01	1.01	1.01 (10)		1.03	1.02 (10)	1.23	1.25	1.35 (10)	20.7	20.0 (10)	20.1	19.2 (10)
Cook Islands	1.02			1.14	1.12	1.18 (11)				11.9	13.1 (11)	11.1	11.9 (11)
Fiji	1.00		1.00 (09)	1.11		1.09 (11)		1.19					
French Polynesia													
Guam													
Kiribati					1.11					10.8	12.4 (08)	10.0	11.6 (08)
Marshall Islands						1.06 (07)							
Micronesia (F.S.)													
Nauru										9.9	9.9 (08)	7.8	8.9 (08)
New Caledonia													
New Zealand	1.00	0.99	1.00 (10)			1.01 (10)	1.46	1.45	1.46 (10)	18.2	20.5 (10)	16.6	18.8 (10)
Niue													
Northern Mariana Islands													
Palau							2.35			14.6		12.9	
Papua New Guinea													
Samoa	1.01		1.06 (11)	1.14		1.16 (11)	0.93			12.4		11.8	
Solomon Islands		0.98	1.00 (10)	0.82		0.95 (10)				6.5	8.9 (07)	7.2	9.6 (07)
Tonga				1.12									
Tuvalu													
Vanuatu				1.14		1.05 (10)				10.1		10.1	
Asia and the Pacific	**0.93**	**0.97**	**0.99 (11)**	**0.89**	**0.95**	**0.96 (11)**	**0.85**	**0.93**	**0.99 (11)**	**8.8**	**11.3 (11)**	**9.9**	**11.5 (11)**
Developed countries													
Developing countries													
LLDC	0.83		0.86 (11)	0.96	0.93	0.89 (08)	0.89	1.03	0.97 (11)	7.6	9.7 (11)	8.8	11.4 (11)
LDC	0.91	0.97	0.96 (11)	0.98	0.99	0.98 (11)	0.74	0.73	0.78 (11)	7.1	8.4 (08)	7.8	9.1 (08)
ASEAN	0.98	0.98	1.01 (11)	1.00	1.04	1.04 (11)	1.03	1.00	1.06 (11)	10.2	12.2 (11)	10.4	12.1 (11)
ECO	0.81	0.85	0.89 (11)	0.88	0.89	0.85 (11)	0.81	0.92	0.93 (11)	7.1	9.4 (11)	8.8	10.9 (11)
SAARC	0.83	0.95	0.97 (11)	0.75	0.85	0.87 (08)	0.65	0.70	0.74 (11)	6.9	9.9 (11)	8.8	10.7 (11)
Central Asia	0.99	0.98	0.98 (11)	1.00	0.97	0.97 (11)	0.92	1.06	1.06 (11)	10.9	12.4 (11)	11.1	12.6 (11)
Pacific island dev. econ.							0.84						
Low income econ.	0.92	0.97	0.96 (11)	0.98	0.99	0.98 (11)	0.77	0.79	0.83 (11)	7.4	8.7 (08)	8.1	9.4 (08)
Lower middle income econ.	0.87	0.95	0.99 (11)	0.79	0.88	0.90 (08)	0.78	0.80	0.82 (11)	7.7	10.6 (11)	9.4	11.2 (11)
Upper middle income econ.	1.00	1.00	1.00 (11)	0.96	1.01	1.03 (11)	0.96	1.04	1.16 (11)	10.2	12.6 (11)	10.5	12.1 (11)
High income econ.	1.00	1.00	1.00 (11)	1.01	1.00	1.00 (11)	0.80	0.84	0.89 (11)	15.3	16.2 (11)	15.9	16.6 (11)
Africa	**0.89**	**0.92**	**0.95 (11)**	**0.82**		**0.82 (07)**	**0.74**	**0.78**	**0.78 (11)**	**6.8**	**9.0 (11)**	**8.1**	**10.1 (11)**
Europe	**1.00**	**1.00**	**1.00 (11)**	**1.02**	**1.01**	**1.01 (11)**	**1.18**	**1.24**	**1.26 (11)**	**15.3**	**16.3 (11)**	**14.9**	**15.7 (11)**
Latin America and Carib.	**0.98**	**1.00**	**1.00 (11)**	**1.05**	**1.06**	**1.06 (11)**	**1.18**	**1.20**	**1.27 (11)**	**12.7**	**14.1 (11)**	**12.4**	**13.5 (11)**
North America	**1.00**	**1.02**	**1.00 (11)**	**1.02**	**1.02**	**1.01 (11)**	**1.33**	**1.42**	**1.40 (11)**	**16.0**	**17.5 (11)**	**15.0**	**15.9 (11)**
World	**0.93**	**0.97**	**0.98 (11)**	**0.92**	**0.96**	**0.96 (11)**	**1.00**	**1.05**	**1.08 (11)**	**9.4**	**11.5 (11)**	**10.2**	**11.8 (11)**

C.2. Staying in school and learning to read

Despite great progress having been made across the region in expanding access to education, many challenges remain for individuals, communities and societies to reap the many benefits of education. Large numbers of adolescents do not attend school. Even in countries where overall enrolment is high, there are significant numbers of students who leave school early. Many children of primary school age are not learning the basics of reading, writing and arithmetic and are entering adulthood with insufficient literacy skills. Plenty of room remains for improving the quality of learning and people's abilities to apply knowledge.

In Asia and the Pacific, only 3 out of every 4 children who start primary school are likely to reach the last grade of primary school, indicating the potential for improving the efficiency of school systems in the region.

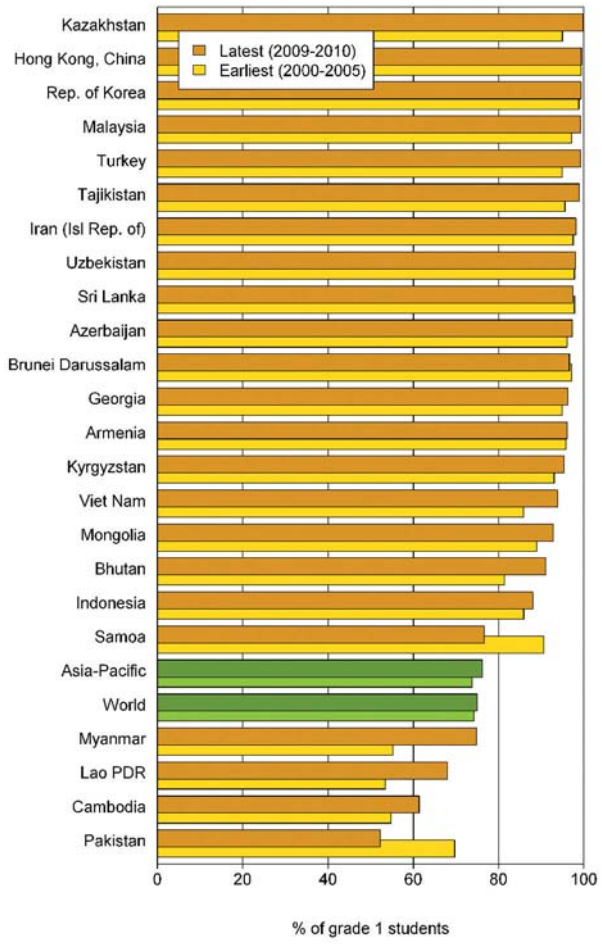
Once children enter school, it is important to provide them with sufficient and high-quality support so that all can achieve the curricular objectives on time, in which case the entire cohort can progress to higher grades and complete primary school. If students do not receive high-quality instruction and do not meet the required learning targets, they are likely to repeat grade levels. Students are also likely to drop out and leave school due to poor instructional quality or for personal and family reasons. In the latter case, not all children enrolled in the first grade of primary school will reach, or survive to, the last grade. Lower survival rates indicate a lower efficiency in school systems and a waste of learning opportunities.

In 2010, as many as 76 per cent of children in Asia and the Pacific starting the first grade of primary school are expected to reach the last grade. The survival rate of 76 per cent indicates the great potential for raising the efficiency of primary school systems in the region by improving the quality of school and classroom instruction, promoting timely grade progression and eliminating school dropout. The improvement in the survival rate from the level of 74 per cent in 2000 still represents a sizeable waste of learning opportunities for many children.

Across the region, the survival rate stands at 95 per cent in East and North-East Asia, and 97 per cent in North and Central Asia. However, the rate is estimated to be significantly lower, at 81 per cent, in South-East Asia and even as low as 65 per cent in South and South-West Asia, which is only slightly higher than the level in Africa (62 per cent).

In many countries in Asia and the Pacific, the survival rate to the last grade of primary school increased over the last decade, reflecting improvements in the quality of primary schooling. Such increases are particularly visible in Bhutan (82 per cent in 1999 to 91 per cent in 2010), Cambodia (55 per cent in 2000 to

Figure C.2-1
Education survival rate to the last grade of primary, Asia and the Pacific



61 per cent in 2010), the Lao People's Democratic Republic (55 per cent in 1999 to 68 per cent in 2010), Myanmar (55 per cent in 2000 to 75 per cent in 2009) and Viet Nam (83 per cent in 1999 to 94 per cent in 2010) (see figure C.2-1).

Despite such improvements, rates of survival to the last grade of primary school remain at 80 per cent or lower in several countries, indicating the potential for reducing waste and increasing efficiency. These countries include Pakistan (52 per cent), Cambodia (61 per cent), Bangladesh (66 per cent), the Lao People's Democratic Republic (68 per cent), Myanmar (75 per cent), and Samoa (77 per cent).

Youth literacy rates have increased rapidly in the last decade, largely due to more students enrolling and staying in school.

In many countries in the region, literacy rates among youths (individuals aged 15-24 years) were about 95 per cent or even higher at the beginning of the last decade. The ability of the vast majority of young people to read and write with comprehension a short, simple statement about their everyday lives, as well as to make simple arithmetic calculations, reflects the success of efforts of these countries to widen schooling opportunities.

At the same time, several countries with lower literacy rates also made noticeable gains over the decade. In Bangladesh, for example, the literacy rate for females aged 15-24 years increased from 60 per cent in 2001 to 80 per cent in 2011, and from 67 per cent to 77 per cent for males over the same period. Substantial progress in raising the literacy rates of both the young female population and the young male population also occurred in Nepal, Pakistan and Papua New Guinea.

Literacy rates among the adult population (individuals 15 years of age or older) stood at 63 per cent for females and 79 per cent for males in the period 1985-1994. By the period 2005-2011, the rates for adults increased to 78 per cent for females and 89 per cent for males. Such increases largely result from improvements in youth literacy rates, as well as the success of adult literacy programmes.

Progress in raising the literacy rate of the population was also visible in South and South-West Asia, the subregion with the lowest literacy rate. The adult literacy rate for women increased from 35 per cent in the period 1985-1994 to 54 per cent in the period 2005-2011, which was a substantial increase, but this figure is still low and similar to that of Africa. The rate for adult males was 75 per cent in the period 2005-2011, which had increased from 60 per cent in the period 1985-1994.

In countries and subregions with lower literacy rates, gender differences favouring males can be significant. In contrast, gender differences are much less marked when the overall literacy rates are high (see figure C.2-2).

While improved access to schooling is an important factor in increasing literacy rates, schooling does not guarantee literacy in all cases. For some young people, even six years of education is insufficient to build literacy skills.[1] Therefore, higher enrolment and retention rates do not on their own guarantee continuing improvements in youth literacy rates. Rather, they must be coupled with commitments to high-quality education that includes supporting all students, especially those from disadvantaged backgrounds, to achieve learning outcomes.[2]

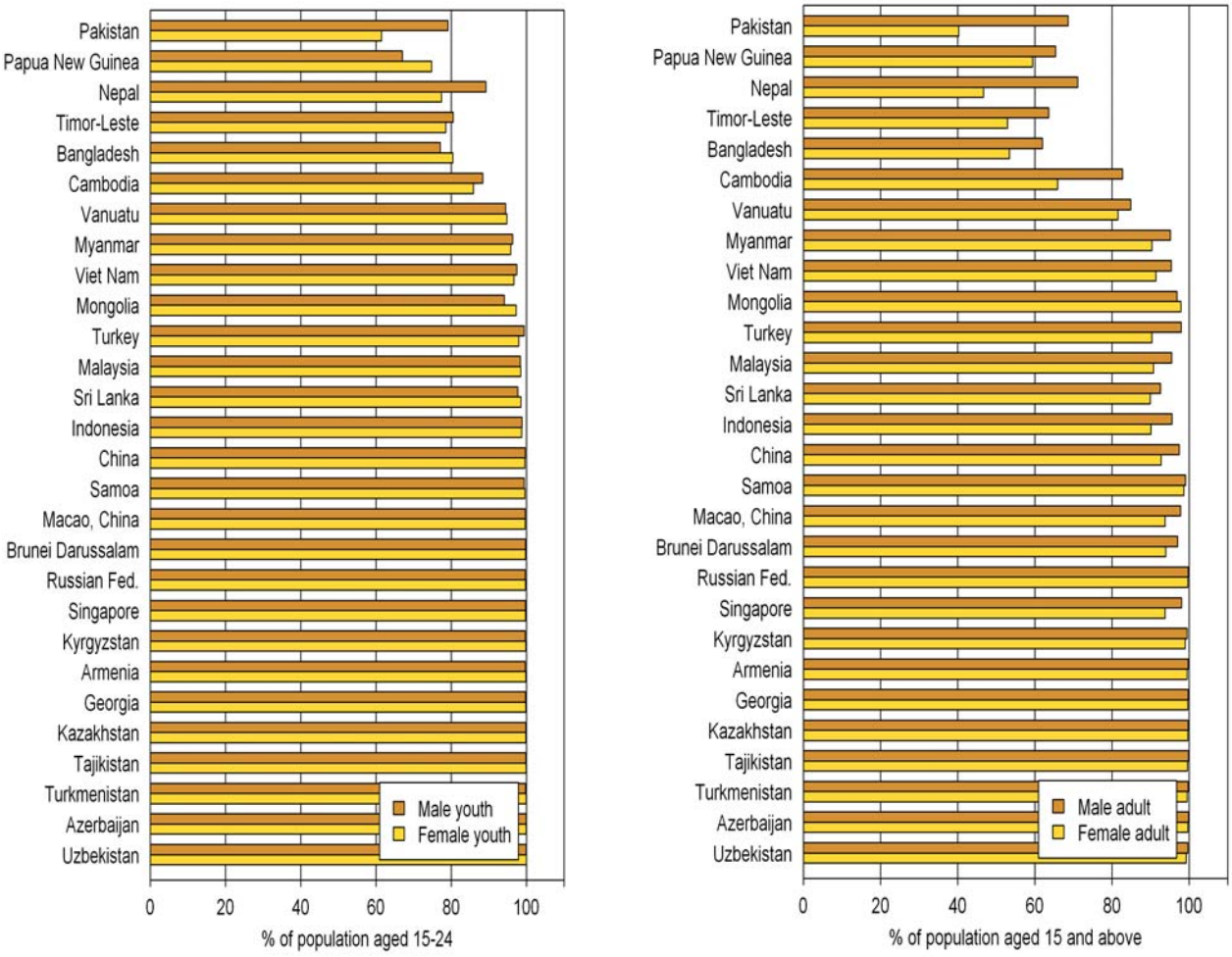
Large variations in adult literacy rates remain across countries in Asia and the Pacific.

In the decade from 2000 to 2011, adult literacy rates (of those countries for which data exist) increased across the globe. In the Asian and Pacific region, adult literacy in Timor-Leste has improved the most, increasing from 38 per cent in 2001 to 58 per cent in 2010. Other countries that have made significant progress in the last

[1] United Nations Educational, Scientific and Cultural Organization, *Education for All Global Monitoring Report 2012: Youth and Skills – Putting Education to Work* (Paris, 2012), p. 96.

[2] Ibid., p. 97.

Figure C.2-2
Male and female youth and adult literacy rates, Asia and the Pacific, latest year (2009-2011)



decade include Bangladesh and Nepal, where adult literacy rates increased by 10 and 9 percentage points, respectively. However, the rates themselves in these countries remain low, at approximately 57 per cent each. Most of the countries with the highest recorded adult literacy rates in the region are in North and Central Asia, including Armenia, Georgia, the Russian Federation, Tajikistan, Turkmenistan and Uzbekistan, where adult literacy rates are above 99 per cent in 2011.

While literacy rates have been increasing in recent years, the number of illiterate individuals has remained largely unchanged.

In the period 1995-2004, the number of illiterate individuals worldwide was 791 million, which declined to 782 million in the period 2005-2011. As many as 501 million adults lacking basic literacy skills, or 64 per cent of the world total, resided in Asia and the Pacific in the period 2005-2011.

Women have been consistently overrepresented in the illiterate population at both the global and the regional levels. Worldwide, the number of women lacking basic literacy skills was estimated to be 499 million, or 64 per cent of the total population lacking basic literacy skills, during the period 2005-2011. As many as 326 million women in Asia and the Pacific were estimated to lack basic literacy skills, or 65 per cent of the total adult illiterate population in the region. The region accounts for 65 per cent of total illiterate women worldwide.

The large population base, combined with inadequate schooling opportunities contributed to the large number of the illiterate population

being from the region. India (287 million) has the greatest number of illiterate adults of any country in the world, and four other countries in the region each have more than 10 million illiterate adults: China (52 million), Pakistan (50 million), Bangladesh (44 million) and Indonesia (13 million). Between 1 million and 8 million illiterate adults live in Cambodia, the Islamic Republic of Iran, Malaysia, Myanmar, Nepal, Papua New Guinea, the Philippines, Sri Lanka, Turkey and Viet Nam.

These aggregate numbers of illiterate adults in each country, however, do not reflect the distribution of illiteracy among different groups within the population. Within countries, high levels of disparity in rates of illiteracy can exist. Generally, higher rates of illiteracy are correlated with disadvantage, which is linked to characteristics including gender, poverty, ethnicity, language and disability.[3] In order to significantly improve adult literacy rates in the future, it is critical that countries ensure that literacy-promotion initiatives (as well as initiatives to increase enrolment, retention and learning in schools) reach disadvantaged groups, and promote rich literate environments within households and in communities.

Box C.2-1
The stark gap in education statistics

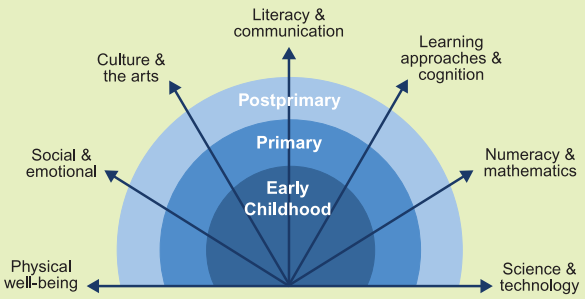
Estimates by the United Nations Educational, Scientific and Cultural Organization (UNESCO) suggest that at least 250 million primary school age children around the world are not able to read, write or count well enough to meet minimum learning standards, even after some have spent at least four years in school.[a] Increasingly, the international community is focusing its attention on the need not only to continue to promote access to education but also to ensure that students are learning. Currently, however, the dearth of standardized, widespread and internationally comparable statistics to measure learning outcomes of students makes assessing the success of the initiatives to promote learning in education more difficult.

In response to this need, UNESCO, through the UNESCO Institute for Statistics (UIS), and the Center for Universal Education at the Brookings Institution have convened the Learning Metrics Task Force, which aims to make recommendations to help countries and international organizations to measure and to improve learning outcomes for children and youth worldwide. To this end, the task force has specified three questions to be addressed:

- What learning is important for all children and youth?
- How should learning be measured?
- How can the measurement of learning improve the quality of education?

In the first phase of the project, the task force proposed seven domains and corresponding subdomains of learning that are considered important for all children and youth, beginning in early childhood and extending through the transition to adulthood including work: physical well-being, social and emotional, culture and the arts, literacy and communication, learning approaches and cognition, numeracy and mathematics, and science and technology (see figure).

Global framework of learning domains



Note: *This framework is intended for the purpose of the Learning Metrics Task Force to identify areas in which to measure learning outcomes. It is not intended to be used as a framework for policymaking, curriculum or instruction.*
Source: UNESCO Institute for Statistics and Center for Universal Education at the Brookings Institution, *Toward Universal Learning: What Every Child Should Learn* (2013).

Building on the recommendations from the first phase, for the second phase, the task force addressed the second core question of how learning can and should be measured at the global and national levels, across the seven domains that were identified.

Preliminary recommendations from the second phase include: (a) a set of six areas of measurement to determine

[3] Ibid., p. 100.

whether all children and youth have equitable learning opportunities: and (b) the establishment of a mechanism to track progress in the six areas and to support national-level decision-making and capacity for measuring learning.

The six areas of measurement are:

(a) Access to and completion of learning opportunities
(b) Exposure to a breadth of learning opportunities across all seven domains
(c) Early childhood experiences that result in readiness for primary school
(d) The ability to read and understand a variety of texts (at primary and lower secondary levels)
(e) The ability to use numbers and apply this knowledge to real-life situations (at primary and lower secondary levels)
(f) An adaptable, flexible skill set to meet the demands of the twenty-first century.

In its third phase, the task force sought to link the measurement of learning to the quality of education, which is crucial for policymakers grappling with the problem of improving education quality to promote learning for all students.

[a] United Nations Educational, Scientific and Cultural Organization, *Education for All Global Monitoring Report 2012: Youth and Skills – Putting Education to Work* (Paris, 2012).

Further reading

UNESCO Bangkok and UNICEF. *Asia-Pacific End of Decade Notes on Education for All Goal 4: Youth and Adult Literacy*. 2012. Available from www.uis.unesco.org/Library/Pages/DocumentMorePage.aspx?docIdValue=685&docIdFld=ID.

UNESCO Institute for Statistics. Adult and youth literacy. UIS Fact Sheet, No. 20 (September 2012). Available from www.uis.unesco.org/Library/Pages/DocumentMorePage.aspx?docIdValue=643&docIdFld=ID.

_____. *Adult and Youth Literacy, 1990-2015: Analysis of Data for 41 Selected Countries*. Montreal, Canada, 2012. Available from www.uis.unesco.org/Library/Pages/DocumentMorePage.aspx?docIdValue=642&docIdFld=ID.

Technical notes

Education survival rate, last grade of primary (percentage of grade 1 students)

Percentage of a cohort of pupils (or students) who are enrolled in the first grade of primary education in a given school year and who are expected to complete primary school. **Aggregate calculations:** UIS.

Adult literacy rate: female, male and total; youth literacy rate: female and male (percentage)

Total number of females or males in a given age group who can both read and write with comprehension a short, simple statement about their everyday life, expressed as a percentage of the female or male population in that age group. Generally, literacy also encompasses numeracy or the ability to make simple arithmetic calculations. The adult literacy rate measures literacy among persons aged 15 years or older, and the youth literacy rate measures literacy among persons aged 15 to 24 years. **Aggregate calculations for adult literacy rates:** UIS.

GPI for the adult literacy rate (female-to-male ratio)

Literate women divided by literate men (includes women and men aged 15 years or older). **Aggregate calculations:** UIS.

Illiterate adults: total and female (thousands)

Adult illiteracy is defined as the percentage of people aged 15 years or older who cannot both read and write with comprehension a short, simple statement about their everyday life. **Aggregate calculations:** UIS.

Sources

Source of staying in school and learning to read data (except youth literacy rates): UIS. Collected from survival rate school registers, school surveys or censuses, national population censuses, and household and labour force surveys.
Data obtained: May and June 2013.

Source of youth literacy rates data: UIS Data Centre. Collected from national population censuses, and household and labour force surveys.
Data obtained: 11 July 2013.

C.2.1 Primary school completion rates and literacy rates

	Education survival rate, last grade of primary			Adult literacy rate				Youth literacy rate			
				Female		Male		Female		Male	
	% of grade 1 students			% of population aged 15 and above				% of population aged 15-24			
	Earliest	2005	Latest	95-04	05-11	95-04	05-11	Earliest	Latest	Earliest	Latest
East and North-East Asia	**89.3 (99)**	**95.0**	**95.1 (10)**	**88.1**	**93.2**	**95.7**	**97.6**				
China				86.5 (00)	92.7 (10)	95.1 (00)	97.5 (10)	98.5 (00)	99.6 (10)	99.2 (00)	99.7 (10)
DPR Korea					100.0 (08)		100.0 (08)		100.0 (08)		100.0 (08)
Hong Kong, China	99.3 (02)		99.4 (10)								
Japan		100.0	100.0 (09)								
Macao, China		98.3	98.3 (09)	87.8 (01)	93.7 (11)	95.3 (01)	97.8 (11)	99.8 (01)	99.7 (11)	99.4 (01)	99.7 (11)
Mongolia	87.2 (99)		92.8 (10)	97.5 (00)	97.9 (11)	98.0 (00)	96.8 (11)	98.4 (00)	97.3 (11)	97.0 (00)	94.1 (11)
Republic of Korea	99.2 (99)	98.6	99.3 (09)								
South-East Asia	**74.5 (99)**	**75.9**	**81.0 (10)**	**87.3**	**90.5**	**93.3**	**95.0**				
Brunei Darussalam	97.1 (03)	96.5	96.6 (10)	90.2 (01)	93.9 (11)	95.2 (01)	97.0 (11)	98.9 (01)	99.7 (11)	98.9 (01)	99.8 (11)
Cambodia	54.7 (00)	55.1	61.3 (10)	64.1 (04)	65.9 (09)	84.7 (04)	82.8 (09)	78.9 (04)	85.9 (09)	87.9 (04)	88.4 (09)
Indonesia	85.9 (01)		88.0 (10)	86.8 (04)	90.1 (11)	94.0 (04)	95.6 (11)	98.5 (04)	98.8 (11)	98.9 (04)	98.8 (11)
Lao PDR	54.6 (99)	62.2	68.0 (10)	58.5 (00)	63.2 (05)	81.4 (00)	82.5 (05)	73.6 (00)	78.7 (05)	88.1 (00)	89.2 (05)
Malaysia	97.1 (02)	89.3	99.2 (09)	85.4 (00)	90.7 (10)	92.0 (00)	95.4 (10)	97.3 (00)	98.5 (10)	97.2 (00)	98.4 (10)
Myanmar	55.2 (00)	71.5	74.8 (09)	86.4 (00)	90.4 (11)	93.9 (00)	95.1 (11)	93.5 (00)	95.8 (11)	95.8 (00)	96.3 (11)
Philippines	75.3 (01)	70.4	75.8 (08)	92.7 (00)	95.8 (08)	92.5 (00)	95.0 (08)	95.7 (00)	98.5 (08)	94.5 (00)	97.0 (08)
Singapore		98.7	98.7 (08)	88.6 (00)	93.8 (10)	96.6 (00)	98.0 (10)	99.6 (00)	99.8 (10)	99.4 (00)	99.7 (10)
Thailand				90.5 (00)	91.5 (05)	94.9 (00)	95.6 (05)	97.8 (00)	97.9 (05)	98.1 (00)	98.2 (05)
Timor-Leste		83.6	83.6 (10)	30.0 (01)	53.0 (10)	45.3 (01)	63.6 (10)		78.6 (10)		80.5 (10)
Viet Nam	82.8 (99)	92.1	93.8 (10)	86.6 (00)	91.4 (11)	93.9 (00)	95.4 (11)	94.1 (00)	96.7 (11)	95.6 (00)	97.5 (11)
South and South-West Asia	**63.3 (99)**	**64.7**	**65.2 (10)**	**48.4**	**53.8**	**71.6**	**75.1**				
Afghanistan											
Bangladesh		66.2	66.2 (09)	40.8 (01)	53.4 (11)	53.9 (01)	62.0 (11)	60.3 (01)	80.4 (11)	67.2 (01)	77.1 (11)
Bhutan	81.5 (99)	84.3	91.0 (10)		38.7 (05)		65.0 (05)		68.0 (05)		80.0 (05)
India	62.0 (99)			47.8 (01)	50.8 (06)	73.4 (01)	75.2 (06)	67.7 (01)	74.4 (06)	84.2 (01)	88.4 (06)
Iran (Islamic Rep. of)	97.4 (00)		98.1 (10)	70.4 (02)	80.7 (08)	83.5 (02)	89.3 (08)		98.5 (08)		98.8 (08)
Maldives				96.4 (00)	98.4 (06)	96.2 (00)	98.4 (06)	98.3 (00)	99.4 (06)	98.0 (00)	99.2 (06)
Nepal	59.0 (99)		61.7 (07)	34.9 (01)	46.7 (11)	62.7 (01)	71.1 (11)	60.1 (01)	77.5 (11)	80.6 (01)	89.2 (11)
Pakistan	69.7 (04)		52.2 (10)		40.3 (09)		68.6 (09)		61.5 (09)		79.1 (09)
Sri Lanka	97.8 (01)	98.7	97.3 (10)	89.1 (01)	90.0 (10)	92.3 (01)	92.6 (10)	96.1 (01)	98.6 (10)	95.1 (01)	97.7 (10)
Turkey	94.9 (03)	97.8	99.2 (09)	79.6 (04)	90.3 (11)	95.3 (04)	97.9 (11)	93.3 (04)	97.9 (11)	98.0 (04)	99.4 (11)
North and Central Asia	**96.1 (99)**	**97.0**	**97.0 (10)**	**99.1**	**99.6**	**99.6**	**99.7**				
Armenia	95.8 (02)	98.5	96.0 (10)	99.2 (01)	99.5 (11)	99.7 (01)	99.7 (11)	99.9 (01)	99.8 (11)	99.8 (01)	99.7 (11)
Azerbaijan	96.3 (99)	97.1	97.2 (10)		99.7 (09)		99.8 (09)		99.9 (09)		100.0 (09)
Georgia	99.1 (99)	98.8	96.2 (09)	99.6 (02)	99.7 (11)	99.8 (02)	99.8 (11)	99.9 (02)	99.9 (11)	99.8 (02)	99.8 (11)
Kazakhstan	95.0 (00)	99.3	99.8 (10)		99.7 (09)		99.8 (09)		99.9 (09)		99.8 (09)
Kyrgyzstan	94.5 (99)	98.1	95.3 (10)		99.0 (09)		99.5 (09)		99.8 (09)		99.7 (09)
Russian Federation	94.8 (99)		96.1 (08)	99.2 (02)	99.6 (10)	99.7 (02)	99.7 (10)	99.8 (02)	99.8 (10)	99.7 (02)	99.7 (10)
Tajikistan	96.7 (99)	99.4	98.9 (10)	99.2 (00)	99.6 (11)	99.7 (00)	99.8 (11)	99.8 (00)	99.9 (11)	99.8 (00)	99.9 (11)
Turkmenistan					99.5 (11)		99.7 (11)		99.9 (11)		99.8 (11)
Uzbekistan	99.5 (99)	98.4	98.1 (10)	98.1 (00)	99.2 (11)	99.2 (00)	99.6 (11)	99.9 (00)	100.0 (11)	99.9 (00)	99.9 (11)
Pacific	**66.9 (99)**	**69.8**	**68.7 (06)**	**92.5**	**92.8**	**94.2**	**93.8**				
American Samoa											
Australia											
Cook Islands											
Fiji	82.1 (99)		90.9 (08)								
French Polynesia											
Guam											
Kiribati	69.4 (01)										
Marshall Islands		78.4	83.5 (08)								
Micronesia (F.S.)											
Nauru											
New Caledonia											
New Zealand											
Niue											
Northern Mariana Islands											
Palau											
Papua New Guinea				50.9 (00)	59.4 (11)	63.4 (00)	65.4 (11)	64.1 (00)	74.8 (11)	69.1 (00)	67.0 (11)
Samoa	90.0 (99)		76.6 (10)	98.2 (04)	98.6 (11)	98.8 (04)	99.0 (11)	99.4 (04)	99.6 (11)	99.3 (04)	99.4 (11)
Solomon Islands											
Tonga	91.1 (00)	90.4			99.1 (06)		99.0 (06)		99.6 (06)		99.3 (06)
Tuvalu											
Vanuatu	68.9 (99)		71.5 (08)	76.0 (04)	81.6 (11)	80.1 (04)	84.9 (11)	91.9 (04)	94.8 (11)	92.1 (04)	94.4 (11)
Asia and the Pacific	**73.8 (99)**	**74.7**	**76.2 (10)**	**74.2**	**78.4**	**86.4**	**88.7**				
Developed countries											
Developing countries											
LLDC	83.2 (99)	82.0	82.5 (10)	71.3	77.3	81.6	86.2				
LDC	58.5 (99)	66.0	75.9 (10)								
ASEAN	74.5 (99)	75.9	81.0 (10)	87.4	90.6	93.4	95.1				
ECO	76.1 (99)	81.3	75.4 (10)	60.6	68.5	76.4	83.1				
SAARC	61.1 (99)	62.9	63.2 (10)	45.5	50.4	69.8	73.2				
Central Asia	97.4 (99)	98.5	98.0 (10)	98.7	99.5	99.5	99.7				
Pacific island dev. econ.	58.9 (99)	63.4	62.7 (06)	62.3	68.1	72.1	73.4				
Low income econ.	61.0 (99)	68.0	77.2 (10)	56.4	64.8	68.5	74.0				
Lower middle income econ.	66.1 (99)	66.4	66.4 (10)	58.3	61.8	77.5	80.1				
Upper middle income econ.	88.2 (99)	92.7	93.6 (10)	87.4	92.9	95.1	97.3				
High income econ.	94.1 (99)	95.1	95.1 (10)								
Africa	**62.2 (99)**	**64.3**	**61.5 (10)**	**48.4**	**54.0**	**68.4**	**71.3**				
Europe	**95.3 (99)**	**95.7**	**95.6 (10)**	**98.4**	**98.9**	**99.2**	**99.4**				
Latin America and Carib.	**76.8 (99)**	**81.1**	**83.6 (10)**	**89.0**	**90.9**	**90.6**	**92.2**				
North America	**90.2 (99)**	**91.5**	**93.5 (10)**								
World	**73.9 (99)**	**74.7**	**74.9 (10)**	**76.9**	**79.9**	**86.9**	**88.5**				

C.2.2 Illiterate population and gender parity index

	Illiterate adults				Adult literacy rate		Gender parity index for adult literacy rate	
	Total		Female					
	Thousands				% of total population aged 15 and above		Female-to-male ratio	
	95-04	05-11	95-04	05-11	95-04	05-11	95-04	05-11
East and North-East Asia	**89 972**	**56 908**	**65 276**	**41 768**	**91.9**	**95.4**	**0.92**	**0.96**
China	85 688 (00)	52 347 (10)	62 106 (00)	38 392 (10)	90.9 (00)	95.1 (10)	0.91 (00)	0.95 (10)
DPR Korea		0.3 (08)		0.2 (08)		100.0 (08)		1.00 (08)
Hong Kong, China								
Japan								
Macao, China	30 (01)	21 (11)	22 (01)	16 (11)	91.3 (01)	95.6 (11)	0.92 (01)	0.96 (11)
Mongolia	35 (00)	53 (11)	20 (00)	22 (11)	97.8 (00)	97.4 (11)	1.00 (00)	1.01 (11)
Republic of Korea								
South-East Asia	**36 394**	**31 169**	**24 091**	**20 676**	**90.2**	**92.7**	**0.94**	**0.95**
Brunei Darussalam	17 (01)	14 (11)	11 (01)	9 (11)	92.7 (01)	95.4 (11)	0.95 (01)	0.97 (11)
Cambodia	2 160 (04)	2 449 (09)	1 560 (04)	1 672 (09)	73.6 (04)	73.9 (09)	0.76 (04)	0.80 (09)
Indonesia	15 303 (04)	12 793 (11)	10 597 (04)	8 918 (11)	90.4 (04)	92.8 (11)	0.92 (04)	0.94 (11)
Lao PDR	928 (00)	958 (05)	646 (00)	657 (05)	69.6 (00)	72.7 (05)	0.72 (00)	0.77 (05)
Malaysia	1 764 (00)	1 363 (10)	1 129 (00)	908 (10)	88.7 (00)	93.1 (10)	0.93 (00)	0.95 (10)
Myanmar	3 079 (00)	2 646 (11)	2 144 (00)	1 779 (11)	89.9 (00)	92.7 (11)	0.92 (00)	0.95 (11)
Philippines	3 518 (00)	2 635 (08)	1 749 (00)	1 209 (08)	92.6 (00)	95.4 (08)	1.00 (00)	1.01 (08)
Singapore	229 (00)	172 (10)	177 (00)	130 (10)	92.5 (00)	95.9 (10)	0.92 (00)	0.96 (10)
Thailand	3 530 (00)	3 361 (05)	2 341 (00)	2 254 (05)	92.6 (00)	93.5 (05)	0.95 (00)	0.96 (05)
Timor-Leste	271 (01)	252 (10)	149 (01)	140 (10)	37.6 (01)	58.3 (10)	0.66 (01)	0.83 (10)
Viet Nam	5 271 (00)	4 528 (11)	3 705 (00)	3 000 (11)	90.2 (00)	93.4 (11)	0.92 (00)	0.96 (11)
South and South-West Asia	**397 759**	**410 245**	**251 247**	**262 336**	**60.3**	**64.3**	**0.68**	**0.72**
Afghanistan								
Bangladesh	43 809 (01)	44 137 (11)	24 055 (01)	24 151 (11)	47.5 (01)	57.7 (11)	0.76 (01)	0.86 (11)
Bhutan		206 (05)		124 (05)		52.8 (05)		0.59 (05)
India	274 053 (01)	287 355 (06)	177 334 (01)	187 034 (06)	61.0 (01)	62.8 (06)	0.65 (01)	0.68 (06)
Iran (Islamic Rep. of)	10 605 (02)	8 256 (08)	6 774 (02)	5 257 (08)	77.0 (02)	85.0 (08)	0.84 (02)	0.90 (08)
Maldives	6 (00)	3 (06)	3 (00)	2 (06)	96.3 (00)	98.4 (06)	1.00 (00)	1.00 (06)
Nepal	7 627 (01)	8 150 (11)	4 945 (01)	5 383 (11)	48.6 (01)	57.4 (11)	0.56 (01)	0.66 (11)
Pakistan		49 507 (09)		32 107 (09)		54.9 (09)		0.59 (09)
Sri Lanka	1 306 (01)	1 373 (10)	771 (01)	805 (10)	90.7 (01)	91.2 (10)	0.97 (01)	0.97 (10)
Turkey	6 055 (04)	3 224 (11)	4 935 (04)	2 668 (11)	87.4 (04)	94.1 (11)	0.84 (04)	0.92 (11)
North and Central Asia	**1 124**	**620**	**834**	**394**	**99.3**	**99.7**	**0.99**	**1.00**
Armenia	14 (01)	11 (11)	11 (01)	7 (11)	99.4 (01)	99.6 (11)	0.99 (01)	1.00 (11)
Azerbaijan		17 (09)		12 (09)		99.8 (09)		1.00 (09)
Georgia	13 (02)	10 (11)	9 (02)	6 (11)	99.7 (02)	99.7 (11)	1.00 (02)	1.00 (11)
Kazakhstan		32 (09)		20 (09)		99.7 (09)		1.00 (09)
Kyrgyzstan		28 (09)		19 (09)		99.2 (09)		0.99 (09)
Russian Federation	676 (02)	383 (10)	507 (02)	234 (10)	99.4 (02)	99.7 (10)	1.00 (02)	1.00 (10)
Tajikistan	20 (00)	13 (11)	14 (00)	9 (11)	99.5 (00)	99.7 (11)	1.00 (00)	1.00 (11)
Turkmenistan		14 (11)		9 (11)		99.6 (11)		1.00 (11)
Uzbekistan	211 (00)	112 (11)	147 (00)	77 (11)	98.6 (00)	99.4 (11)	0.99 (00)	1.00 (11)
Pacific	**1 614**	**1 877**	**918**	**1 015**	**93.3**	**93.3**	**0.98**	**0.99**
American Samoa								
Australia								
Cook Islands								
Fiji								
French Polynesia								
Guam								
Kiribati								
Marshall Islands								
Micronesia (F.S.)								
Nauru								
New Caledonia								
New Zealand								
Niue								
Northern Mariana Islands								
Palau								
Papua New Guinea	1 374 (00)	1 614 (11)	780 (00)	863 (11)	57.3 (00)	62.4 (11)	0.80 (00)	0.91 (11)
Samoa	2 (04)	1 (11)	1 (04)	1 (11)	98.6 (04)	98.8 (11)	0.99 (04)	1.00 (11)
Solomon Islands								
Tonga		0.6 (06)		0.3 (06)		99.0 (06)		1.00 (06)
Tuvalu								
Vanuatu	27 (04)	26 (11)	15 (04)	14 (11)	78.1 (04)	83.2 (11)	0.95 (04)	0.96 (11)
Asia and the Pacific	**526 864**	**500 819**	**342 365**	**326 189**	**80.4**	**83.4**	**0.86**	**0.88**
Developed countries								
Developing countries								
LLDC	17 766	17 629	11 010	11 146	76.3	81.4	0.87	0.90
LDC								
ASEAN	36 124	30 917	23 942	20 536	90.3	92.8	0.94	0.95
ECO	71 176	69 237	44 323	44 984	68.6	75.9	0.79	0.82
SAARC	381 099	398 765	239 538	254 412	58.0	61.6	0.65	0.69
Central Asia	448	237	327	160	99.0	99.6	0.99	1.00
Pacific island dev. econ.	1 576	1 836	896	991	67.4	70.8	0.86	0.93
Low income econ.	65 221	65 456	37 728	37 820	62.4	69.2	0.82	0.88
Lower middle income econ.	348 594	361 578	223 346	235 073	68.1	70.7	0.75	0.77
Upper middle income econ.	108 474	69 001	77 910	49 754	91.3	95.1	0.92	0.95
High income econ.								
Africa	**201 521**	**222 249**	**126 070**	**137 879**	**58.1**	**62.5**	**0.71**	**0.76**
Europe	**5 824**	**4 533**	**4 005**	**2 969**	**98.8**	**99.1**	**0.99**	**1.00**
Latin America and Carib.	**38 641**	**35 954**	**21 244**	**19 791**	**89.7**	**91.6**	**0.98**	**0.99**
North America								
World	**790 840**	**781 898**	**505 178**	**498 640**	**81.8**	**84.1**	**0.88**	**0.90**

C.3. Financial and human resources for education

The resources that societies invest in education foster economic growth, enhance productivity, contribute to personal and social development, and reduce social inequality. In order to reach the Education for All[1] goals and meet Millennium Development Goal 2 on achieving universal primary education, it is necessary to have adequate financing for education. While education is financed from both public and private sources, the majority of the financing in most of the countries is allocated from total government budget. This remains one of the key fiscal choices made by Governments in developing and developed countries alike.

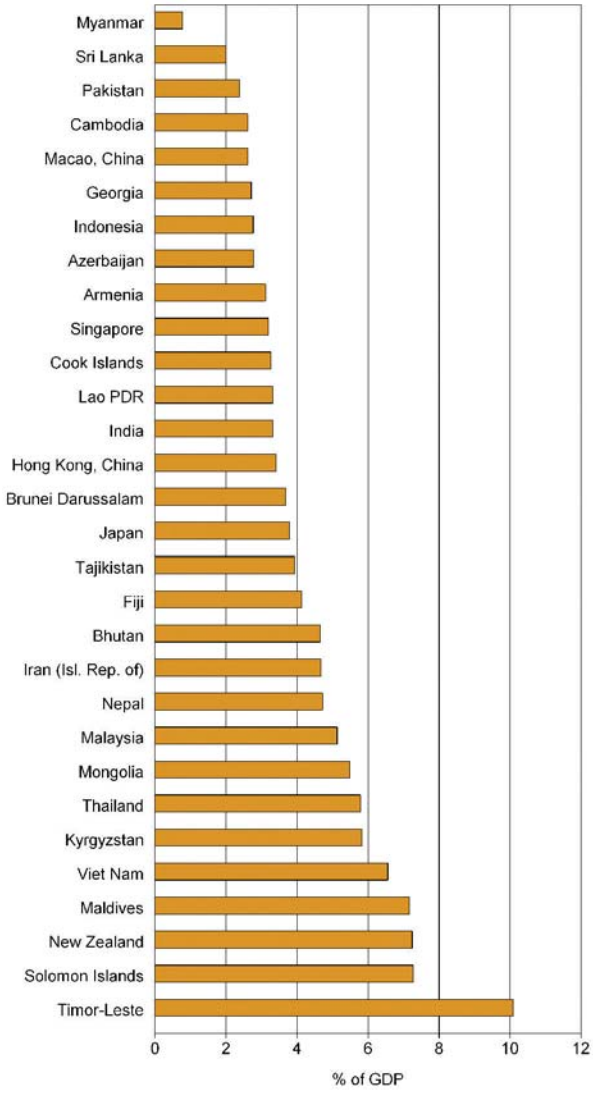
Countries in the Asian and Pacific region spend between 2 per cent and 10 per cent of GDP on education annually.

Public expenditure on education as a share of GDP measures how significant government spending on education is in relation to the total output of the economy. In 2008, the Oslo Declaration[2] urged Governments to spend the equivalent of 4 per cent to 6 per cent of gross national product (GNP) on education.[3] Of the countries in the Asian and Pacific region for which data are available, Bhutan, Fiji, the Islamic Republic of Iran, Kyrgyzstan, Malaysia, Maldives, Mongolia, Nepal, New Zealand, Solomon Islands, Thailand, Timor-Leste and Viet Nam met or surpassed this target of public expenditure on education in 2010. Other countries and areas that fell short of this target include Azerbaijan, Cambodia, Georgia, Indonesia, Pakistan, Sri Lanka and Macao, China, where expenditure would need to more than double in order to reach the upper level of the target, and Myanmar, where expenditure would need to increase almost eightfold.

As a share of GDP, expenditure on education fell sharply in the last decade in Vanuatu, from almost 9 per cent in 2001 to about 5 per cent in 2009. In contrast, Kyrgyzstan, the Lao People's Democratic Republic, Nepal and Tajikistan increased their expenditure on education as a share of GDP by between 1 and 2 percentage points from 2001 to 2010.

In the region as a whole, the median expenditure on education as a share of GDP was about 3.5 per cent in 2011, which reflects that more

Figure C.3-1
Public expenditure on education as a share of GDP, Asia and the Pacific, latest year (2010-2012)



[1] Led by the United Nations Educational, Scientific and Cultural Organization, the global Education for All movement aims to meet the learning needs of all children, youth and adults by 2015.

[2] United Nations Educational, Scientific and Cultural Organization, "Oslo Declaration: 8th Meeting of the High-Level Group on Education for All", Oslo, 16-18 December 2008 (ED/EFA/2009/ME/1). Available from http://unesdoc.unesco.org/images/0017/001794/179421E.pdf. Accessed 9 May 2013.

[3] While the commitment to public expenditure on education is in relation to GNP, a lack of data for GNP in the region necessitates the use of GDP as a proxy for this measure.

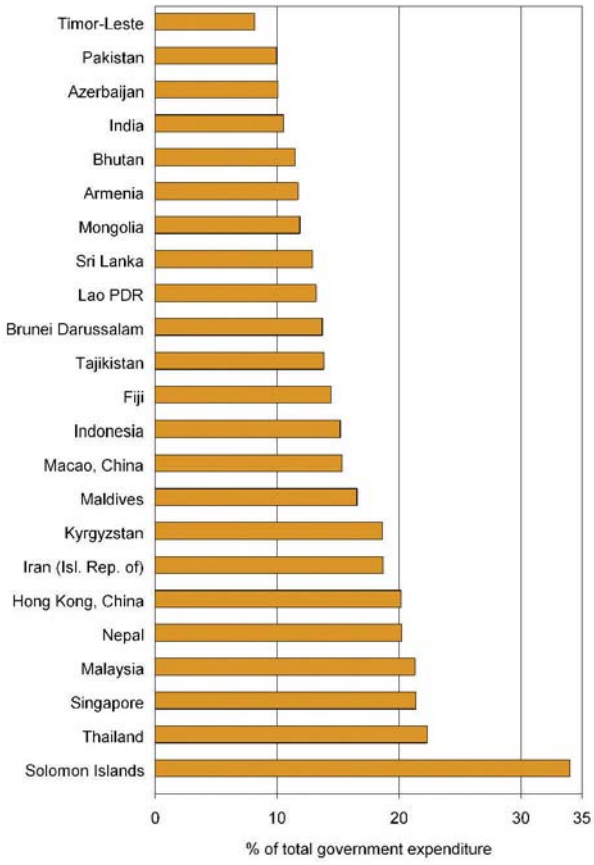
than half of the countries in the region are at least approaching the 4 per cent minimum as recommended in the Oslo Declaration. However, there is significant variation across the region on this measure; at the high end, Timor-Leste spends the equivalent of more than 10 per cent of GDP on education, while at the lower end, Myanmar recorded less than 1 per cent.

Within the Asian and Pacific region, countries commit between 8 per cent and 34 per cent of total public expenditure to education.

Public expenditure on education as a share of total public expenditure is a better reflection of political commitment to education in relation to other national priorities since this measure is controlled by Governments (unlike GDP which is also affected by market forces). The Oslo Declaration recommends that countries spend between 15 per cent and 20 per cent of their total government expenditure on education. As shown in figure C.3-2, 11 countries or areas in the region (of those for which data are available) have reached or exceeded this target. These are Solomon Islands (34 per cent), Thailand (29 per cent), Malaysia (21 per cent), Singapore (21 per cent), Hong Kong, China (20 per cent), Nepal (20 per cent), the Islamic Republic of Iran (19 per cent), Kyrgyzstan (19 per cent), Maldives (17 per cent), Indonesia (15 per cent) and Macao, China (15 per cent). Azerbaijan, Pakistan and Timor-Leste spend between 8 per cent and 10 per cent on education as a share of total government expenditure, the lowest in the region for which recent data are available.

Over the last decade, several countries have significantly increased expenditure on education as a share of total expenditure. A notable example is Nepal, where the share increased from 13 per cent in 2001 to more than 20 per cent in 2010. The shares in Brunei Darussalam, Indonesia and the Lao People's Democratic Republic also increased by more than 4 percentage points between 2001 and 2011. For the region as a whole, the median expenditure in the latest year (2010-2011) was about 15 per cent.

Figure C.3-2
Public expenditure on education as a share of total government expenditure, Asia and the Pacific, latest year (2010-2012)



The countries that meet or surpass the recommended threshold for expenditure on education as a share of GDP are generally not the same ones that meet or surpass the threshold for expenditure on education as a share of total public expenditure. This emphasizes the fact that neither of these two indicators should be examined in isolation. For example, public expenditure on education as a share of GDP in Timor-Leste is higher than in all other countries for which there are recent data. By contrast, the same expenditure as a share of total public expenditure in Timor-Leste is the lowest among all the countries with recent data. More information is needed to understand why this is the case, but recent time series data suggest that total public expenditure has been increasing rapidly over the last few years in most countries, and that the share allocated to education has not expanded at the same rate.

The variation in the performances of countries against these two indicators also suggests that, if countries meet only one of the thresholds (education expenditure either as a share of total public expenditure or as a share of GDP), it is possible that the country has not "allocated adequate domestic resources" to education as specified in the Oslo Declaration.

Public spending on secondary education is higher than on primary education, reflecting the resource intensity of the former.

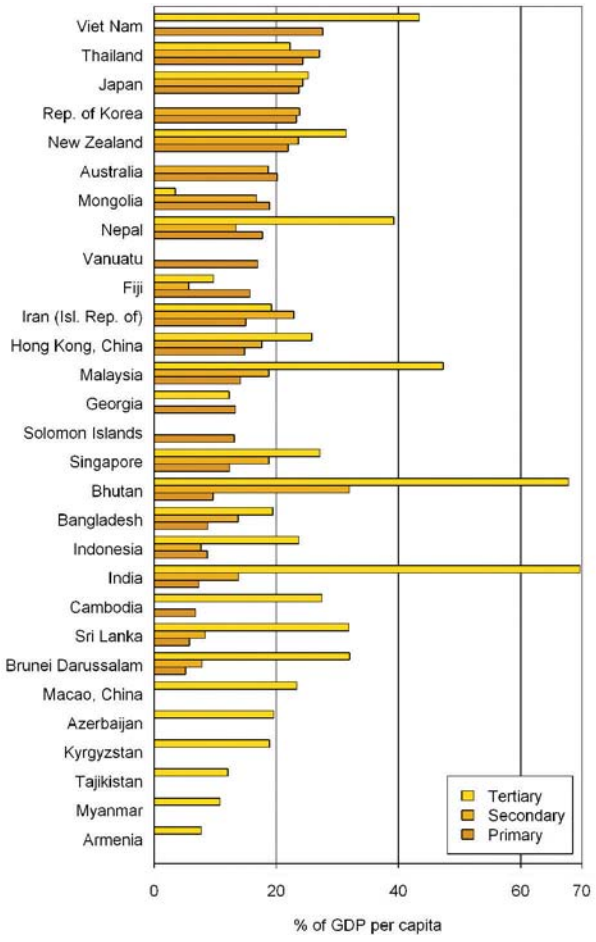
Measures of public expenditure on education per student expressed as a share of per capita GDP describe public education funding per individual student in relation to the national output per individual. The data show increasing disparity between countries in the region regarding the amounts spent on tertiary and secondary students compared with the amounts spent on primary students.

Generally, expenditure on primary education per student is lower than that on secondary education per student because secondary education, with a choice of subjects and specialized facilities, such as science laboratories, involves higher costs. The same is true for tertiary education.

In 2011,[4] expenditure per primary student as a share of per capita GDP in the region ranged from 5 per cent in Brunei Darussalam to more than 28 per cent in Viet Nam. The shares for students in secondary education ranged from almost 6 per cent in Fiji to more than 32 per cent in Bhutan. In countries in the region for which recent data exist, expenditure per student as a share of per capita GDP in 2011[4] was, on average, about 15 per cent for primary students and almost 18 per cent for secondary students (see figure C.3-3).

However, these results should be interpreted with caution as they are constructed from several sets of data that move independently. For example, more rapid expansion in enrolment in primary education than public expenditure on primary

Figure C.3-3
Public expenditure per student on primary, secondary and tertiary education as a share of per capita GDP, Asia and the Pacific, latest year (2009-2012)

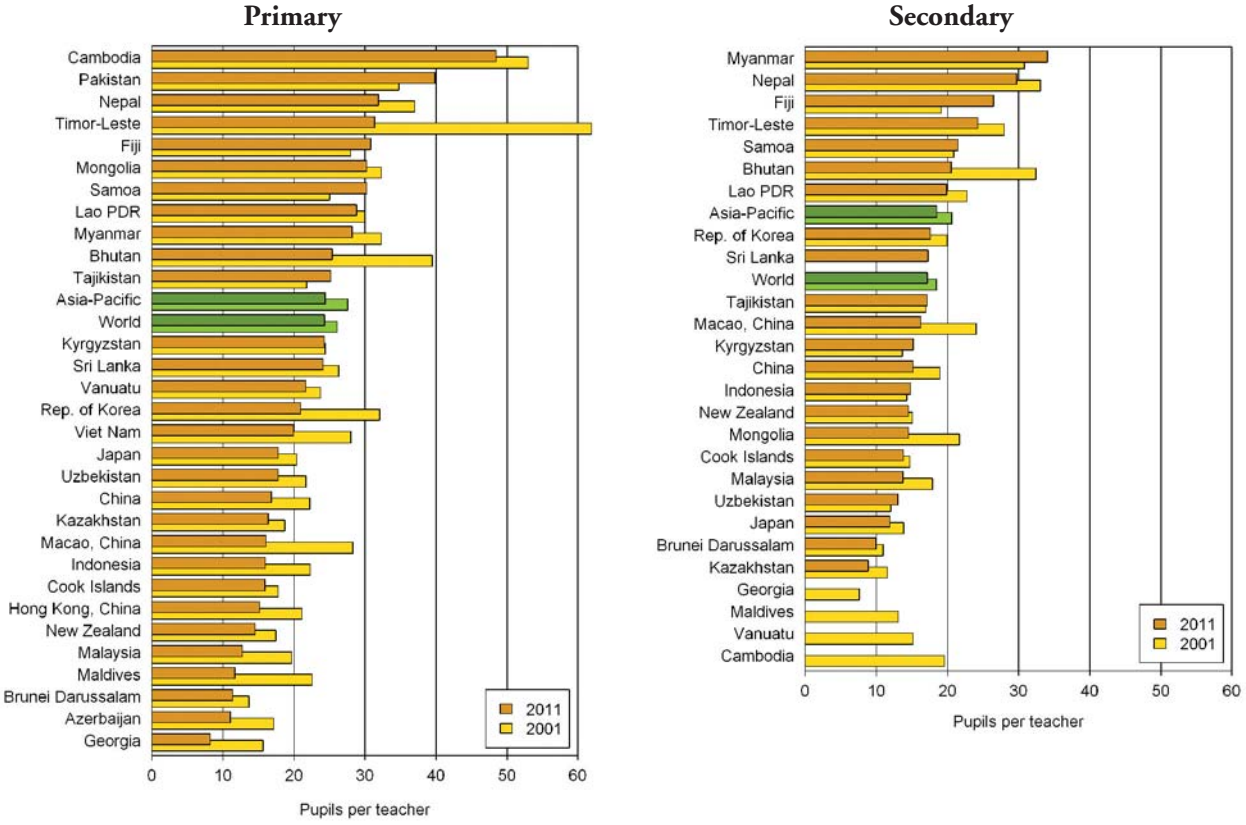


education, as well as growth in GDP that exceeds population growth, will result in a lower figure for per student public expenditure on primary education as a share of per capita GDP. The primary reason for this result, especially as it changes over time, is difficult to isolate without looking closely at the underlying data.

In addition, these measures reflect only public expenditure and do not capture the role of private finance at any level of education. In countries where school fees are particularly high or where universities receive significant funding from private institutions, per student public expenditure might appear relatively low. This indicator is therefore only accurate as a measure

[4] Data for 2009 and 2010 were used when data for 2011 were unavailable.

Figure C.3-4
Pupil-teacher ratios in primary and secondary education, Asia and the Pacific, 2001 or earliest, and 2011 or latest



of education resources per student where Governments are by and large the only source of education finance.

Some countries in the Asian and Pacific region have fewer than 10 pupils per teacher in their classrooms while others have more than 40.

In many countries in the region, the number of pupils per teacher at the primary level fell in the decade of the 2000s. The ratio decreased significantly in Timor-Leste (where it fell from 62 to 31 pupils per teacher), but increased in Pakistan, Samoa and Tajikistan. For secondary education, the ratio decreased considerably in Bhutan (where it fell from 32 to 21 pupils per teacher) but increased in the Cook Islands, Kyrgyzstan, Myanmar, Samoa, Tajikistan and Uzbekistan.

Large disparities exist within the region, with some countries recording as few as 8 primary school pupils per teacher in 2010 (Georgia) and others having more than 40 (Afghanistan, Bangladesh, Cambodia and Pakistan). In 2011, the region's primary school pupil-teacher ratio was 24, the same level as that of the world.

A similar pattern can be observed for the secondary level across the region. With the exception of Fiji, Kyrgyzstan, Myanmar, Samoa and Uzbekistan, there was a decline in the pupil-teacher ratio between 2001 and the latest year, and the regional average went from 19.6 in 1999 to 18.7 in 2011. This number, however, is still higher than the global pupil-teacher ratio of 17.3.

Pupil-teacher ratios are one indicator commonly used to assess education quality since the presence of a teacher is critical to student learning outcomes. High pupil-teacher ratios indicate that the quality of education, holding all else constant, is likely to be lower. These high ratios might exist for a variety of reasons, including inadequate public expenditure on education (discussed above), a lack of places in teacher training

institutions, unattractive pay and conditions for teachers, or rapid growth in pupil enrolments.

While this indicator is necessary for gauging the quality of education, it is not a sufficient measure of quality as teachers are only one of many inputs that are important to student learning outcomes (others might include classrooms and textbooks). Moreover, this indicator does not account for teacher quality, which would require measuring teachers' qualifications, motivation, experience and other capabilities.

Further reading

Leading Group on Innovating Financing for Development. *2+3=8: Innovating in Financing Education – Report of the Writing Committee to the Task Force on Innovative Financing for Education*. Paris, 2010. Available from www.leadinggroup.org/IMG/pdf_Innovating_in_Financing_Education_BAT.pdf.

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UNESCO Institute for Statistics and Organisation for Economic Co-operation and Development. *Financing Education: Investments and Returns – Analysis of the World Education Indicators*. 2002. Available from www.uis.unesco.org/Library/Documents/wei02_en.pdf.

Technical notes

Public expenditure on education (percentage of GDP, percentage of total government expenditure)

Total public expenditure (current and capital) on education. Expressed as a percentage of GDP or as a percentage of total government expenditure. GDP is based on national accounts reports from the UNESCO Institute for Statistics (UIS). GDP levels may, in this case, not be comparable with GDP levels published elsewhere in this *Yearbook*.

Public expenditure per pupil: primary, secondary and tertiary education (percentage of GDP per capita)

Total public expenditure per pupil at each level of education, expressed as a percentage of GDP per capita.

Pupil-teacher ratio: primary and secondary education (pupils per teacher)

Average number of pupils (students) per teacher in primary or secondary education in a given school year, based on headcounts of both pupils and teachers. **Aggregate calculations:** UIS.

Sources

Source of resources for education data: UIS Data Centre. Data on public expenditure on education as a percentage of GDP collected from annual financial reports by central or federal governments, or regional administrations. Data on GDP are normally available from national accounts reports from the bureau of statistics. Data for public expenditure on education as a percentage of total government expenditure collected from annual financial reports prepared by the ministry of finance, national accounts reports by the national statistical office, and financial reports from the various government departments engaged in education activities, especially the ministry of education. **Data obtained:** 13 June 2013.

Source of pupil-teacher ratio data: UIS. Collected from school registers, teacher records, school censuses or surveys for data on enrolment and teaching staff. **Data obtained:** May and June 2013.

C.3.1 Public expenditure on education and pupil-teacher ratios

	Public expenditure on education						Pupil-teacher ratio					
							Primary education			Secondary education		
	% of GDP			% of total government expenditure			Pupils per teacher					
	2000	2005	Latest	2000	2005	Latest	2000	2005	Latest	2000	2005	Latest
East and North-East Asia							**23.2**	**18.9**	**17.0 (11)**	**17.0**	**17.8**	**15.0 (11)**
China									16.8 (11)	17.1		15.2 (11)
DPR Korea												
Hong Kong, China		4.1	3.4 (11)		22.5	20.1 (11)	21.5	18.3	14.8 (11)			
Japan	3.6	3.5	3.8 (10)	10.5	9.5	9.4 (08)	20.7	18.9	17.8 (10)	14.0	12.6	11.9 (10)
Macao, China	3.7	2.3	2.6 (10)	13.9	14.1	15.3 (10)	30.0	23.2	14.8 (11)	23.9	22.4	14.8 (11)
Mongolia	5.6		5.5 (11)	15.8		11.9 (11)	32.6	34.2	29.3 (11)	19.9	22.4	14.5 (10)
Republic of Korea		4.1	5.0 (09)		15.3	15.8 (08)	32.1	27.9	20.9 (10)	21.0	18.1	17.6 (10)
South-East Asia							**25.9**	**23.2**	**19.1 (11)**	**20.9**	**18.2**	**18.8 (11)**
Brunei Darussalam	3.7		3.3 (12)	9.1		16.9 (12)	13.7	10.1	11.3 (11)	10.9	10.1	9.9 (11)
Cambodia	1.7		2.6 (10)	14.7		12.4 (07)	50.1	53.2	47.3 (11)	18.5		28.9 (07)
Indonesia		2.9	2.8 (11)		14.9	15.2 (11)	22.4	20.4	15.9 (11)	15.8	12.5	14.8 (11)
Lao PDR	1.5	2.4	3.3 (10)	7.4	11.7	13.2 (10)	30.1	31.5	26.8 (11)	21.3	24.8	19.9 (11)
Malaysia	6.0		5.1 (10)	26.7		21.3 (10)	19.6	16.9	12.7 (10)	18.4	16.3	13.7 (10)
Myanmar	0.6		0.8 (11)	8.7			32.8	30.9	28.2 (10)	31.9	33.1	34.1 (10)
Philippines	3.3	2.4	2.7 (09)	13.9	15.2	15.0 (09)	35.3	35.1	31.4 (09)		37.9	34.8 (09)
Singapore	3.4		3.3 (12)			22.7 (12)			17.4 (09)			14.9 (09)
Thailand	5.4	4.2	5.8 (11)	31.0	24.0	29.5 (11)	20.8		16.0 (08)			19.9 (11)
Timor-Leste			10.1 (11)			8.1 (11)			31.4 (11)		23.7	24.3 (11)
Viet Nam			6.6 (10)			19.8 (08)	29.5	21.6	19.6 (11)			
South and South-West Asia							**38.2**	**38.7**	**38.7 (08)**	**32.6**	**30.0**	**26.3 (11)**
Afghanistan									44.7 (11)			31.6 (07)
Bangladesh	2.4		2.2 (09)	15.0		14.1 (09)		47.0	40.2 (11)	38.4	23.9	30.6 (11)
Bhutan	5.5	7.1	4.7 (11)	13.8	17.2	11.5 (11)	41.1	31.1	25.4 (11)	32.5	28.1	20.5 (11)
India	4.3	3.1	3.3 (10)	12.7		10.5 (10)	40.0			33.6		25.3 (10)
Iran (Islamic Rep. of)	4.4	4.7	4.7 (10)	18.3	22.8	18.7 (11)	26.1	21.7	20.5 (09)			
Maldives		5.9	7.2 (11)		15.0	16.6 (11)	22.7	20.1	12.3 (11)	15.3		
Nepal	3.0	3.4	4.7 (10)	13.2	16.2	20.2 (10)	38.0	39.7	29.6 (11)	30.2		29.7 (11)
Pakistan	1.8	2.3	2.4 (10)		10.9	9.9 (10)	33.0	38.3	39.8 (11)			
Sri Lanka			2.0 (11)			12.9 (11)		21.9	24.1 (11)			17.3 (11)
Turkey	2.6		2.9 (06)									
North and Central Asia							**19.0**	**17.6**	**16.8 (11)**		**10.7**	**10.0 (11)**
Armenia	2.8	2.7	3.1 (11)	12.8	12.5	11.7 (11)		21.2	19.3 (07)		8.6	6.7 (10)
Azerbaijan	3.9	3.0	2.8 (10)	23.8	17.4	10.0 (10)	18.7	13.4	11.2 (11)			
Georgia	2.2	2.5	2.7 (11)	11.7	8.8	7.7 (09)	16.8		8.2 (10)	7.5		7.6 (09)
Kazakhstan	3.3	2.3	3.1 (09)	12.1			18.7	17.3	16.4 (11)	11.3	11.0	8.9 (11)
Kyrgyzstan	3.5	4.9	5.8 (10)	20.3	24.4	18.6 (10)	24.1	24.5	24.9 (11)	13.3	13.4	15.2 (10)
Russian Federation	2.9	3.8	4.1 (08)	10.6		11.9 (08)	17.6	16.7	18.1 (09)		9.5	8.5 (09)
Tajikistan	2.3	3.5	3.9 (11)		18.0	13.8 (11)	21.8	21.3	23.3 (11)	16.4	16.4	15.4 (11)
Turkmenistan												
Uzbekistan							21.4	19.9	15.6 (11)	11.5	13.3	13.3 (11)
Pacific							**20.2**	**19.8**	**19.9 (07)**			
American Samoa												
Australia	4.9	4.9	5.1 (09)	14.3	14.6	13.5 (08)						
Cook Islands			3.3 (11)				17.8	16.1	15.9 (11)	13.9	15.6	13.8 (11)
Fiji	5.9	5.1	4.1 (11)	22.8	18.3	14.4 (11)	28.1		30.8 (11)	20.2		26.5 (11)
French Polynesia												
Guam												
Kiribati	11.0						31.7	24.7	25.0 (08)		17.0	17.4 (08)
Marshall Islands	14.6											
Micronesia (F.S.)	6.7											
Nauru						7.5 (07)	21.5	27.9	22.4 (08)	17.4	15.4	20.9 (07)
New Caledonia												
New Zealand		6.4	7.2 (10)		15.5	16.1 (08)	18.4	16.3	14.5 (10)	15.5	14.7	14.5 (10)
Niue							14.7	11.9			8.2	
Northern Mariana Islands												
Palau	9.8						15.7			15.1		
Papua New Guinea							35.4	34.6	35.8 (06)			
Samoa	4.0		5.8 (08)	13.3		13.4 (08)	24.0		30.2 (10)	21.2		21.5 (10)
Solomon Islands			7.3 (10)			34.0 (10)			24.9 (10)	10.1		28.1 (10)
Tonga	4.9			16.5			22.1	20.3	25.4 (07)	14.6		
Tuvalu							19.7					
Vanuatu	7.0		5.2 (09)	16.9		23.7 (09)	22.5		21.7 (10)	24.7		
Asia and the Pacific							**28.0**	**26.1**	**24.3 (11)**	**20.1**	**20.2**	**18.7 (11)**
Developed countries												
Developing countries												
LLDC							26.3	28.9	26.2 (11)	13.4	15.1	15.2 (11)
LDC							44.1	42.4	36.6 (11)	34.7	26.6	30.4 (11)
ASEAN							25.9	23.2	19.1 (11)	20.9	18.2	18.8 (11)
ECO							27.7	29.4	29.4 (11)	21.3	21.8	
SAARC							39.9	40.3	40.3 (08)	33.7	30.5	26.4 (11)
Central Asia							20.5	18.4	15.7 (11)	11.5	12.6	11.7 (11)
Pacific island dev. econ.							29.9	29.4	30.6 (07)			
Low income econ.							42.0	40.5	35.5 (11)	30.2	24.5	27.7 (11)
Lower middle income econ.							33.7	33.4	31.1 (10)	26.8	25.2	23.0 (11)
Upper middle income econ.							22.9	18.9	17.1 (11)	16.2	17.3	15.0 (11)
High income econ.							22.4	20.5	18.2 (11)	16.0	14.5	14.1 (11)
Africa							**37.8**	**39.2**	**39.3 (11)**	**21.5**	**22.9**	**22.2 (11)**
Europe							**14.9**	**14.2**	**13.2 (11)**	**12.3**	**11.7**	**11.3 (11)**
Latin America and Carib.							**25.2**	**23.2**	**21.3 (11)**	**17.5**	**16.5**	**15.9 (11)**
North America							**15.2**	**14.4**	**13.8 (11)**	**14.9**	**15.2**	**14.1 (11)**
World							**26.4**	**25.3**	**24.2 (11)**	**18.0**	**18.1**	**17.3 (11)**

C.3.2 Per capita public expenditure on education

	Public expenditure per pupil											
	Primary education				Secondary education				Tertiary education			
	% of GDP per capita											
	2000	2005	2007	Latest	2000	2005	2007	Latest	2000	2005	2007	Latest
East and North-East Asia												
China												
DPR Korea												
Hong Kong, China		14.4	12.3	14.8 (11)		19.2	16.0	17.7 (11)		52.3	37.8	25.8 (11)
Japan	21.3	22.0	21.7	23.7 (10)	20.9	22.2	22.4	24.3 (10)	17.4	19.0	20.2	25.3 (10)
Macao, China	8.3				11.2				60.3	22.0	16.3	23.4 (10)
Mongolia			13.7	18.9 (11)				16.7 (11)				3.4 (11)
Republic of Korea		17.5	17.1	23.3 (09)		21.9	22.2	23.8 (09)		8.7	9.1	13.2 (09)
South-East Asia												
Brunei Darussalam				5.1 (10)				7.8 (10)				32.0 (10)
Cambodia	5.8			6.8 (10)								27.4 (10)
Indonesia			11.5	8.7 (11)			9.5	7.6 (11)			23.7	23.7 (11)
Lao PDR		9.7							69.6			
Malaysia	12.6		11.4	14.1 (10)	21.9		13.9	18.8 (10)	81.6		48.5	47.3 (10)
Myanmar												10.8 (11)
Philippines	12.0	8.3	8.7	9.0 (08)	10.2	8.8	8.8	9.1 (08)	14.4	11.1	9.2	9.6 (08)
Singapore				12.3 (10)				18.8 (10)				27.5 (12)
Thailand	18.1			24.4 (09)				27.0 (11)	36.5	25.9		22.3 (11)
Timor-Leste												64.3 (09)
Viet Nam				27.6 (10)								43.4 (10)
South and South-West Asia												
Afghanistan												
Bangladesh			10.3	8.8 (09)	10.6		14.2	13.7 (11)	42.2		36.4	19.4 (11)
Bhutan	10.1			9.6 (11)	72.8			31.9 (11)	405.1			67.8 (11)
India	14.6			7.3 (10)	25.0	16.9		13.8 (10)	95.6	58.4		69.7 (10)
Iran (Islamic Rep. of)		11.8	19.1	15.0 (10)		12.4	22.4	22.8 (10)		23.5	27.9	19.2 (10)
Maldives		16.2		17.7 (08)								
Nepal	10.3			17.8 (09)	11.5			13.4 (09)	141.3			39.2 (10)
Pakistan												
Sri Lanka				5.8 (11)				8.3 (11)				31.8 (11)
Turkey												26.9 (06)
North and Central Asia												
Armenia												7.7 (11)
Azerbaijan									15.9	13.5	9.6	19.6 (10)
Georgia				13.3 (11)				15.5 (08)				12.3 (11)
Kazakhstan										5.6	7.9	10.2 (09)
Kyrgyzstan									15.7	21.9	22.6	18.9 (10)
Russian Federation									10.9	12.6		14.2 (08)
Tajikistan										11.2	9.5	12.1 (11)
Turkmenistan												
Uzbekistan												
Pacific												
American Samoa												
Australia	16.7	17.9	17.5	20.1 (09)	13.9	18.6	17.5	18.7 (09)	25.9	21.7	20.4	20.5 (09)
Cook Islands												
Fiji				15.7 (11)				5.7 (11)				9.7 (11)
French Polynesia												
Guam												
Kiribati	24.8											
Marshall Islands												
Micronesia (F.S.)												
Nauru												
New Caledonia												
New Zealand	20.0	19.0	17.4	21.9 (10)	22.4	21.1	19.3	23.6 (10)		25.2	28.1	31.4 (10)
Niue												
Northern Mariana Islands												
Palau												
Papua New Guinea												
Samoa	8.2				9.6				137.0			
Solomon Islands				13.1 (10)								
Tonga												
Tuvalu												
Vanuatu	13.3			17.0 (09)	61.4				145.9			
Asia and the Pacific												
Developed countries												
Developing countries												
LLDC												
LDC												
ASEAN												
ECO												
SAARC												
Central Asia												
Pacific island dev. econ.												
Low income econ.												
Lower middle income econ.												
Upper middle income econ.												
High income econ.												
Africa												
Europe												
Latin America and Carib.												
North America												
World												

C.4. Research and development

Research and development (R&D) is a critical element in the transition towards a knowledge-based economy. It also contributes to increased productivity, which means that more output can be produced from a given set of inputs. Because R&D leads to new and innovative products and processes, businesses undertake R&D to have a competitive advantage. Governments also sponsor R&D to encourage both basic and applied research in diverse fields, including new medicines and cleaner energy sources.

In the Asian and Pacific region, China and Japan have the largest expenditures on R&D.

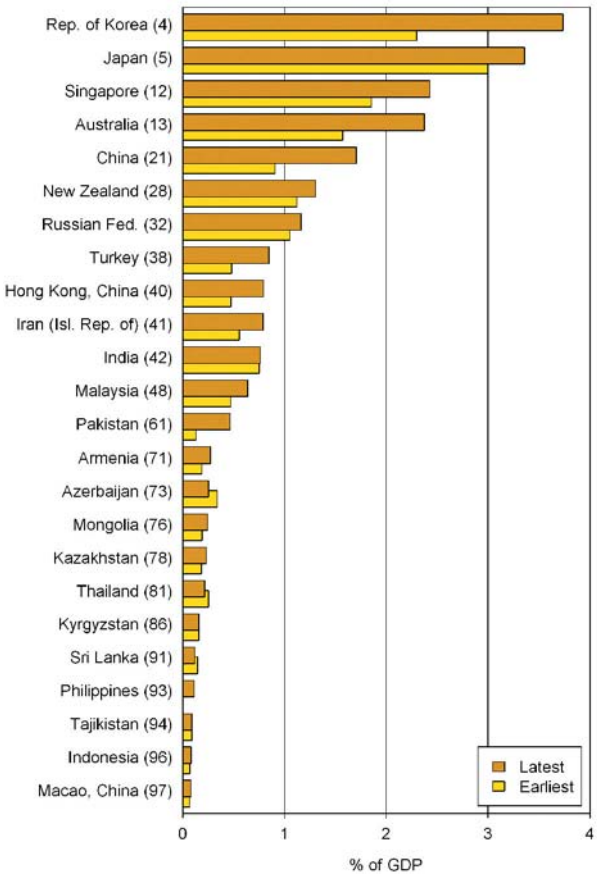
China spent more than $140 billion 2005 purchasing power parity (PPP) on R&D in the latest year (2009), by far the largest investor in this area, followed by Japan, with close to $127 billion (2005 PPP, 2009). The region's other large investors in R&D include the Republic of Korea ($49 billion, 2005 PPP, 2010) and the Russian Federation ($23 billion, 2005 PPP, 2010). Investment in R&D is critical for these countries to maintain their competitive advantage.

There are significant variations between countries in the region with regard to the level of spending. Of those countries for which recent data exist, Kyrgyzstan, Mongolia and Tajikistan each spent between $10 million (2005 PPP) and $23 million (2005 PPP) in 2009, which follows the global pattern of developed countries generally carrying out more R&D. This might be because developed countries are more highly industrialized and companies must continually improve their production processes and products to remain competitive.

Some countries in the Asian and Pacific region are among the world's leaders in terms of expenditure on R&D as a share of GDP.

The amount of resources invested in R&D as a share of total GDP reflects the relative importance of R&D in the national economy. Many countries have set a target of investing 1 per cent of their GDP in R&D, and some developed countries set their target at 3 per cent. Among the world's top 25 countries that spent the greatest share of their GDP on R&D, 5 are in the Asian and Pacific region: Republic of Korea (3.7 per cent); Japan (3.4 per cent); Australia (2.4 per cent); Singapore (2.4 per cent); and China (1.7 per cent). The remainder of the top spenders on the list, with the exception of Israel and the United States, are in Europe. The above pattern is the same when expenditure on R&D is expressed in 2005 PPP per capita with the exception of China, which in this case is not one of the top 25 countries. On the other hand, investment in R&D in many countries in the region remains relatively low. For instance, of those countries and areas for which recent data

Figure C.4-1
Expenditure on research and development as a share of GDP, Asia and the Pacific, earliest (2000 or 2001) and latest year (2006-2010)



Note: The number in the parentheses next to the country name indicates the global ranking by expenditure on research and development as a share of GDP for data between 2006 and 2010.

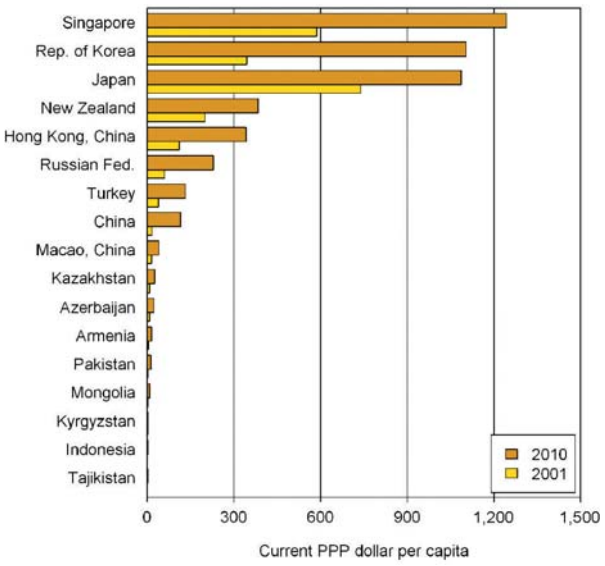
exist, Azerbaijan, Indonesia, Kazakhstan, Kyrgyzstan, Mongolia, the Philippines, Sri Lanka, Tajikistan and Thailand along with Macao, China, spent between 0.1 per cent and 0.2 per cent of their respective GDPs on R&D (data for 2010 or most recent year since 2006).

The inclusion of China in the top 25 countries in the world for expenditure on R&D as a share of GDP is relatively recent, however; in 2000, China ranked thirty-second in the world of the 86 countries for which data were available. The Republic of Korea also moved from being ranked ninth in 2000 to third in 2010. In contrast, over the same time period, the Russian Federation fell out of the top 25 to be ranked thirty-second in 2010.[1]

Growth in R&D spending in Asia and the Pacific may indicate the economic and social transition that many parts of the region have been going through. Examples of countries and areas that have more than doubled their expenditure on R&D in current PPP$ per capita in the last decade are China, the Republic of Korea, the Russian Federation, Turkey and Hong Kong, China.

Furthermore, while only a few of the developed countries in the region are classified as world leaders in terms of expenditure on R&D, the benefits of R&D can be shared across the region from developed to developing countries, which can be done through trade in new products and people-to-people transfers. This suggests that the increased spending on R&D in aggregate in the region over the last decade is good news for all countries.

Figure C.4-2
Gross domestic expenditure on research and development, current PPP$ per capita, Asia and the Pacific, 2001 and latest (2009-2010)



Note: Data for 2010 include observations from 2009 when 2010 data are missing. Data for 2001 include observation for 1999 for New Zealand

Almost 40 per cent of all researchers in the world are located in Asia and the Pacific.

Human resources in R&D provide another measure of total R&D in each country. In the region, many of the countries with the highest R&D spending also have higher numbers of researchers. Measured by the number of full-time-equivalent researchers per million inhabitants, some countries in the region are among the top 20 in the world, including Singapore (6,173), the Republic of Korea (5,481), Japan (5,180), New Zealand (4,951) and Australia (4,294). In aggregate, the Asian and Pacific region was home to 38 per cent of the world's researchers in 2009, while 31 per cent were located in Europe and 27 per cent in the Americas.[2]

On average, female researchers are underrepresented in R&D in the region.

In a headcount of researchers in R&D, women made up about half of the entire research force in several countries in the region, which means that these countries have reached, or have become close to reaching, gender parity in the last decade. These countries include Georgia (52.7 per cent), Azerbaijan (52.4 per cent), the Philippines (52.3 per cent), Thailand (51.2 per cent), Kazakhstan

[1] Data are for either 2000 or the most recent year available since 1996.

[2] UNESCO Institute for Statistics, "Human resources in R&D", UIS Fact Sheet, No. 21 (December 2012). Available from www.uis.unesco.org/FactSheets/Pages/ScienceTech.aspx (accessed 13 June 2013).

(48.5 per cent), Mongolia (48.1 per cent) and Armenia (45.7 per cent). On the other hand, some of the countries with the highest number of full-time-equivalent researchers have the lowest female representation, including Japan and the Republic of Korea. In fact, in a headcount of total R&D personnel in each of these countries, women represented 16.7 per cent in the Republic of Korea (2010) and 13.6 per cent in Japan (2009).

The lower levels of female representation in these countries with a relatively large R&D force have an obvious impact on the regional picture; in 2009, only 18.2 per cent of personnel employed in R&D in Asia were female. In comparison, the figure was 42.5 per cent in Latin America and the Caribbean, 39.2 per cent in the Pacific, 34.5 per cent in Africa and 34.0 per cent in Europe.[3] These regional averages also reflect a global underrepresentation of women in R&D.

Figure C.4-3
Number of full-time-equivalent researchers per million population, Asia and the Pacific, latest year (2005-2010)

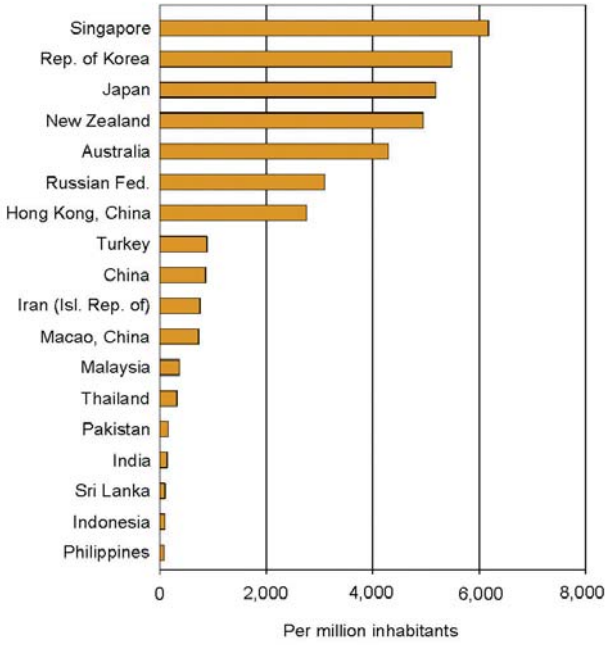
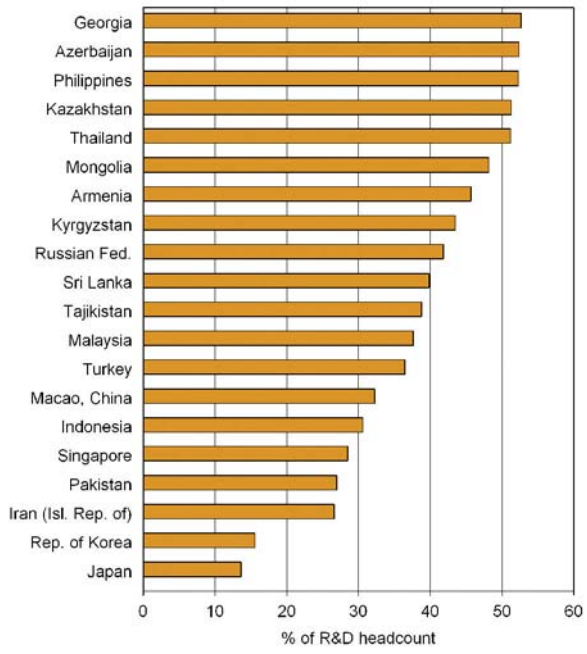


Figure C.4-4
Number of women researchers as a share of the headcount of researchers working in research and development, Asia and the Pacific, latest year (2005-2010)



[3] UNESCO Institute for Statistics, "Women in science", UIS Fact Sheet, No. 23 (December 2012). Available from www.uis.unesco.org/FactSheets/Pages/ScienceTech.aspx (accessed 13 June 2013).

Further reading

UNESCO Institute for Statistics and Directorate for Science, Technology and Industry of the Organisation for Economic Cooperation and Development. "Report of the United Nations Educational, Scientific and Cultural Organization and the Organisation for Economic Co-operation and Development on statistics of science and technology". E/CN.3/2004/15 (a report to the United Nations Statistical Commission). Available from www.uis.unesco.org/Library/Pages/DocumentMorePage.aspx?docIdValue=203&docIdFld=ID.

United Nations Educational, Scientific and Cultural Organization. *UNESCO Science Report 2010: The Current Status of Science around the World*. Paris, 2010. Available from www.uis.unesco.org/Library/Pages/DocumentMorePage.aspx?docIdValue=398&docIdFld=ID.

_____. *Science, Technology and Gender: An International Report*. Paris, 2007. Available from http://unesdoc.unesco.org/images/0015/001540/154045e.pdf.

Technical notes

Gross domestic expenditure on R&D (percentage of GDP, current PPP dollars per capita, 1,000 2005 PPP dollars)

The expenditure on R&D performed on the national territory during a given period. It includes R&D funds allocated by: (a) firms, organizations and institutions whose primary activity is the market production of goods and services for sale to the general public; (b) the central (federal), regional/state/provincial or local government authorities, including all departments, offices and other bodies that furnish, but normally do not sell to the community, those common services, other than higher education; (c) institutions of higher education comprising all universities, colleges of technology, other institutions of post-secondary education, and all research institutes, experimental stations and clinics operating under the direct control of or administered by or associated with higher education establishments; (d) non-market, private non-profit institutions serving the general public, as well as private individuals and households; and (e) institutions and individuals located outside the political borders of a country, except vehicles, ships, aircraft and space satellites operated by domestic organizations and testing grounds acquired by such organizations, and by all international organizations (except business enterprises), including their facilities and operations within the national borders.

Researchers, full-time equivalents (per million inhabitants)

Researchers are professionals engaged in the conceptualization or creation of new knowledge, products, processes, methods and systems, and in the planning and management of R&D projects. Postgraduate students at the doctoral level (International Standard Classification of Education level 6) who are engaged in R&D are considered researchers. Full-time equivalents represent one person-year; for example, an individual working 30 per cent on R&D is considered 0.3 full-time equivalent.

Women researchers (percentage of R&D headcount)

Female researchers expressed as a percentage of R&D headcount. Headcount data reflect the total number of persons employed in R&D, whether they work part-time or full-time.

Source

Source of R&D data: UIS Data Centre. Collected from R&D surveys. **Data obtained:** for gross domestic expenditure on 25 June 2013; for other indicators on 26 September 2012.

C.4.1 R&D expenditure and human resources for research

	Gross domestic expenditure on research and development						Researchers, full-time equivalents		Women researchers	
	% of GDP		Current PPP dollars per capita		1,000 2005 PPP dollars		Per million inhabitants		% of R&D headcount	
	2000	Latest	2000	Latest	2000	Latest	2000	Latest	2000	Latest
East and North-East Asia										
China	0.9	1.7 (09)	21.3	115.6 (09)	30 405 414	140 633 061 (09)	547.7	863.2 (09)		
DPR Korea										
Hong Kong, China	0.5	0.8 (09)	122.5	342.3 (09)	936 864	2 180 195 (09)	1 139.3	2 759.5 (09)		
Japan	3.0	3.4 (09)	786.6	1 086.5 (09)	110 017 157	126 872 343 (09)	5 150.9	5 179.9 (09)		13.6 (09)
Macao, China		0.1 (09)		39.7 (09)		19 242 (09)		734.0 (09)		32.2 (09)
Mongolia	0.2	0.2 (09)	3.7	9.2 (09)	9 988	22 754 (09)				48.1 (09)
Republic of Korea	2.3	3.7 (10)	403.6	1 103.8 (10)	20 213 193	49 447 736 (10)	2 356.5	5 481.5 (10)	10.2	16.7 (10)
South-East Asia										
Brunei Darussalam										
Cambodia										
Indonesia	0.1	0.1 (09)	1.6	3.4 (09)	378 907	731 220 (09)	210.8	89.6 (09)		30.6 (05)
Lao PDR										
Malaysia	0.5	0.6 (06)	42.5	78.6 (06)	1 121 062	2 024 660 (06)	274.3	364.6 (06)		37.7 (06)
Myanmar	0.1									
Philippines		0.1 (07)		3.8 (07)		321 040 (07)		78.5 (07)		52.3 (07)
Singapore	1.9	2.4 (09)	642.4	1 243.0 (09)	2 837 929	5 602 669 (09)	4 243.8	6 173.2 (09)		28.5 (09)
Thailand	0.3	0.2 (07)	12.3	16.5 (07)	874 898	1 050 668 (07)		315.5 (07)		51.2 (07)
Timor-Leste										
Viet Nam										
South and South-West Asia										
Afghanistan										
Bangladesh										
Bhutan										
India	0.7	0.8 (07)	11.4	20.7 (07)	13 556 534	22 882 897 (07)	110.0	135.8 (05)		
Iran (Islamic Rep. of)		0.8 (08)		89.0 (08)		5 924 603 (08)		750.7 (08)		26.6 (08)
Maldives										
Nepal										
Pakistan	0.1	0.5 (09)	2.1	12.0 (09)	342 090	1 867 875 (09)		161.9 (09)		27.0 (09)
Sri Lanka	0.1	0.1 (08)	3.9	5.2 (08)	82 624	97 235 (08)	135.3	96.3 (08)	24.6	39.9 (08)
Turkey	0.5	0.8 (10)	44.4	131.8 (10)	2 995 787	7 709 471 (10)	362.8	884.4 (10)	34.3	35.8 (10)
North and Central Asia										
Armenia	0.2	0.3 (09)	3.8	14.2 (09)	13 037	40 029 (09)			51.6	45.7 (09)
Azerbaijan	0.3	0.2 (09)	7.4	23.2 (09)	67 336	191 951 (09)			48.9	52.4 (09)
Georgia	0.2		4.4	6.2 (05)	23 803	27 805 (05)				52.7 (05)
Kazakhstan	0.2	0.2 (09)	8.6	26.4 (09)	145 661	380 673 (09)			50.4	48.5 (09)
Kyrgyzstan	0.2	0.2 (09)	2.1	3.7 (09)	11 540	17 661 (09)			48.5	43.4 (09)
Russian Federation	1.0	1.2 (10)	71.5	229.4 (10)	13 228 588	23 347 414 (10)	3 450.7	3 092.3 (10)	44.1	41.7 (10)
Tajikistan		0.1 (09)		1.7 (09)		10 741 (09)				38.8 (06)
Turkmenistan										
Uzbekistan										
Pacific										
American Samoa										
Australia	1.6	2.4 (08)	414.4	884.5 (08)	8 915 679	17 557 231 (08)	3 444.0	4 293.9 (08)		
Cook Islands										
Fiji										
French Polynesia										
Guam										
Kiribati										
Marshall Islands										
Micronesia (F.S.)										
Nauru										
New Caledonia										
New Zealand		1.3 (09)		383.3 (09)		1 384 384 (09)		4 950.7 (09)		
Niue										
Northern Mariana Islands										
Palau										
Papua New Guinea										
Samoa										
Solomon Islands										
Tonga										
Tuvalu										
Vanuatu										
Asia and the Pacific										
Developed countries										
Developing countries										
LLDC										
LDC										
ASEAN										
ECO										
SAARC										
Central Asia										
Pacific island dev. econ.										
Low income econ.										
Lower middle income econ.										
Upper middle income econ.										
High income econ.										
Africa										
Europe										
Latin America and Carib.										
North America										
World										

D.1. Income poverty and inequality

The Asian and Pacific region[1] still has the largest absolute number of people living in extreme poverty of all global regions – in 2011, there were 743 million people living in extreme poverty in developing countries in Asia and the Pacific. However, there are substantial variations between subregions and countries in terms of the proportion of people living in extreme poverty. Despite a steady decline in extreme poverty over the past two decades, many countries have been experiencing a greater level of income inequality, which constrains domestic markets and threatens shared prosperity. Poverty and inequality are the primary focus for the global development agenda and will remain a focus for the development agenda beyond 2015.

The Asian and Pacific region made impressive progress towards reducing extreme poverty between 1990 and 2011, but has been much slower in reducing the number of people living in near poverty.

In 1990, more than 51 per cent of the population in the Asian and Pacific region was living in extreme poverty (living on less than $1.25 per day in 2005 PPP). However, thanks to the impressive growth performance of several emerging countries in the region, the incidence of poverty has fallen by more than half, leaving less than 20 per cent of the population in extreme poverty in 2011. The overall global population living in extreme poverty has decreased by approximately 1 billion people between 1990 and 2011. Asia and the Pacific has lead the global success in the reduction of poverty over the last two decades. In other words, the population living in extreme poverty in the region declined from about 1.6 billion in 1990 to 0.7 billion in 2011, despite an overall population growth of approximately 0.9 billion in the same period. This immense decline and the region's lead on the global level have been mainly due to the poverty reduction in China and India, as these two countries alone have lifted 650 million people out of extreme poverty. This significant drop in numbers of people living in extreme poverty accounts for unprecedented poverty reduction on the global level.

The incidence of extreme poverty varies considerably at the subregional level. The highest incidence of extreme poverty is recorded in South and South-West Asia (28.7 per cent in 2010), whereas the lowest is in North and Central Asia (1.0 per cent in 2011). It is noteworthy that, since 1990, East and North-East Asia and South-East Asia have recorded the fastest absolute reductions in poverty rates compared with those in other subregions.

Statistics on poverty reveal that there are also large numbers of poor people living just above the extreme poverty line, in near extreme poverty, who cannot manage a decent daily livelihood. If $2 per day (2005 PPP) is used as a benchmark, the number of poor in the Asian and Pacific region decreased from 2.4 billion in 1990 to an estimated 1.6 billion in 2011. About 900 million people living between $1.25 and $2 per day remain critically vulnerable to extreme poverty. At present, estimates show that about 40 per cent of the population of the region lives on less than $2 per day. For example, in South and South-West Asia, the population living on or less than $2 per day increased from 985 million in 1990 to 1.1 billion in 2010, which accounted for about 62 per cent of the region's poor. However, out of this number, India alone accounted for 834 million people living below $2 in 2010.

There are substantial variations across countries in terms of the proportion of the population living in extreme poverty, as well as the success of the reduction of poverty incidence.

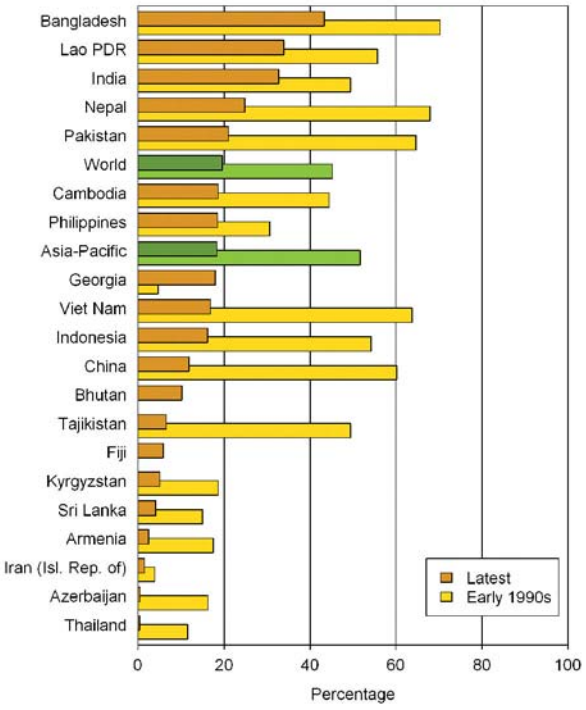
The region is made up of countries at different stages of development. In particular, two of the world's most populous countries, namely China and India, have been able to significantly reduce extreme poverty over the last two decades. The percentage of people living in extreme poverty in China was reduced from 60.2 per cent in 1990 to 11.8 per cent in 2009. In India, the extreme

[1] The present topic covers only developing countries in the region and therefore does not include Australia, Japan or New Zealand.

poverty rate was reduced from 49.4 per cent in 1994 to 32.7 per cent in 2010. Similarly, Indonesia experienced a very large decline in the extreme poverty rate, from 54.3 per cent in 1990 to 16.2 per cent in 2011, and Cambodia also realized a steady decline, from 44.5 per cent in 1994 to 18.6 per cent in 2009.

Several other countries in the region have also significantly lowered poverty rates in recent years in comparison with the rates of the early 1990s, including Fiji, Kyrgyzstan, Tajikistan, Turkmenistan and Viet Nam. Moreover, the incidence of extreme poverty is below 5 per cent in a number of developing countries, including Armenia, Azerbaijan, Kazakhstan, Malaysia, the Russian Federation, Thailand and Turkey.

Figure D.1-1
Percentage of population living in poverty (below $1.25 per day, 2005 PPP), Asia and the Pacific, early 1990s and latest



National statistics on the incidence of poverty by using national poverty lines indicate a significant reduction in poverty over the last two decades.

Statistical information on national poverty rates is crucial to show, and to create a better understanding of, a country's human development condition. The indicator on the population living below the national poverty line measures poverty as not having the minimum level of income/consumption necessary to satisfy basic human requirements at a particular time in a particular place. Therefore, poverty lines are different across countries and over time, and are based on national currencies. These poverty estimates are not comparable across countries or with the previously mentioned indicators (that is, the population living below $1.25 or $2 per day, 2005 PPP), but are important for measuring and monitoring the progress of national level efforts to eradicate poverty through developmental policies.

For example, according to national poverty line estimates, the proportion of the population living in poverty was reduced in China from 6.0 per cent in 1996 to 4.6 per cent in 1998, and in India from 37.2 per cent in 2005 to 29.8 per cent in 2010. Great success was also achieved by Thailand, where poverty declined from 58.1 per cent in 1990 to 13.2 per cent in 2011. In the early 1990s, during the period of transition from centrally planned to market economies, several countries of the North and Central Asian subregion experienced a high incidence of poverty. Nevertheless, all countries with available data were subsequently able to reduce poverty rates; for example, in Azerbaijan, the poverty rate fell from 49.6 per cent in 2001 to 7.6 per cent in 2011, and in Kazakhstan the rate fell from 46.7 per cent in 2001 to 5.3 per cent in 2011.

The severity of the poverty of those living below the poverty line has abated but challenges remain in least developed countries.

Many countries in the region have undertaken massive government-led anti-poverty programmes to address the challenges of extreme poverty, including cash transfers, job guarantee programmes and financial-inclusion measures. The poverty gap indicator shows how far the extreme poor fall below the poverty line and reflects both depth and incidence of poverty (the mean shortfall of the total population from the

global poverty line of $1.25 per day, expressed as a percentage of the poverty line).

According to the latest information, the poverty gap measure has narrowed during the last decade and a half. Nevertheless, the highest poverty gap ratios can be observed for least developed countries, indicating pockets of extreme poverty among the poorest and most vulnerable countries in the region. The poverty gap ratios are the highest in Bangladesh at 11.2 per cent in 2010, the Lao People's Democratic Republic at 9 per cent in 2008 and India at 7.5 per cent in 2010, whereas for countries in North and Central Asia ratios are generally very low (except Georgia).

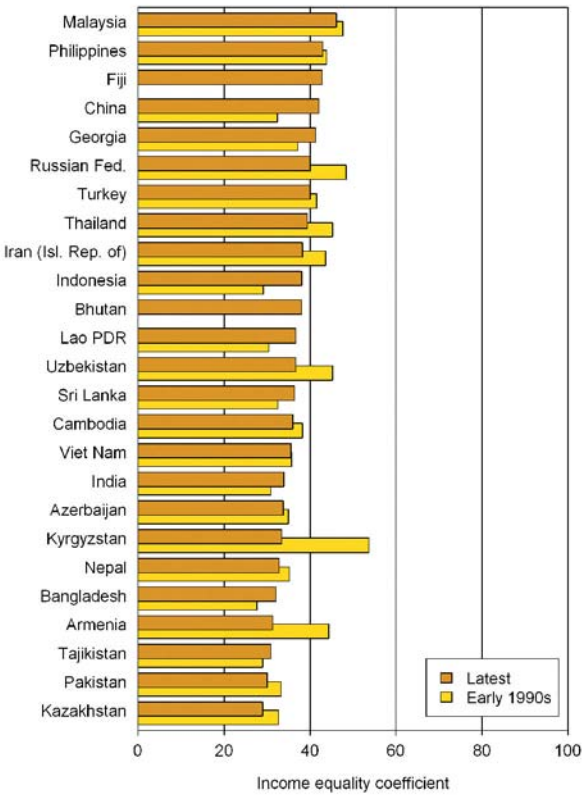
The poverty gap ratio in China fell from 20.7 per cent in 1990 to 2.8 per cent in 2009; in India, the gap fell from 13.6 per cent in 1994 to 7.5 per cent in 2010. Overall, the ratio implies that, if the real incomes of poor households increase on average by 2.8 per cent in China or 7.5 per cent in India, they will no longer fall below the global poverty line.

In some countries, inequality is increasing and threatening shared prosperity.

The Asian and Pacific region has witnessed a steady decline in poverty rates, but at the same time, some countries have experienced greater levels of income inequality (see figure D.1-2). Inequality not only diminishes the poverty-reducing impact of economic growth, but also deprives hundreds of millions of people access to the means to develop their economic potential by denying them adequate health care, education, energy, credit, land and so forth. From the early 1990s to the late 2000s, the Gini index worsened from 32.4 to 42.1 for China, from 30.8 to 33.9 for India, and from 29.2 to 38.1 for Indonesia, while it decreased for other countries such as Cambodia, Kyrgyzstan, Malaysia, Nepal, the Philippines, Thailand and Uzbekistan. It is noteworthy, however, that the Gini index for Malaysia (46.2) and the Philippines (43.0) remained among the highest in the region.

The difference between the proportion of national income/consumption accrued by the richest quintile of the population and that accrued by the poorest quintile of the population provides another way of assessing income equality. On the one hand, the poorest quintile (bottom 20 per cent) of the population receives a small share in such countries as Malaysia (4.5 per cent in 2009) and China (4.7 per cent in 2009), but they do relatively better in India (8.5 per cent in 2010), Bangladesh (8.9 per cent in 2010) and Pakistan (9.6 per cent in 2008). On the other hand, the richest quintile (top 20 per cent) of the population receives about a 50 per cent share of the national income/consumption in such countries as China (47.9 per cent in 2005), Fiji (49.6 per cent in 2009), the Philippines (49.7 per cent in 2009) and Malaysia (51.5 per cent in 2009).

Figure D.1-2
Gini index, Asia and the Pacific, early 1990s and latest



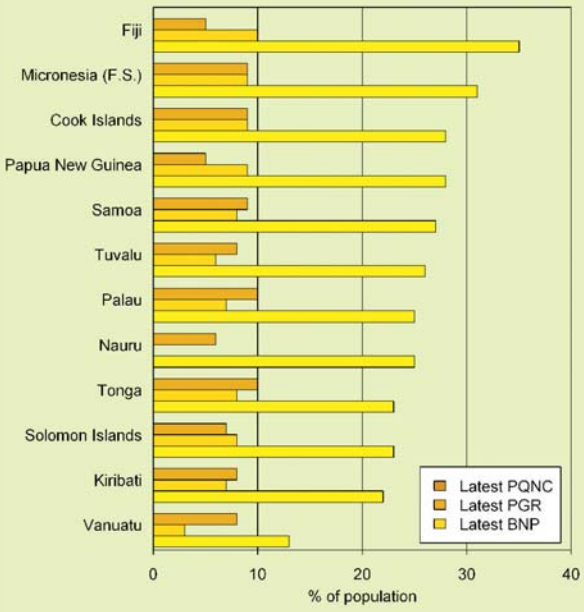
Box D.1-1
Mixed poverty and inequality manifestations in the Pacific

For the Pacific, there is a lack of internationally comparable statistics on poverty rates. However, in 2012, the Pacific Islands Forum Secretariat produced a report on the region's progress towards achieving Millennium Development Goal 1 to eradicate extreme poverty and hunger. In the Pacific, poverty is viewed from the perspective of hardship and a lack of opportunity, in other words, the "poverty of opportunity."[a] The report states that poverty is measured by the percentage of people living below the basic needs poverty line.[b] It is important to note that extreme poverty is rare in most Pacific island developing economies (PIDE).

According to the basic needs poverty line for 2009, Papua New Guinea, the most populous PIDE, had about 2 million people living in poverty, which represents the vast majority of the subregion's poor. There are a further 0.6 million poor living in the Pacific, half of which is accounted for by the poor in Fiji. Great variability exists in the incidence of basic needs poverty among PIDE; the lowest basic needs poverty rate was recorded in Vanuatu (13 per cent in 2010), followed by Kiribati (22 per cent in 2006), and the highest rates were in the Federated States of Micronesia (31 per cent in 2005) and Fiji (35 per cent in 2008). Furthermore, from the available data it can be seen that the indicated poverty rates increased compared with the last recorded data in the Federated States of Micronesia, Samoa, Tonga and Tuvalu, but decreased in Fiji and Papua New Guinea. The poverty gap ratio in PIDE ranges between 3 per cent in Vanuatu (2010) and 10 per cent in Fiji (2008), with most PIDE in the subregion showing a poverty gap ratio of either 8 per cent or 9 per cent.

The share of national income/consumption of the poorest quintile is at 10 per cent or lower for all PIDE. The shares are extremely low for the Marshall Islands (3 per cent in 2002), and Fiji and Papua New Guinea (5 per cent in 2008 and 2009, respectively). The Gini index increased between the previous and the most recent measurements for PIDE such as Fiji, Samoa and Tuvalu, while it fell for the Federated States of Micronesia and Vanuatu. The high Gini indices observed in most PIDE are a clear indication that the improvement in the poverty index does not necessarily translate into equitable development, which is similar to other parts of Asia.

Basic needs poverty (BNP), poverty gap ratio (PGR) and the share of the poorest quintile in national consumption (PQNC) for selected Pacific island developing economies, latest



Abbreviations: BNP, basic needs poverty (percentage); PGR, poverty gap ratio (percentage); PQNC, poorest quintile in national consumption (percentage).

Source: Pacific Islands Forum Secretariat, *2012 Pacific Regional MDGs Tracking Report* (2012). Available from www.forumsec.org/resources/uploads/attachments/documents/MDG%20Track%20Rpt%20web%2020122.pdf (accessed 3 June 2013).

[a] Pacific Islands Forum Secretariat, 2012 Pacific Regional MDGs Tracking Report (2012). Available from www.forumsec.org/resources/uploads/attachments/documents/MDG%20Track%20Rpt%20web%2020122.pdf.

[b] The basic needs poverty line consists of two elements. The first element takes into consideration the minimum income needed to provide the minimum daily intake of calories for survival, and the second takes into consideration the allowance for basic, non-food expenditures. Because the calculation consists of different costs and prices for each country, the basic needs poverty line is not strictly comparable between countries.

Further reading

Milanovic, Branco. *Worlds Apart: Measuring International and Global Inequality.* Princeton University Press, 2005.

United Nations. *Rethinking Poverty: Report on the World Social Situation 2010.* Sales No. E.09.IV.10.

World Bank. PovcalNet: an online poverty analysis tool. 2013. Available from http://iresearch.worldbank.org/Povcalnet/index.htm.

Technical notes

PPP defined

An international dollar has the same purchasing power that the United States dollar has in the United States of America. Costs in local currency units are converted to international dollars using PPP exchange rates. A PPP exchange rate is the number of units of a country's currency required to buy the same amount of goods and services in the domestic market as one United States dollar would buy in the United States. An international dollar is therefore a hypothetical currency that is used as a means of translating and comparing costs from one country to the other using a common reference point, the United States dollar.

Population living in poverty, $1.25 per day in 2005 PPP (percentage of population, millions)

The population living on less than $1.25 per day, measured in 2005 PPP. The threshold of $1.25 per day roughly indicates the global poverty line. **Aggregate calculations:** Millennium Development Goal aggregation and imputation methods; weighted averages using population (WPP2012) as weight (percentage of population); total population for each regional and subregional grouping (millions).

Population living below the national poverty line (percentage of population, millions)

The national poverty line is defined by each country. Therefore, the figures are not comparable across countries and may not be comparable over time within a country. **Aggregate calculations:** Millennium Development Goal aggregation and imputation methods; weighted averages using population (WPP2012) as weight (percentage of population); total population for each regional and subregional grouping (millions).

Poverty headcount ratio at $2 per day in 2005 PPP (percentage of population, millions)

The population living on less than $2 per day, measured in 2005 PPP. As a result of revisions in PPP exchange rates, poverty rates for individual countries cannot be compared with poverty rates reported in earlier editions. **Aggregate calculations:** Millennium Development Goal aggregation and imputation methods; weighted averages using population (WPP2012) as weight (percentage of population); the total population for each regional and subregional grouping (millions).

Poverty gap (percentage of poverty line)

The mean shortfall of the total population from the global poverty line ($1.25 per day, 2005 PPP) expressed as a percentage of the poverty line. This measure reflects depth of poverty as well as its incidence. Non-poor populations are defined as having zero shortfall.

Income/consumption of poorest quintile (percentage of income/consumption)

National income or consumption accrued by the poorest income quintile as a percentage of the total income or consumption.

Income/consumption of richest quintile (percentage of income/consumption)

National income or consumption accrued by the richest income quintile as a percentage of total income or consumption.

Gini index (income equality coefficient)

Measures the extent to which the income distribution (or, in some cases, consumption expenditure) within an economy deviates from a perfect income equality. A Gini index of 0 represents perfect equality and a Gini index of 100 represents absolute inequality.

Source

Source of poverty data (other than poverty gap and income/consumption of poorest quintile): World Bank, poverty and inequality database. Data are based on primary household survey data obtained from government statistical agencies and World Bank country departments. Data for high-income economies are from the Luxembourg Income Study Database. **Data obtained:** 14 August 2013.

Source of poverty gap and income/consumption of poorest quintile data: Millennium Indicators Database. The indicator is calculated by the World Bank Development Research Group based on microlevel data from nationally representative household surveys that are conducted by national statistical offices or by private agencies under the supervision of government or international agencies and obtained from government statistical offices and World Bank Group country departments. Global poverty indicators are adjusted for each country using an internationally comparable poverty line, enabling comparisons across countries to be made. **Data obtained:** 2 August 2013.

D.1.1 Income poverty rates

	Population living in poverty ($1.25 per day in 2005 PPP)			Poverty headcount ratio at $2 per day in 2005 PPP			Population living below the national poverty line		
	% of population			% of population			% of population		
	Earliest	2000	Latest	Earliest	2000	Latest	Earliest	2000	Latest
East and North-East Asia	**60.2 (90)**	**47.8 (97)**	**11.8 (09)**	**84.6 (90)**	**70.8 (97)**	**27.2 (09)**			
China	60.2 (90)	47.8 (97)	11.8 (09)	84.6 (90)	70.8 (97)	27.2 (09)	6.0 (96)	4.6 (98)	
DPR Korea									
Hong Kong, China									
Japan									
Macao, China									
Mongolia									27.4 (12)
Republic of Korea									
South-East Asia	**45.5 (90)**	**33.8 (97)**	**13.4 (11)**	**70.9 (90)**	**60.8 (97)**	**34.5 (11)**	**32.1 (90)**	**25.8 (97)**	**15.3 (12)**
Brunei Darussalam									
Cambodia	44.5 (94)		18.6 (09)	75.2 (94)		49.5 (09)			20.5 (11)
Indonesia	54.3 (90)	47.7 (99)	16.2 (11)	84.6 (90)	81.6 (99)	43.3 (11)	17.6 (96)	23.4 (99)	12.0 (12)
Lao PDR	55.7 (92)	49.3 (97)	33.9 (08)	84.8 (92)	79.9 (97)	66.0 (08)	45.0 (92)	38.6 (97)	27.6 (08)
Malaysia	1.6 (92)	0.5 (97)	0.0 (09)	11.2 (92)	6.8 (97)	2.3 (09)	12.4 (92)	6.1 (97)	1.7 (12)
Myanmar									
Philippines	30.7 (91)	21.6 (97)	18.4 (09)	55.4 (91)	43.8 (97)	41.5 (09)		24.9 (03)	26.5 (09)
Singapore									
Thailand	11.6 (90)	2.1 (98)	0.4 (10)	37.1 (90)	15.3 (98)	4.1 (10)	58.1 (90)	38.7 (98)	13.2 (11)
Timor-Leste								36.3 (01)	49.9 (07)
Viet Nam	63.7 (93)	49.7 (98)	16.9 (08)	85.7 (93)	78.3 (98)	43.4 (08)			20.7 (10)
South and South-West Asia	**52.4 (90)**	**44.5 (97)**	**28.7 (10)**	**79.1 (90)**	**74.6 (97)**	**61.6 (10)**	**57.7 (91)**	**44.2 (99)**	**27.8 (10)**
Afghanistan									36.0 (08)
Bangladesh	70.2 (92)	58.6 (00)	43.3 (10)	93.0 (92)	84.4 (00)	76.5 (10)	56.6 (92)	48.9 (00)	31.5 (10)
Bhutan		26.2 (03)	10.2 (07)		49.5 (03)	29.8 (07)			23.2 (07)
India	49.4 (94)		32.7 (10)	81.7 (94)		68.8 (10)			29.8 (10)
Iran (Islamic Rep. of)	3.9 (90)	1.3 (98)	1.5 (05)	13.1 (90)	8.3 (98)	8.0 (05)			
Maldives		25.6 (98)	1.5 (04)		37.0 (98)	12.2 (04)			
Nepal	68.0 (96)	53.1 (03)	24.8 (10)	89.0 (96)	77.3 (03)	57.3 (10)	41.8 (96)	30.9 (03)	25.2 (10)
Pakistan	64.7 (91)	48.1 (97)	21.0 (08)	88.2 (91)	83.3 (97)	60.2 (08)		30.6 (99)	22.3 (06)
Sri Lanka	15.0 (91)	14.0 (02)	4.1 (10)	49.5 (91)	39.7 (02)	23.9 (10)	26.1 (91)	22.7 (02)	8.9 (10)
Turkey	2.1 (94)	2.0 (02)	1.3 (10)	9.8 (94)	9.6 (02)	4.7 (10)		27.0 (02)	18.1 (09)
North and Central Asia	**6.9 (93)**	**4.6 (97)**	**1.0 (11)**	**16.6 (93)**	**13.4 (97)**	**3.3 (11)**		**35.1 (99)**	**7.3 (12)**
Armenia	17.5 (96)	18.0 (99)	2.5 (10)	38.9 (96)	48.8 (99)	19.9 (10)		48.3 (01)	35.0 (11)
Azerbaijan	16.3 (95)	6.3 (01)	0.4 (08)	39.1 (95)	27.1 (01)	2.8 (08)		49.6 (01)	7.6 (11)
Georgia	4.7 (96)	15.7 (97)	18.0 (10)	14.0 (96)	31.6 (97)	35.6 (10)		28.5 (03)	24.7 (09)
Kazakhstan	4.2 (93)	13.6 (01)	0.1 (09)	17.6 (93)	30.3 (01)	1.1 (09)		46.7 (01)	5.3 (11)
Kyrgyzstan	18.6 (93)	31.8 (98)	5.0 (11)	30.1 (93)	60.8 (98)	21.6 (11)			38.0 (12)
Russian Federation	1.5 (93)	2.3 (99)	0.0 (09)	8.3 (93)	10.5 (99)	0.1 (09)		19.7 (02)	11.1 (06)
Tajikistan		49.4 (99)	6.6 (09)		83.7 (99)	27.7 (09)		96.0 (99)	46.7 (09)
Turkmenistan	63.5 (93)	24.8 (98)		85.7 (93)	49.7 (98)				
Uzbekistan									
Pacific									
American Samoa									
Australia									
Cook Islands									
Fiji		29.2 (03)	5.9 (09)		48.7 (03)	22.9 (09)		35.0 (03)	31.0 (09)
French Polynesia									
Guam									
Kiribati									
Marshall Islands									
Micronesia (F.S.)		31.2 (00)			44.7 (00)				
Nauru									
New Caledonia									
New Zealand									
Niue									
Northern Mariana Islands									
Palau									
Papua New Guinea	35.8 (96)			57.4 (96)			37.5 (96)		
Samoa									
Solomon Islands									22.7 (06)
Tonga									
Tuvalu									
Vanuatu									
Asia and the Pacific	**51.7 (90)**	**42.0 (97)**	**18.3 (11)**	**76.8 (90)**	**67.7 (97)**	**40.4 (11)**			
Developed countries									
Developing countries	51.7 (90)	42.0 (97)	18.3 (11)	76.8 (90)	67.7 (97)	40.4 (11)			
LLDC									
LDC	69.8 (92)	61.0 (97)	38.8 (10)	91.8 (92)	86.5 (97)	71.6 (10)	57.1 (92)	50.6 (97)	29.6 (11)
ASEAN	45.5 (90)	33.8 (97)	13.4 (11)	70.9 (90)	60.8 (97)	34.5 (11)	32.1 (90)	25.8 (97)	15.2 (12)
ECO	35.6 (90)	25.1 (97)	7.2 (11)	54.0 (90)	47.3 (97)	26.6 (11)		35.9 (99)	15.7 (12)
SAARC	55.9 (91)	48.5 (97)	31.3 (10)	84.7 (91)	80.8 (97)	66.8 (10)	57.9 (91)	44.7 (99)	28.4 (10)
Central Asia	24.3 (93)			43.3 (93)					
Pacific island dev. econ.									
Low income econ.									
Lower middle income econ.	54.5 (90)	45.1 (97)	27.1 (11)	83.1 (90)	77.6 (97)	59.8 (11)	51.3 (91)	43.0 (97)	23.8 (12)
Upper middle income econ.	47.4 (90)	37.2 (97)	8.1 (10)	70.0 (90)	56.8 (97)	19.2 (10)			
High income econ.									
Africa	**51.5 (90)**	**47.2 (97)**	**40.5 (11)**	**69.5 (90)**	**66.7 (97)**	**61.0 (11)**	**49.8 (92)**	**46.6 (97)**	**38.6 (12)**
Europe									
Latin America and Carib.	**12.8 (90)**	**9.1 (97)**	**5.1 (10)**	**24.9 (90)**	**18.3 (97)**	**10.7 (10)**	**67.7 (90)**	**55.2 (97)**	**28.5 (12)**
North America									
World	**45.2 (90)**	**37.4 (97)**	**19.7 (11)**	**67.2 (90)**	**59.6 (97)**	**39.1 (11)**			

D.1.2 Income poverty – people affected

	Population living in poverty ($1.25 per day in 2005 PPP)		
	Millions		
	Earliest	2000	Latest
East and North-East Asia	**818 (90)**	**426 (02)**	**184 (09)**
South-East Asia	**202 (90)**	**151**	**81 (11)**
South and South-West Asia	**653 (90)**	**616**	**504 (10)**
North and Central Asia	**15 (93)**	**7**	**2 (11)**
Pacific			
Asia and the Pacific	**1 627 (90)**	**1 234**	**743 (11)**
Developed countries			
Developing countries	1 627 (90)	1 234	743 (11)
LLDC			
LDC	143 (92)	138	109 (10)
ASEAN	202 (90)	151	81 (11)
ECO	103 (90)	67 (01)	31 (11)
SAARC	649 (91)	615	503 (10)
Central Asia	17 (93)		
Pacific island dev. econ.			
Low income econ.			
Lower middle income econ.	736 (90)	660	515 (11)
Upper middle income econ.	723 (90)	427	144 (10)
High income econ.			
Africa	**324 (90)**	**383**	**428 (11)**
Europe			
Latin America and Carib.	**57 (90)**	**53**	**30 (10)**
North America			
World	**2 403 (90)**	**1 957**	**1 376 (11)**

	Poverty headcount ratio at $2 per day in 2005 PPP		
	Millions		
	Earliest	2000	Latest
East and North-East Asia	**1 150 (90)**	**768 (02)**	**425 (09)**
South-East Asia	**314 (90)**	**298**	**208 (11)**
South and South-West Asia	**985 (90)**	**1 085**	**1 080 (10)**
North and Central Asia	**36 (93)**	**22**	**7 (11)**
Pacific			
Asia and the Pacific	**2 417 (90)**	**2 210**	**1 643 (11)**
Developed countries			
Developing countries	2 417 (90)	2 210	1 643 (11)
LLDC			
LDC	188 (92)	202	202 (10)
ASEAN	314 (90)	297	208 (11)
ECO	157 (90)	152 (01)	113 (11)
SAARC	982 (91)	1 075	1 073 (10)
Central Asia	30 (93)		
Pacific island dev. econ.			
Low income econ.			
Lower middle income econ.	1 121 (90)	1 203	1 138 (11)
Upper middle income econ.	1 069 (90)	774	342 (10)
High income econ.			
Africa	438 (90)	542	645 (11)
Europe			
Latin America and Carib.	111 (90)	104	64 (10)
North America			
World	3 574 (90)	3 379	2 737 (11)

	Population living below the national poverty line		
	Millions		
	Earliest	2000	Latest
East and North-East Asia			
South-East Asia	**142 (90)**	**131**	**93 (12)**
South and South-West Asia	**735 (91)**	**652**	**487 (10)**
North and Central Asia		**64 (01)**	**16 (12)**
Pacific			
Asia and the Pacific			
Developed countries			
Developing countries			
LLDC			
LDC	117 (92)	118	85 (11)
ASEAN	142 (90)	131	93 (12)
ECO		124 (01)	68 (12)
SAARC	672 (91)	604	456 (10)
Central Asia			
Pacific island dev. econ.			
Low income econ.			
Lower middle income econ.	707 (91)	619 (01)	458 (12)
Upper middle income econ.			
High income econ.			
Africa	**331 (92)**	**364**	**419 (12)**
Europe			
Latin America and Carib.	**301 (90)**	**260**	**174 (12)**
North America			
World			

D.1.3 Income inequality

	Poverty gap		Income/consumption of poorest quintile		Income/consumption of richest quintile		Gini index	
	% of poverty line		% of income/consumption		% of income/consumption		Income equality coefficient	
	Earliest	Latest	Earliest	Latest	Earliest	Latest	Earliest	Latest
East and North-East Asia								
China	20.7 (90)	2.8 (09)	8.0 (90)	4.7 (09)	40.7 (90)	47.9 (05)	32.4 (90)	42.1 (09)
DPR Korea								
Hong Kong, China			5.3 (96)		50.8 (96)		43.4 (96)	
Japan			10.6 (93)		35.7 (93)		24.9 (93)	
Macao, China								
Mongolia			7.4 (95)	7.1 (08)	40.8 (95)	44.0 (08)	33.2 (95)	36.5 (08)
Republic of Korea			7.9 (98)		37.5 (98)		31.6 (98)	
South-East Asia								
Brunei Darussalam								
Cambodia	12.0 (94)	3.5 (09)	8.0 (94)	7.9 (09)	46.8 (94)	45.9 (08)	38.3 (94)	36.0 (09)
Indonesia	15.6 (90)	3.3 (10)	9.4 (90)	7.6 (10)	38.9 (90)	42.8 (05)	29.2 (90)	38.1 (11)
Lao PDR	16.2 (92)	9.0 (08)	9.3 (92)	7.6 (08)	40.1 (92)	44.8 (08)	30.4 (92)	36.7 (08)
Malaysia	0.1 (92)	0.0 (09)	4.7 (92)	4.5 (09)	53.1 (92)	51.5 (09)	47.7 (92)	46.2 (09)
Myanmar								
Philippines	8.6 (91)	3.7 (09)	5.9 (91)	6.0 (09)	50.5 (91)	49.7 (09)	43.8 (91)	43.0 (09)
Singapore			5.0 (98)		49.0 (98)		42.5 (98)	
Thailand	2.4 (90)	0.0 (10)	5.9 (90)	6.8 (10)	52.2 (90)	47.2 (09)	45.3 (90)	39.4 (10)
Timor-Leste						41.3 (07)		
Viet Nam	23.6 (93)	3.8 (08)	7.8 (93)	7.4 (08)	44.0 (93)	43.4 (08)	35.7 (93)	35.6 (08)
South and South-West Asia								
Afghanistan				9.4 (08)		37.5 (08)		27.8 (08)
Bangladesh	23.8 (92)	11.2 (10)	9.6 (92)	8.9 (10)	37.3 (92)	41.4 (10)	27.6 (92)	32.1 (10)
Bhutan		1.8 (07)		6.6 (07)		45.2 (07)		38.1 (07)
India	13.6 (94)	7.5 (10)	9.1 (94)	8.5 (10)	40.1 (94)	42.4 (05)	30.8 (94)	33.9 (10)
Iran (Islamic Rep. of)	1.0 (90)	0.3 (05)	5.2 (90)	6.4 (05)	49.4 (90)	45.2 (05)	43.6 (90)	38.3 (05)
Maldives		0.1 (04)	1.6 (98)	6.5 (04)	66.7 (98)	44.2 (04)	62.7 (98)	37.4 (04)
Nepal	25.6 (96)	5.6 (10)	7.9 (96)	8.3 (10)	43.5 (96)	41.5 (10)	35.2 (96)	32.8 (10)
Pakistan	23.2 (91)	3.5 (08)	8.1 (91)	9.6 (08)	41.7 (91)	40.0 (08)	33.2 (91)	30.0 (08)
Sri Lanka	2.7 (91)	0.7 (10)	8.7 (91)	7.7 (10)	41.5 (91)	47.8 (07)	32.5 (91)	36.4 (10)
Turkey	0.5 (94)	0.5 (10)	5.8 (94)	5.5 (10)	47.7 (94)	45.1 (08)	41.5 (94)	40.0 (10)
North and Central Asia								
Armenia	4.7 (96)	0.5 (10)	5.5 (96)	8.8 (10)	50.6 (96)	39.8 (08)	44.4 (96)	31.3 (10)
Azerbaijan	4.3 (95)	0.1 (08)	6.9 (95)	8.0 (08)	42.3 (95)	42.1 (08)	35.0 (95)	33.7 (08)
Georgia	0.8 (96)	5.8 (10)	6.1 (96)	5.0 (10)	43.6 (96)	47.2 (08)	37.1 (96)	42.1 (10)
Kazakhstan	0.5 (93)	0.0 (09)	7.5 (93)	9.1 (09)	40.4 (93)	38.4 (09)	32.7 (93)	29.0 (09)
Kyrgyzstan	8.6 (93)	1.1 (11)	2.5 (93)	7.7 (11)	57.0 (93)	43.4 (09)	53.7 (93)	33.4 (11)
Russian Federation	0.1 (93)	0.0 (09)	4.4 (93)	6.5 (09)	53.3 (93)	47.1 (09)	48.4 (93)	40.1 (09)
Tajikistan	15.4 (99)	1.2 (09)	8.4 (99)	8.3 (09)	37.7 (99)	39.4 (09)	29.0 (99)	30.8 (09)
Turkmenistan	25.8 (93)		6.9 (93)		42.5 (93)		35.4 (93)	
Uzbekistan			3.9 (98)	7.1 (03)	49.6 (98)	44.2 (03)	45.3 (98)	36.7 (03)
Pacific								
American Samoa								
Australia			5.9 (94)		41.3 (94)		35.2 (94)	
Cook Islands								
Fiji		1.1 (09)		6.2 (09)		49.6 (09)		42.8 (09)
French Polynesia								
Guam								
Kiribati								
Marshall Islands			1.1 (99)					
Micronesia (F.S.)	16.3 (00)		1.6 (00)		64.0 (00)		61.1 (00)	
Nauru								
New Caledonia								
New Zealand			6.5 (97)		43.8 (97)		36.2 (97)	
Niue								
Northern Mariana Islands								
Palau								
Papua New Guinea	12.3 (96)		4.5 (96)		56.4 (96)		50.9 (96)	
Samoa								
Solomon Islands								
Tonga								
Tuvalu								
Vanuatu								
Asia and the Pacific								
Developed countries								
Developing countries								
LLDC								
LDC								
ASEAN								
ECO								
SAARC								
Central Asia								
Pacific island dev. econ.								
Low income econ.								
Lower middle income econ.								
Upper middle income econ.								
High income econ.								
Africa								
Europe								
Latin America and Carib.								
North America								
World								

D.2. Access to water and sanitation

The issues of access to water and sanitation are of great importance, as was recognized in 2010 by the General Assembly of the United Nations.[1] This subject has also been given significant attention within the Millennium Development Goals; target 7.C is to "halve, by 2015, the proportion of the population without sustainable access to safe drinking water and basic sanitation". By 2011, the population of the Asian and Pacific region without access to safe drinking water was halved from the 1990 level, but the sanitation-related component of the target is still far from being achieved.

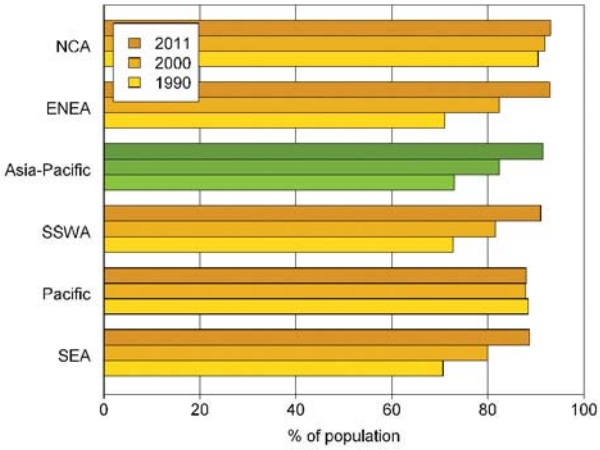
Access to improved water sources has greatly increased in the Asian and Pacific region, but, in some subregions, progress has slowed, and significant disparities between countries remain.

Access to improved water sources in the region increased from 73 per cent in 1990 to 91 per cent in 2011, and the region has already met this component of target 7.C. Between 1990 and 2011, an estimated 1.5 billion people gained access to safe drinking water – a considerable achievement for the region. Nevertheless, in 2011, there were still 360 million people lacking access to improved water sources, which represents about 46 per cent of the world's total.

Significant progress is notable especially in East and North-East Asia, South-East Asia, and South and South-West Asia. The North and Central Asian subregion has the highest proportion of the population with access to improved water sources but has shown limited progress since 1990 and has therefore not yet achieved the Millennium Development Goal target. The case is similar in the Pacific subregion, which has recorded a decrease in the proportion of the population with access to safe drinking water. The largest improvements were in Afghanistan (5 per cent in 1991 to 61 per cent in 2011), Cambodia (31 per cent in 1990 to 67 per cent in 2011) and Viet Nam (58 per cent in 1990 to 96 per cent in 2011).

Regional and subregional averages can hide important national and substantial deviations. For example, the overall success of the region hides the fact that, out of the 54 countries with available information, 20 had not achieved this component of the Millennium Development Goal target by 2011 (5 of which are very close to achieving it), which is reflected in the diverging trajectories between them. Among the countries that have not achieved the target are Bangladesh, Indonesia and Pakistan.

Figure D.2-1
Proportion of the total population with access to improved water sources, Asian and Pacific subregions, 1990, 2000 and 2011



There are significant disparities between rural and urban areas as regards the proportion of the population with access to improved water sources.

The inequalities in access to improved water sources in the region are largely due to disparities in economic development and the processes of urbanization, though there are important variations even in more successful economies and within urban areas. In urban areas of the region, the proportion of the urban population with access to improved water sources was 97 per cent in 2011, a rate that increased steadily from 94 per cent in 1990, reflecting increased investments in water infrastructure. The most significant progress was made in urban areas

[1] See General Assembly resolution 64/292 of 28 July 2010 on the human right to water and sanitation.

Figure D.2-2
Proportion of the urban population with access to improved water sources, Asia and the Pacific, early 1990s and 2011

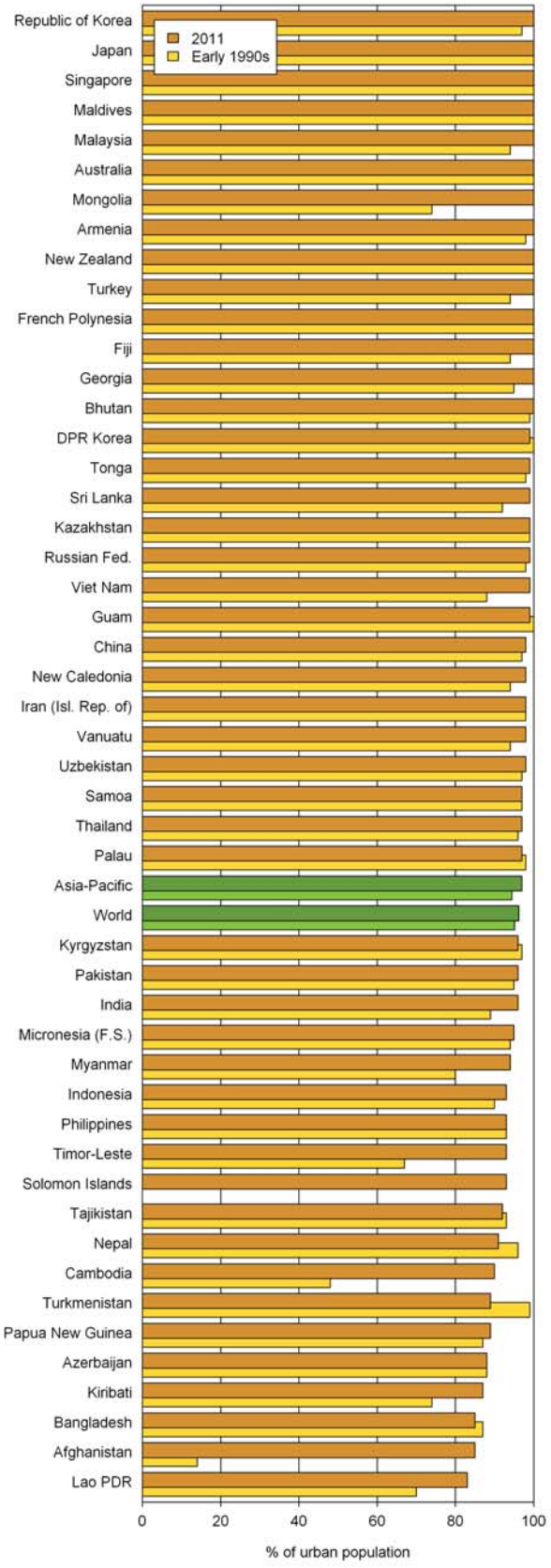
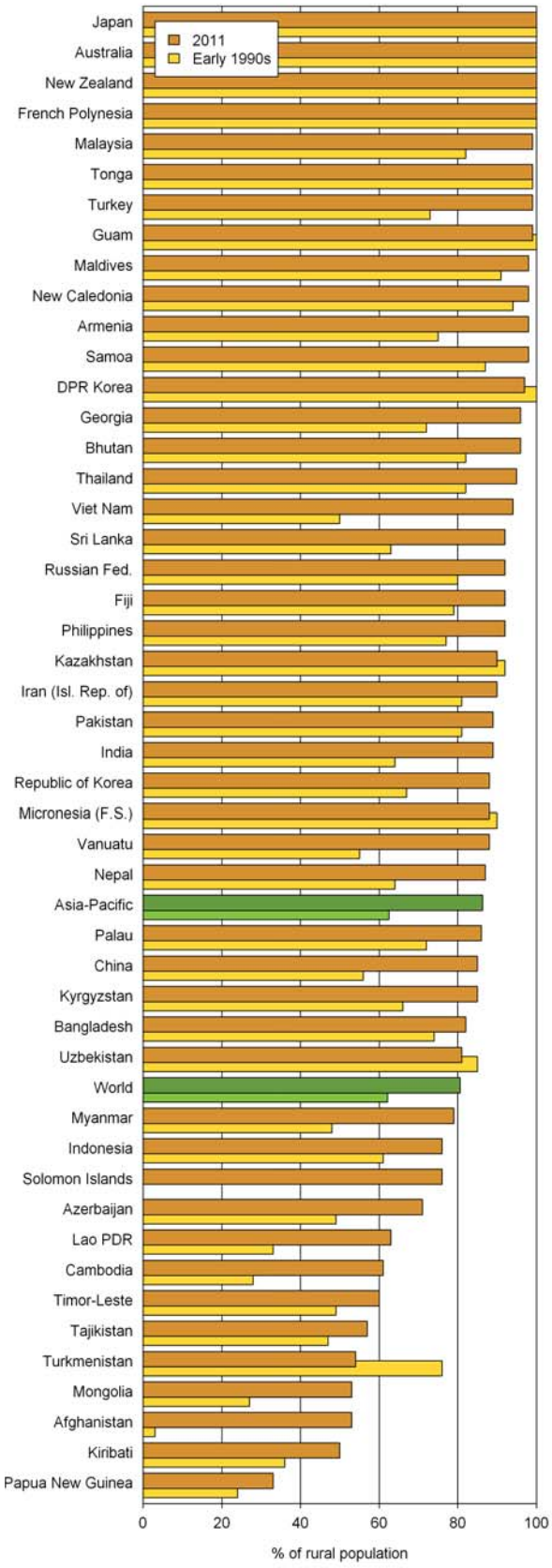


Figure D.2-3
Proportion of the rural population with access to improved water sources, Asia and the Pacific, early 1990s and 2011



of Afghanistan (where the figure rose from 14 per cent in 1991 to 85 per cent in 2011), Cambodia (which went from 48 per cent in 1990 to 90 per cent in 2011) and Timor-Leste (which had an increase from 67 per cent in 1995 to 93 per cent in 2011).

Nevertheless, it is important to note that urbanization has not provided a uniform solution to the problem of enabling access to improved water sources for all. Several countries have actually registered a fall in access to safe drinking water in urban areas; for instance, the figure for Bangladesh declined from 87 per cent in 1990 to 85 per cent in 2011, and for Nepal from 96 per cent in 1990 to 91 per cent in 2011. This reflects persistent levels of inequality in access to, and growing pressures on, the existing infrastructure.

At the same time, access to improved water sources in rural areas of the Asian and Pacific region increased from 63 per cent in 1990 to 74 per cent in 2000 to 86 per cent in 2011. 84 per cent of people living in the region without access to safe drinking water were in rural areas.

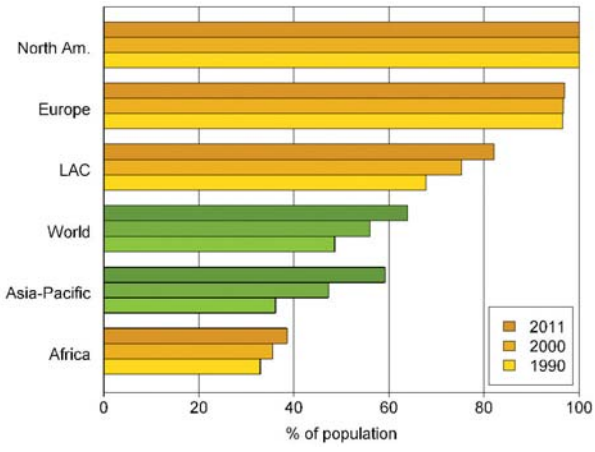
Access to improved sanitation facilities is progressing slowly and this component of Millennium Development Goal target 7.C has not yet been met.

Progress towards meeting the need for improved sanitation has been relatively slow in the region. In 2011, more than 1.7 billion people were without access to improved sanitation facilities, which means the region remains significantly far from achieving this component of Millennium Development Goal target 7.C. Sanitation coverage must increase from 59 per cent to 68 per cent between 2011 and 2015 in order to achieve the target. At the country level, 31 out of 53 countries with data have not yet achieved the target.

Open defecation remains a major issue in reaching sanitation targets. The global proportion of people who defecate in the open decreased to 15 per cent in 2010, which still represents more than 1 billion people, of whom 626 million are found in India.[2]

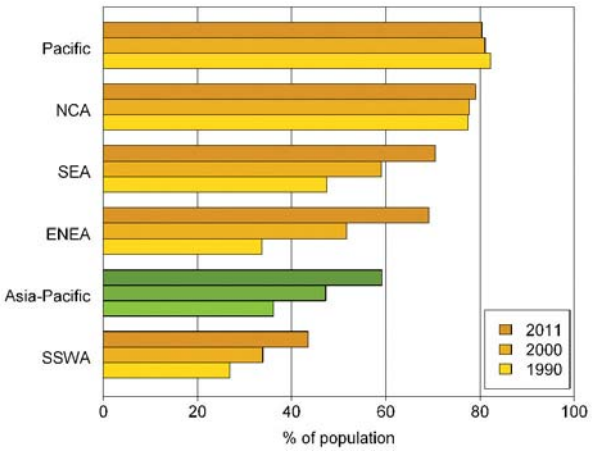
In South and South-West Asia, only 44 per cent of the population had access to basic sanitation in 2011; however, this is a significant improvement from 27 per cent in 1990. In 2011, nine countries in the region, including the Islamic Republic of Iran and the Republic of Korea, provided 100 per cent of their population with access to improved sanitation facilities. Many other countries, however, have less than 50 per cent of their population with access to improved sanitation facilities, including Cambodia (33 per cent), India (35 per cent) and Nepal (35 per cent). What is of great concern is that some countries and areas in the Pacific subregion registered a decrease in access to basic sanitation, including the Cook Islands (100 per cent in 1990 to 95 per cent in 2011), French Polynesia (99 per cent in 1990 to 97 per cent in 2011), Papua New Guinea (20 per cent in 1990 to 19 per cent in 2011) and Tonga (95 per cent in 1990 to 92 per cent in 2011).

Figure D.2-4
Proportion of the population with access to improved sanitation facilities, world regions, 1990, 2000 and 2011



[2] WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation, *Progress on Drinking Water and Sanitation: 2012 Update* (UNICEF and WHO, 2012). Available from www.wssinfo.org/fileadmin/user_upload/resources/JMP-report-2012-en.pdf.

Figure D.2-5
Proportion of the population with access to improved sanitation facilities, Asian and Pacific subregions, 1990, 2000 and 2011



significant progress in access to improved sanitation facilities has been made in rural areas in the region, but more than half of the rural population still does not have access to basic sanitation.

Rapid urban growth and a lack of investment in rural areas are providing many countries in the region with significant challenges in achieving their sanitation target. The proportion of the urban population in the region increased from 33 per cent in 1990 to 45 per cent in 2011. Access to improved sanitation facilities in urban areas increased from 66 per cent to 76 per cent, whereas in rural areas access increased only from 21 per cent to 46 per cent. Progress in rural areas was proportionately more significant but still lags far behind access in urban areas.

High-income economies, such as Japan and the Republic of Korea, are able to provide their urban and rural populations with access to improved sanitation facilities effectively, and in both countries 100 per cent of the population had access to improved sanitation facilities in 1990 and in 2011. Conversely, other countries struggle to provide their populations with equal access to improved sanitation facilities; in Cambodia access for the urban population increased from 36 per cent to 76 per cent, and for the rural population from 3 per cent to 22 per cent, between 1990 and 2011. In India, access increased from 50 per cent to 60 per cent for the urban population and from 7 per cent to 24 per cent for the rural population in the same years.

Figure D.2-6
Proportion of the urban population with access to improved sanitation facilities, Asian and Pacific subregions, 1990, 2000 and 2011

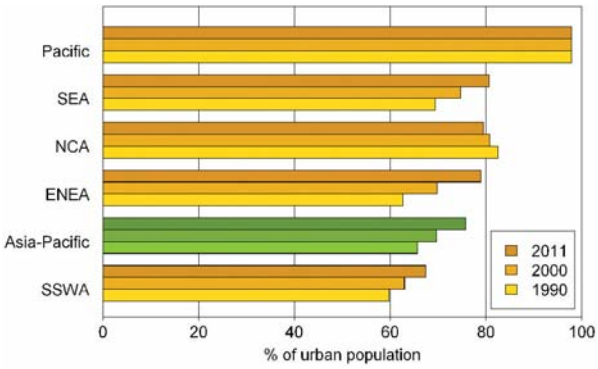
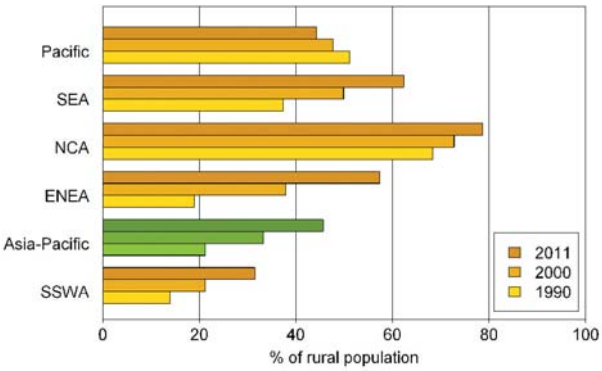


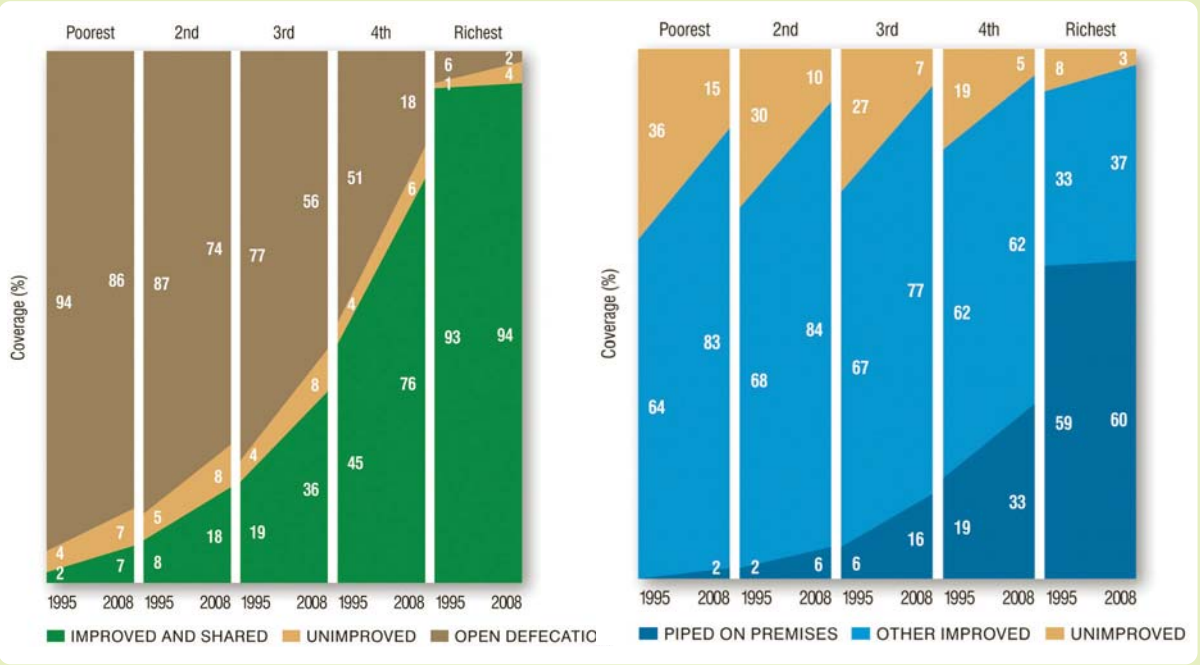
Figure D.2-7
Proportion of rural population with access to improved sanitation facilities, Asian and Pacific subregions, 1990, 2000 and 2011



Box D.2-1
Access to water and sanitation in Bangladesh, India and Nepal differs according to wealth quintile

Research done by the World Health Organization (WHO) and the United Nations Children's Fund in three countries in South and South-West Asia, namely Bangladesh, India and Nepal, shows that progress in access to improved water sources and basic sanitation differs according to wealth quintile. The research concluded that the attainment made in improved sanitation in the richest quintile of the population was much higher than it was in poorer quintiles. The figure (left) shows that the two poorest quintiles of the population in Bangladesh, India and Nepal benefited only slightly from improved sanitation between 1995 and 2008. Very little progress was made in the poorest quintile, where open defecation remains largely present for 86 per cent of population. The most progress was made in the fourth quintile, and sanitation levels were kept very high in the richest quintile of the population. Wealth and income distributions identify areas most prone to the effects of poor water and sanitation access.

Sanitation coverage trends and drinking water coverage trends by wealth quintile in Bangladesh, India and Nepal, based on population-weighted averages, 1995-2008



Source: WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation, *Progress on Drinking Water and Sanitation: 2012 Update* (UNICEF and WHO, 2012). Available from www.wssinfo.org/fileadmin/user_upload/resources/JMP-report-2012-en.pdf.

On the other hand, as the figure (right) shows, the populations of Bangladesh, India and Nepal benefited more equally in access to safe drinking water. A strong improvement in access to safe drinking water was made across all wealth quintiles. Although most of the improvement was in access to "other improved" sources of water, such as wells and hand pumps, very little progress was made towards piped water on premises for the two poorest quintiles of the population in these countries.

Further reading

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Technical notes

Access to improved water sources and sanitation: rural, urban and total (percentage of rural, urban or total population)

Improved water sources: The percentage of the rural/urban/total population with access to improved water sources. Improved water sources include household water connection, public standpipe, borehole, protected dug well, protected spring, rainwater collection and bottled water (if the secondary available source is also improved). **Improved sanitation:** The percentage of the rural/urban/total population with access to improved sanitation. Improved sanitation refers to facilities that include flush or pour-flush toilet or latrine to: piped sewerage, septic tank or pit; a ventilated improved pit latrine; a pit latrine with slab; or a composting toilet or latrine. **Aggregate calculations:** Millennium Development Goal aggregation and imputation methods; weighted averages using rural, urban or total population (WPP2012) as weight.

People lacking access to improved water sources and sanitation: rural, urban and total (thousands)

The number of people lacking access to improved water and sanitation, expressed in thousands. Rural, urban and total are calculated only for economic, regional and subregional groupings. **Aggregate calculations:** Millennium Development Goal aggregation and imputation methods; population for each economic, regional or subregional grouping multiplied by (1 minus the percentage of the population with access to improved water or sanitation). Rural number of people is calculated as the difference between the total and the urban number of people lacking access to improved water and sanitation.

Source

Source of water and sanitation data: Millennium Indicators Database. Countries report data to the WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation. The primary data sources used in

international monitoring include nationally representative household surveys, such as multiple indicator cluster surveys, demographic and health surveys, world health surveys, living standards and measurement surveys, core welfare indicator questionnaires, Pan-Arab Project for Family Health surveys and population censuses. Data are entered into the Joint Monitoring Programme database after validation with objective criteria. **Data obtained:** 2 August 2013.

D.2.1 Access to water and sanitation

	Access to improved water sources						Access to improved sanitation					
	Rural		Urban		Total		Rural		Urban		Total	
	% of the rural population		% of the urban population		% of the total population		% of the rural population		% of the urban population		% of the total population	
	1990	2011	1990	2011	1990	2011	1990	2011	1990	2011	1990	2011
East and North-East Asia	**58**	**85**	**98**	**98**	**71**	**93**	**19**	**57**	**63**	**79**	**34**	**69**
China	56	85	97	98	67	92	15	56	48	74	24	65
DPR Korea	100	97	100	99	100	98	48 (92)	73	57 (92)	88	53 (92)	82
Hong Kong, China												
Japan	100	100	100	100	100	100	100	100	100	100	100	100
Macao, China												
Mongolia	27	53	74	100	54	85	28 (94)	29	66	64	50 (94)	53
Republic of Korea	67 (91)	88	97	100	90 (91)	98	100	100	100	100	100	100
South-East Asia	**61**	**84**	**90**	**95**	**71**	**89**	**37**	**62**	**69**	**81**	**47**	**71**
Brunei Darussalam												
Cambodia	28	61	48	90	31	67	3	22	36	76	9	33
Indonesia	61	76	90	93	70	84	24	44	61	73	35	59
Lao PDR	33 (94)	63	70 (94)	83	40 (94)	70	12 (94)	48	61 (94)	87	20 (94)	62
Malaysia	82	99	94	100	88	100	81	95	88	96	84	96
Myanmar	48	79	80	94	56	84	47 (91)	74	77 (91)	84	55 (91)	77
Philippines	77	92	93	93	85	92	45	69	69	79	57	74
Singapore			100	100	100	100			99	100	99	100
Thailand	82	95	96	97	86	96	79	96	87	89	82	93
Timor-Leste	49 (95)	60	67 (95)	93	53 (95)	69	33 (95)	27	51 (95)	68	37 (95)	39
Viet Nam	50	94	88	99	58	96	30	67	64	93	37	75
South and South-West Asia	**66**	**88**	**90**	**96**	**73**	**91**	**14**	**31**	**60**	**67**	**27**	**44**
Afghanistan	3	53	14 (91)	85	5 (91)	61	20 (91)	23	26 (91)	46	21 (91)	28
Bangladesh	74	82	87	85	76	83	34	55	54	55	38	55
Bhutan	82 (97)	96	99	100	86 (97)	97	30 (97)	29	66 (97)	74	38 (97)	45
India	64	89	89	96	70	92	7	24	50	60	18	35
Iran (Islamic Rep. of)	81	90	98	98	91	95	76	99	84	100	81	100
Maldives	91	98	100	100	93	99	58	98	98	97	68	98
Nepal	64	87	96	91	67	88	4	32	36	50	7	35
Pakistan	81	89	95	96	85	91	7	34	72	72	27	47
Sri Lanka	63	92	92	99	68	93	65	93	78	83	68	91
Turkey	73	99	94	100	85	100	66	75	96	97	84	91
North and Central Asia	**78**	**85**	**98**	**98**	**90**	**93**	**68**	**79**	**83**	**79**	**77**	**79**
Armenia	75 (92)	98	98	100	91 (92)	99	75 (92)	81	95	96	89 (92)	90
Azerbaijan	49	71	88	88	70	80	43 (94)	78	70 (94)	86	57 (94)	82
Georgia	72	96	95	100	85	98	96	91	97	96	96	93
Kazakhstan	92	90	99	99	96	95	97	98	96	97	96	97
Kyrgyzstan	66 (91)	85	97	96	77 (91)	89	93 (91)	93	94	94	93 (91)	93
Russian Federation	80	92	98	99	93	97	58	59	80	74	74	70
Tajikistan	47 (93)	57	93 (93)	92	61 (93)	66	87 (93)	94	93	95	89 (93)	95
Turkmenistan	76 (94)	54	99	89	86 (94)	71	97	98	99	100	98	99
Uzbekistan	85	81	97	98	90	87	76	100	95	100	84	100
Pacific	**62**	**60**	**99**	**100**	**88**	**88**	**51**	**44**	**98**	**98**	**82**	**80**
American Samoa	94	100	94	100	94	100	97	97	97	97	97	97
Australia	100	100	100	100	100	100	100	100	100	100	100	100
Cook Islands	100	100	100	100	100	100	100	95	100	95	100	95
Fiji	79	92	94	100	85	96	37	82	85	92	57	87
French Polynesia	100	100	100	100	100	100	99	97	99	97	99	97
Guam	100	99	100	99	100	99	97	97	97	97	97	97
Kiribati	36	50	74	87	50	66	20	30	43	51	28	39
Marshall Islands	94	97	91	93	92	94	41	55	77	84	65	76
Micronesia (F.S.)	90	88	94	95	91	89	9	47	49	83	19	55
Nauru			93 (96)	96	93 (96)	96			66	66	66	66
New Caledonia	94 (98)	98	94 (98)	98	94 (98)	98	100	100	100	100	100	100
New Zealand	100	100	100	100	100	100	88					
Niue	99	99	99	99	99	99	69 (91)	100	69 (91)	100	69 (91)	100
Northern Mariana Islands	94	97	94	97	94	97	84	98	84	98	84	98
Palau	72	86	98	97	90	95	8	100	63	100	46	100
Papua New Guinea	24	33	87	89	33	40	13	13	62	57	20	19
Samoa	87	98	97	97	89	98	92	91	94	93	93	92
Solomon Islands		76		93		79		15		81		29
Tonga	99	99	98	99	99	99	95	89	98	99	95	92
Tuvalu	89	97	92	98	90	98	71	80	75	86	73	83
Vanuatu	55	88	94	98	62	91	32 (92)	55	50 (92)	65	35 (92)	58
Asia and the Pacific	**63**	**86**	**94**	**97**	**73**	**91**	**21**	**46**	**66**	**76**	**36**	**59**
Developed countries	100	100	100	100	100	100	100	99	100	100	100	100
Developing countries	62	86	94	97	72	91	20	45	62	74	33	58
LLDC	57	73	89	93	69	80	45	60	82	83	58	67
LDC	60	77	79	88	63	80	29	50	56	62	35	53
ASEAN	61	84	90	95	71	89	37	62	69	81	47	71
ECO	74	84	94	97	83	90	40	55	84	88	59	71
SAARC	66	88	89	95	71	90	11	29	53	61	21	39
Central Asia	75	78	96	96	85	86	80	95	91	96	85	95
Pacific island dev. econ.	39	44	91	94	52	56	22	23	76	76	35	36
Low income econ.	62	78	85	90	67	82	33	53	56	67	38	57
Lower middle income econ.	65	88	90	95	71	91	14	33	58	67	26	45
Upper middle income econ.	59	86	97	98	72	93	23	61	63	78	37	70
High income econ.	89	96	99	100	97	100	100	100	100	100	100	100
Africa	**41**	**55**	**86**	**86**	**56**	**67**	**24**	**31**	**57**	**54**	**33**	**39**
Europe	**94**	**98**	**100**	**100**	**98**	**99**	**92**	**92**	**99**	**99**	**97**	**97**
Latin America and Carib.	**64**	**81**	**94**	**98**	**85**	**94**	**38**	**62**	**80**	**87**	**68**	**82**
North America	**94**	**95**	**100**	**100**	**98**	**99**	**99**	**99**	**100**	**100**	**100**	**100**
World	**62**	**81**	**95**	**96**	**76**	**89**	**28**	**47**	**76**	**80**	**49**	**64**

D.2.2 Access to water and sanitation – people affected

	People lacking access to improved water sources					
	Rural		Urban		Total	
	Thousands					
	1990	2011	1990	2011	1990	2011
East and North-East Asia	**382 758**	**97 784**	**10 665**	**14 113**	**393 423**	**111 897**
South-East Asia	**116 631**	**53 812**	**13 606**	**14 599**	**130 237**	**68 410**
South and South-West Asia	**305 638**	**132 557**	**33 696**	**26 849**	**339 335**	**159 405**
North and Central Asia	**17 042**	**13 001**	**3 355**	**2 457**	**20 398**	**15 458**
Pacific	**2 990**	**4 322**	**128**	**118**	**3 118**	**4 440**
Asia and the Pacific	**824 739**	**301 473**	**61 642**	**58 237**	**886 381**	**359 709**
Developed countries	0	0	0	0	0	0
Developing countries	824 777	301 479	61 682	58 256	886 460	359 735
LLDC	27 122	24 849	3 620	3 220	30 742	28 068
LDC	63 746	46 601	7 936	9 682	71 682	56 283
ASEAN	116 299	53 493	13 519	14 577	129 818	68 070
ECO	42 599	35 997	7 193	6 017	49 792	42 015
SAARC	295 020	129 827	31 143	25 807	326 163	155 634
Central Asia	8 846	9 757	1 181	1 398	10 027	11 155
Pacific island dev. econ.	2 990	4 322	128	118	3 118	4 440
Low income econ.	63 521	47 881	7 756	9 655	71 277	57 537
Lower middle income econ.	349 074	145 399	36 812	30 761	385 886	176 160
Upper middle income econ.	405 662	106 769	15 756	17 575	421 418	124 344
High income econ.	5 270	1 016	1 008	5	6 278	1 021
Africa	**251 195**	**288 106**	**28 910**	**59 653**	**280 105**	**347 759**
Europe	**9 691**	**3 118**	**1 282**	**951**	**10 973**	**4 070**
Latin America and Carib.	**49 356**	**25 089**	**17 669**	**11 892**	**67 026**	**36 981**
North America	**5 091**	**3 150**	**0**	**0**	**5 091**	**3 150**
World	**1 160 778**	**638 660**	**112 181**	**136 953**	**1 272 959**	**775 613**

	People lacking access to improved sanitation					
	Rural		Urban		Total	
	Thousands					
	1990	2011	1990	2011	1990	2011
East and North-East Asia	**732 896**	**303 030**	**169 413**	**184 009**	**902 308**	**487 039**
South-East Asia	**190 205**	**125 755**	**42 917**	**52 300**	**233 122**	**178 055**
South and South-West Asia	**771 739**	**805 063**	**140 005**	**198 319**	**911 744**	**1 003 382**
North and Central Asia	**23 878**	**17 728**	**24 532**	**28 866**	**48 410**	**46 593**
Pacific	**4 376**	**6 734**	**400**	**574**	**4 776**	**7 309**
Asia and the Pacific	**1 723 787**	**1 258 960**	**378 017**	**465 166**	**2 101 804**	**1 724 126**
Developed countries	0	0	0	0	0	0
Developing countries	1 722 547	1 258 053	377 268	464 392	2 099 815	1 722 444
LLDC	35 024	37 753	6 178	8 284	41 202	46 037
LDC	110 850	103 854	16 450	29 477	127 301	133 331
ASEAN	189 815	125 185	42 826	52 201	232 641	177 386
ECO	99 040	99 574	20 089	24 285	119 129	123 859
SAARC	758 750	800 055	133 646	196 752	892 396	996 807
Central Asia	7 105	2 226	2 786	1 336	9 891	3 562
Pacific island dev. econ.	3 835	5 951	339	491	4 174	6 442
Low income econ.	112 143	103 470	22 605	30 955	134 748	134 425
Lower middle income econ.	840 422	829 988	158 677	218 031	999 100	1 048 019
Upper middle income econ.	768 093	323 253	193 549	213 319	961 643	536 572
High income econ.	8	6	37	9	45	15
Africa	**335 881**	**457 792**	**86 697**	**191 652**	**422 579**	**649 444**
Europe	**15 145**	**12 380**	**4 755**	**5 568**	**19 900**	**17 948**
Latin America and Carib.	**80 709**	**46 991**	**62 776**	**60 988**	**143 486**	**107 980**
North America	**0**	**0**	**0**	**0**	**0**	**0**
World	**2 188 666**	**1 791 508**	**547 559**	**738 056**	**2 736 225**	**2 529 564**

D.3. Food security

The World Food Summit was held in Rome in 1996. Its Plan of Action states: "Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life."[1] This definition identifies four main dimensions of food security: (a) food availability (food must be available in sufficient quantity and quality, either through domestic production, trade or food aid); (b) food access (individuals must have the required resources to be able to acquire food for their consumption); (c) food utilization (human biological capacity to absorb the necessary nutrients from food into their body, which depends on, among other things, health and access to clean water and sanitation); and (d) stability (low susceptibility to the risk of not having access to food over time).

Asia and the Pacific has made remarkable progress in addressing food security during the last two decades. A considerable proportion of its population, however, still faces severe forms of hunger and malnutrition.

Undernourishment is a serious issue in the region as it is home to about two thirds of the world's undernourished population. For adults, undernourishment undermines health and reduces their capacity to live and work to their full potential. For children, it can result in lifelong poor physical and mental growth and susceptibility to diseases.

The region as a whole has registered a reduction in the proportion of the undernourished population from 22 per cent in 1990-1992 to 13 per cent in 2010-2012. If this trend continues, the region is likely to achieve target 1.C of the Millennium Development Goals, which is to halve, between 1990 and 2015, the proportion of people who suffer from hunger. Yet, there are a number of hunger hotspots, where food insecurity remains a major challenge. South and

Figure D.3-1
Prevalence of undernourishment, Asia and the Pacific, 1990-1992 to 2010-2012

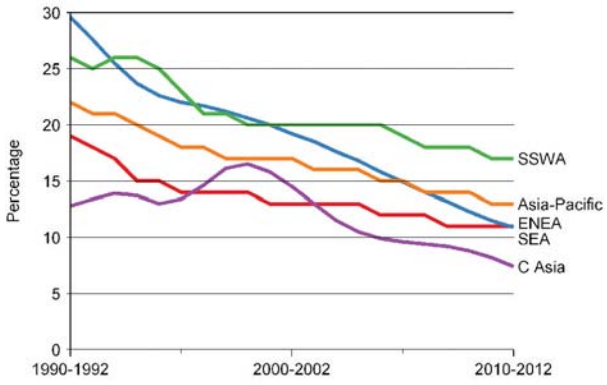
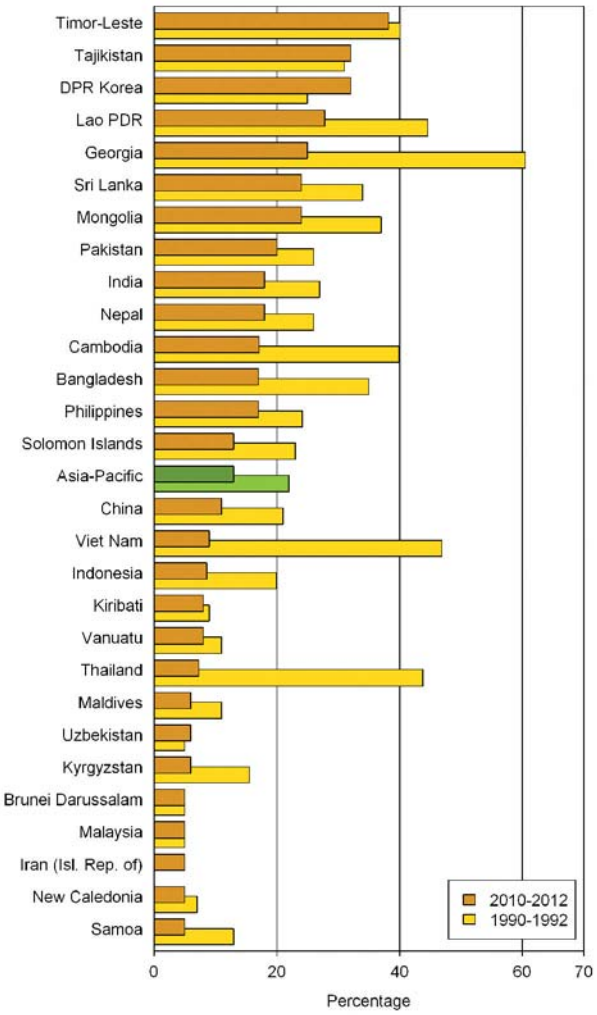


Figure D.3-2
Prevalence of undernourishment, Asia and the Pacific, 1990-1992 and 2010-2012



[1] *World Food Summit Plan of Action*, paragraph 1. Available from www.fao.org/wfs/index_en.htm.

South-West Asia, for example, has the highest proportion of undernourished people in the region. This subregion experienced a steady decline in undernourishment in the 1990s, followed by stagnation for some years, but the reduction has continued again at a slower speed in recent years. India, with its large population, has the greatest number of undernourished people in the region. In contrast, Central Asia, which had a low proportion of undernourishment at the beginning of the 1990s, experienced a dramatic rise during the latter part of the decade, but managed to reduce the proportion to 7.4 per cent by 2010-2012. East and North-East Asia has also seen a steady decline in its undernourished population.

By 1990-1992, a number of countries in the region had already reached the level of 5 per cent undernourishment, indicating that the country was food secure. Since then, several other countries have been able to reduce the proportion of their undernourished population to, or close to, the 5 per cent benchmark (Armenia, Azerbaijan, Kyrgyzstan, Maldives, Samoa and Turkmenistan). Out of the 19 countries that recorded over 20 per cent of their population as being undernourished in 1990-1992, Armenia, Azerbaijan and Viet Nam were able to reduce the figure to below 10 per cent by 2010-2012. Viet Nam and Georgia lowered their undernourished populations by 37.9 and 35.4 percentage points, respectively, during this period, whereas Armenia, Azerbaijan, Bangladesh and the Lao People's Democratic Republic managed to reduce their undernourished populations by 16 to 18 percentage points. In the case of the Democratic People's Republic of Korea, the proportion of the undernourished population has risen by 7.0 percentage points in the past two decades. The proportion of undernourishment remains high in low-income economies, lower-middle-income economies and least developed countries. As a group, the SAARC countries have the highest proportion of undernourished people.

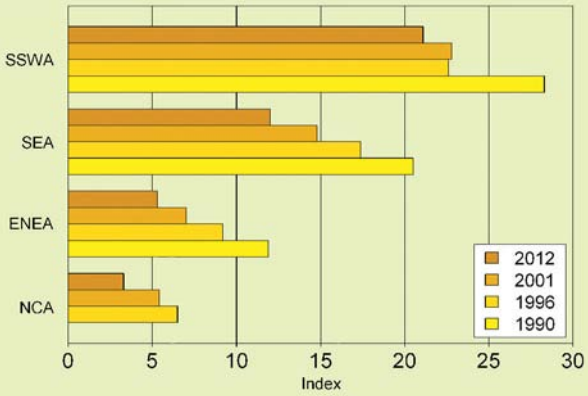
Box D.3-1
Global Hunger Index

The Global Hunger Index (GHI) is a tool designed to comprehensively measure and track hunger globally, by region and by country. To reflect the multidimensional nature of hunger, GHI combines three equally weighted indicators in one index: (a) undernourishment (the proportion of undernourished people as a percentage of the total population); (b) child underweight (the proportion of children younger than 5 years of age who are underweight); and (c) child mortality (the mortality rate of children younger than 5 years of age). The 2012 GHI reflects data from 2005 to 2010 – the most recent country-level data on the three GHI components. GHI ranks countries on a 100-point scale in which 0 is the best score (no hunger) and 100 the worst, although neither of these extremes is reached in practice.

According to the 2012 GHI, South and South-West Asia has the highest GHI score among the Asian and Pacific subregions (and hunger is alarming in Bangladesh, India and Nepal), despite reducing its score from 28.3 in 1990 to 21.1 in 2012. Between 1990 and 1996, the subregion reduced its GHI score by more than 5.7 points – mainly through a large 13.2 percentage point decline in underweight in children – but it could not maintain this rapid progress. Stagnation followed, and the region has lowered its GHI score by less than 2 points since 2001, despite strong economic growth. Social inequality and the low nutritional, educational and social status of women are major causes of child undernourishment in this subregion and have impeded improvements in the GHI score.

Some Asian countries also achieved noteworthy progress in improving their GHI scores: Bangladesh and Viet Nam lowered their scores by 13.9 and 14.4 percentage points, respectively. In South-East Asia, progress has been particularly remarkable, with the GHI score decreasing from 20.5 in 1990 to 12.0 in 2012.

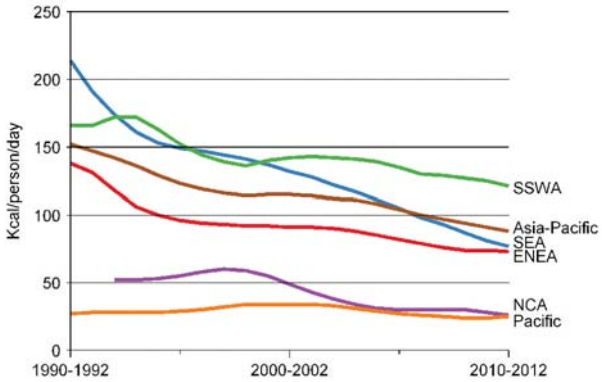
Global Hunger Index, Asia and the Pacific, 1990, 1996, 2001 and 2012



Asia and the Pacific has continuously reduced the depth of its food deficit during the past two decades. However, as of 2010-2012, there were great disparities in food deficit levels across the subregions.

As shown in figure D.3-3, South and South-West Asia has the highest depth of food deficit in the region, whereas South-East Asia, which recorded the highest depth of food deficit in 1990-1992, has shown the most progress. It is interesting to note that East and North-East Asia, South and South-West Asia, and South-East Asia had very high food deficit levels per capita in the 1990s, but over the years, these subregions have diverged significantly. The depth of food deficit is the highest in the SAARC grouping and moderate in the ASEAN grouping. The Pacific is the subregion with the lowest depth of food deficit.

Figure D.3-3
Depth of food deficit, Asia and the Pacific, 1990-1992 to 2010-2012

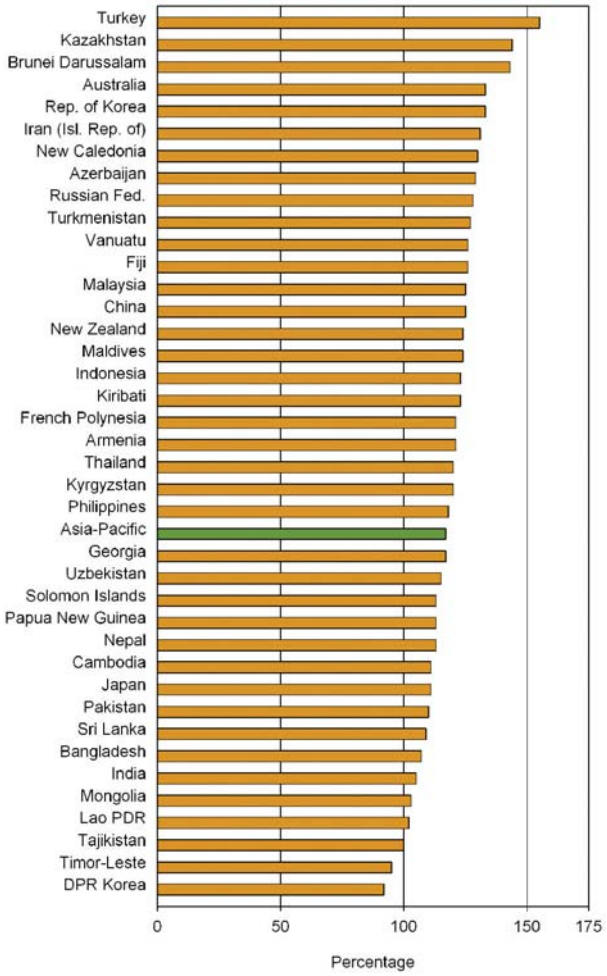


The reasons behind the apparent subregional and country variations in the depth of the food deficit are of considerable interest to policymakers. Considered together, average dietary energy supply adequacy and undernourishment can shed light on whether food insecurity is caused by supply deficits or by other factors such as income or food distribution.

The region as a whole has reached a relatively high average dietary energy supply adequacy. However, for a particular country, high average dietary energy supply adequacy alone may not be sufficient to ensure adequate food for all people.

In 2010-2012, the level of average dietary energy supply adequacy reached 117 per cent in Asia and the Pacific. In the SAARC countries, however, it remained low at 106 per cent. It should be noted that, while in Bangladesh and in India the prevalence of undernourishment is at 17.0 per cent and 18.0 per cent, respectively, with average dietary energy supply adequacy at 107 per cent and 105 per cent, respectively, the prevalence of undernourishment in Georgia is at 25.0 per cent with average dietary energy supply adequacy at

Figure D.3-4
Average dietary energy supply adequacy, Asia and the Pacific, 2010-2012



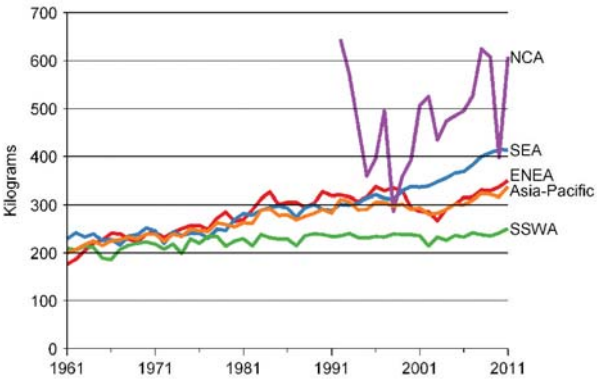
117 per cent. Also noteworthy is Japan, where the prevalence of undernourishment is very low at 6 per cent and the average dietary energy supply adequacy is also low at 111 per cent. This suggests that dietary energy supply adequacy alone is not sufficient for ensuring food security.

There has been good overall progress in increasing cereal production in the region, but disparities among subregions and countries persist.

Countries with low average dietary energy supply adequacy may need to introduce policies for enhancing the means of making more food available to their citizens, including production enhancement, increased trade and effective stock management. In countries where there are high levels of both average dietary energy supply adequacy and undernourishment, more focus on enhancing food and income distribution may be required.

Many countries in the region have introduced policies to increase cereal production. On average, per capita cereal production increased from 290 kg in 1990 to 337 kg in 2011. In South-East Asia, per capita cereal production grew steadily from 229 kg in 1961 to 413 kg in 2011. South and South-West Asia also had growth during this period (209 kg in 1961 to 251 kg in 2011), but is the most underperforming subregion in Asia and the Pacific.

Figure D.3-5
Per capita cereal production, Asia and the Pacific, 1961-2012



Note: Data for countries in North and Central Asia are available only from 1992 onwards.

Country-level per capita cereal production varies from almost zero in some Pacific countries to over 600 kg in such countries as Cambodia, the Lao People's Democratic Republic, Myanmar, the Russian Federation, and Turkmenistan.

The share of dietary energy derived from cereals, roots and tubers in Asia and the Pacific is significantly higher than it is in other world regions except Africa. However, food habits in many countries in the region are slowly changing, resulting in reduced dependency on cereals, roots and tubers.

As shown in figure D.3-6, the share of dietary energy derived from cereals, roots and tubers in the region declined by 7 percentage points between 1993-1995 and 2007-2009. Yet, as of 2007-2009, 56 per cent of dietary energy still came from cereals, roots and tubers, compared with 51 per cent worldwide, 32 per cent in Europe and 25 per cent in North America. The region's least developed countries rely on cereals, roots and tubers for almost 75 per cent of dietary energy. Countries with a reduction of over 15 per cent in the share of dietary energy coming from cereals, roots and tubers include Armenia (27 per cent), Kazakhstan (24 per cent), China (18 per cent), Viet Nam (18 per cent) and the Republic of Korea (17 per cent). The decline is from a dependency ratio of over 60 per cent in 1993-1995 (with the exception of the Republic of Korea, with a slightly lower level of 53 per cent). Food habits appear to have changed slowly

Figure D.3-6
Share of dietary energy derived from cereals, roots and tubers, world regions, 1993-1995 and 2007-2009

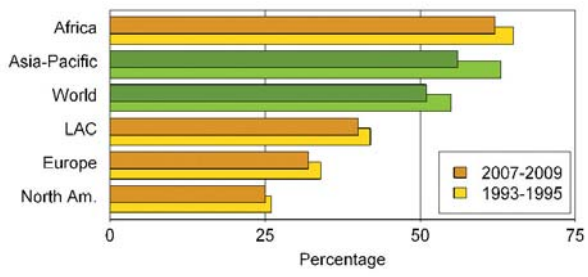
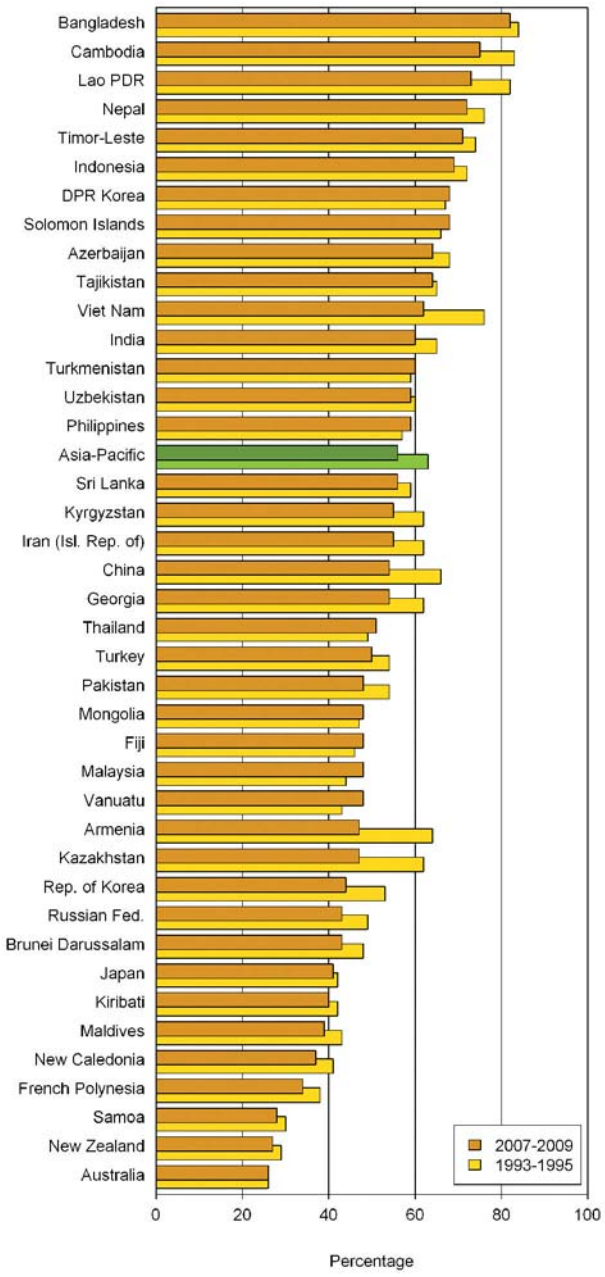


Figure D.3-7
Share of dietary energy derived from cereals, roots and tubers, Asia and the Pacific, 1993-1995 and 2007-2009



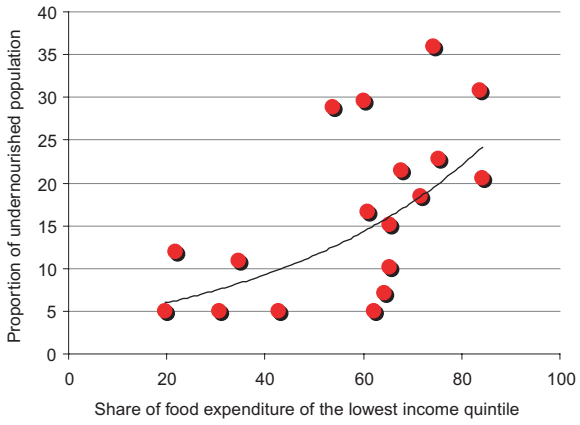
in a large number of countries, with the overwhelming majority of countries in the region experiencing a reduction of less than 5 per cent in the share of dietary energy derived from cereals, roots and tubers.

High per capita cereal production may not necessarily imply food security; household entitlements play a vital role, especially for the poor.

Countries with very high per capita cereal production are not necessarily the most food secure. Examples are Cambodia (per capita cereal production at 650 kg in 2011, prevalence of undernourishment at 17 per cent in 2010-2012) and the Lao People's Democratic Republic (per capita cereal production at 638 kg in 2011, prevalence of undernourishment at 28 per cent in 2010-2012). In contrast, some food-secure countries have very low per capita cereal production. This suggests that high per capita cereal production is neither a necessary nor a sufficient condition for food security, which depends on many ancillary factors including household entitlements, food distribution within households and countries, the extent of social protection, the sustainability of food production, prices and distribution systems.

Entitlements are a main factor in food security. By Engel's law, the share of food expenditure of total consumption (total food and non-food) of the population's lowest income quintile declines as incomes rise. Thus, a high share of food

Figure D.3-8
Share of food expenditure of the poor and prevalence of undernourishment



expenditure implies a high degree of food poverty. The poor are also more susceptible to food insecurity when they are confronted with food price variability because they do not have the capacity to incur additional expenditure on food without cutting down on other consumption. This may explain the apparent high correlation between the share of food expenditure and the proportion of the undernourished population in the region.

Box D.3-2
A new partnership effort to strengthen regional and national capacities in measuring resilience for food security

With almost 870 million people chronically undernourished in 2010-2012, the number of people suffering from food insecurity globally remains unacceptably high.[a] In areas plagued by recurring or protracted crises, the problem is especially severe. Furthermore, most efforts to effectively address the underlying causes of vulnerability that regularly threaten the lives of millions in crisis situations have not been successful. Indeed, recurring crises in the Horn of Africa, the Sahel and parts of Asia over the last few decades have demonstrated the ineffectiveness of large-scale emergency interventions to improve regional or local resilience to withstand future shocks and stresses.

There is a need for research on how to best assess or measure households' reactions to shock and stresses, as well as the extent to which programme interventions enhance their resilience. Panel-type data represent the ideal source (for example, data provided through the living standards measurement study) where they are available. Qualitative data can enhance quantitative findings and should be included in measuring resilience.

In order to develop a common understanding on how best to measure resilience, an expert consultation on measuring resilience related to food security was held in Rome from 19 to 21 February 2013. Supported by the European Commission and the United States Agency for International Development, and organized by the Food and Agriculture Organization of the United Nations (FAO) and the World Food Programme, it brought together 60 stakeholders, donors and practitioners to discuss key issues regarding resilience measurement and to decide on next steps.

Key measurement issues identified include a unit of analysis to be used, the timing and frequency of data collection, and the need to include a qualitative approach. It was also agreed that more statistically sound research was needed.

The recently established Food Security Information Network[b] has emerged as a platform for defining and facilitating the implementation of these next steps, including the establishment of:

(a) A community of practice dedicated to measuring resilience related to food and nutrition security as a forum for sharing best practices among practitioners. This will include participants from the expert consultation as well as members from regional bodies, national institutions, non-governmental organizations, donors and the partners engaged in the Global Strategy to Improve Agricultural and Rural Statistics.

(b) A task-oriented technical working group on resilience measurement to help the technical development of resilience measurement.

Expected outcomes include: (a) harmonizing and gaining consensus on methods for measuring food and nutrition security resilience; and (b) implementing best practices in the field and (b).

[a] Food and Agriculture Organization of the United Nations, *The State of Food Insecurity in the World 2012* (2012). Available from www.fao.org/publications/sofi/en/.

[b] The Food Security Information Network was launched by the Food and Agriculture Organization of the United Nations, the International Food Policy Research Institute and the World Food Programme in October 2012 as a global community of practice whose aim is to improve food and nutrition security information systems.

Further reading

Carletto, Calogero, Alberto Zezza and Raka Banerjee. "Towards better measurement of household food security: harmonizing indicators and the role of household surveys". *Global Food Security,* vol. 2, No. 1 (March 2013), pp. 30-40.

ESCAP. *Sustainable Agriculture and Food Security in Asia and the Pacific.* United Nations publication, Sales No. E.09.II.F.12.

National Research Council of the National Academies. *A Sustainability Challenge: Food Security for All – Report of Two Workshops.* Washington, DC: National Academy of Sciences, 2013. Available from www.nap.edu/catalog.php?record_id=13378.

Technical notes

Average dietary energy supply adequacy (percentage)

Expresses the dietary energy supply as a percentage of the average dietary energy requirement in the country. The average supply of calories for food consumption of each country or region is normalized by the average dietary energy requirement estimated for its population in order to provide an index of adequacy of the food supply in terms of calories. Analysed together with the prevalence of undernourishment, it allows the determination of whether undernourishment is mainly due to the insufficiency of the food supply or to particularly poor distribution. **Aggregate calculations:** FAO Statistics Division (ESS).

Share of dietary energy supply derived from cereals, roots and tubers (percentage)

Energy supply (in kcal/person/day) provided by cereals, roots and tubers divided by total dietary energy supply (in kcal/person/day) calculated from the correponding categories in the FAOSTAT Food Balance Sheets. **Aggregate calculations:** FAO Statistics Division (ESS).

Per capita cereal production (kg)

Calculated as the total cereal production divided by total population. Cereals include wheat, rice paddy, barley, maize, popcorn, rye, oats, millets, sorghum, buckwheat, quinoa, fonio, triticale, canary seed, mixed grain and cereals nes. **Aggregate calculations:** Weighted average using population (WPP2012) as weight. Missing data are not imputed.

Share of food expenditure of the poor (percentage)

Proportion of food consumption over total consumption (food and non-food) for the lowest income quintile of the population.

Depth of the food deficit (kcal/person/day)

Indicates how many calories would be needed to lift the undernourished from their status, everything else being constant. The average intensity of food deprivation of the undernourished, estimated as the difference between the average dietary energy requirement and the average dietary energy consumption of the undernourished population (food-deprived), is multiplied by the number of undernourished to provide an estimate of the total food deficit in the country, which is then normalized by the total population. **Aggregate calculations:** FAO Statistics Division (ESS).

Minimum dietary energy requirement (kcal/person/day)

Establishes a cut-off point, or threshold, to estimate the prevalence (percentage) of the undernourished population in a country expressed in kcal per person per day. When the threshold, or cut-off point, changes, so does the prevalence of people estimated to be undernourished. Dietary energy requirements differ by gender and age, and for different levels of physical activity. Accordingly, minimum dietary energy requirements, the amount of energy needed for light activity and minimum acceptable weight for attained height, vary by country, and from year to year depending on the

gender and age structure of the population. For an entire population, the minimum energy requirement is the weighted average of the minimum energy requirements of the different gender-age groups in the population. Particularly in countries with a high prevalence of undernourishment, a large proportion of the population typically consumes dietary energy levels close to the cut-off point, making the minimum dietary energy requirement a highly sensitive parameter. In most countries, the new human energy requirement standards have resulted in an overall drop in the amount of food required, and a decline in the prevalence of undernourishment. **Aggregate calculations:** FAO Statistics Division (ESS).

Average dietary energy requirement (kcal/person/day)

The average of the individual's dietary energy requirement is a proper normative reference for adequate nutrition in the population. While it would be mistaken to take the average dietary energy requirement value as the cut-off point to determine the prevalence of undernourishment, its value could be used to calculate the depth of the food deficit, that is, the amount of dietary energy that would be needed to ensure that, if properly distributed, hunger would be eliminated. **Aggregate calculations:** FAO Statistics Division (ESS).

Prevalence of undernourishment (percentage)

Proportion of the population etimated to be at risk of caloric inadequacy. This is the traditional FAO hunger indicator, adopted as Millennium Development Goal indicator 1.9 for Goal 1, target 1.C. The indicator is calculated on three year averages. **Aggregate calculations:** FAO Statistics Division (ESS).

Source

Food and Agriculture Organization of the United Nations.

Source of Average dietary energy supply adequacy and Share of dietary energy supply derived from cereals, roots and tubers: FAOSTAT database and FAO Statistics Division (ESS) calculations.

Source of Total cereal production: FAOSTAT database.

Source of Depth of the food deficit: FAO Statistics Division (ESS) calculations.

Source of Share of food expenditure of the poor: LABORSTA – ILO: http://laborsta.ilo.org/STP/guest. Original Source of data: National Household Surveys.

Source of Minimum dietary energy requirement and Average dietary energy requirement: FAO calculations.

Source of Prevalence of undernourishment: FAO Statistics Division (ESS) calculations.

Data obtained: 14 March 2013.

D.3.1 Food availability

	Average dietary energy supply adequacy			Share of dietary energy supply derived from cereals, roots and tubers			Per capita cereal production			Share of food expenditure of the poor	
	Percentage			Percentage			Kilograms			Percentage	
	90-92	00-02	10-12	90-92	00-02	07-09	1990	2000	2011	Earliest	Latest
East and North-East Asia	**108**	**117**	**123**	**66**	**58**	**53**	**326.5**	**294.0**	**349.9**		
China	107	117	125	70	60	54	347.3	318.1	380.6		
DPR Korea	99	90	92	63	67	68	311.0	128.8	191.0		
Hong Kong, China											
Japan	121	118	111	42	41	41	118.2	101.8	73.5		
Macao, China											
Mongolia	94	95	103	44	48	48	328.9	59.3	161.8		
Republic of Korea	124	128	133	55	48	44	196.3	163.1	133.7		
South-East Asia	**100**	**107**	**120**	**68**	**64**	**62**	**290.7**	**337.2**	**413.5**		
Brunei Darussalam	124	127	143	48	50	43	3.6	0.9	2.7		
Cambodia	94	100	111	84	79	75	285.7	342.2	650.1	85.6 (04)	84.3 (09)
Indonesia	105	108	123	73	72	69	290.6	294.7	342.0		21.7 (08)
Lao PDR	92	96	102	84	76	73	367.1	430.3	638.5	65.8 (03)	83.8 (07)
Malaysia	121	124	125	45	46	48	105.4	94.2	94.4		
Myanmar							342.4	456.6	664.1		
Philippines	107	111	118	57	57	59	237.9	217.6	248.9	65.0 (03)	60.9 (06)
Singapore										30.8 (02)	
Thailand	90	110	120	52	48	51	374.1	489.7	596.6		
Timor-Leste	92	100	95	74	74	71	176.7	163.4	117.6		
Viet Nam	89	103	123	78	69	62	288.7	427.0	522.9	78.3 (92)	65.4 (10)
South and South-West Asia	**109**	**106**	**109**	**66**	**63**	**60**	**238.3**	**237.9**	**250.5**		
Afghanistan							230.6	94.2	160.8		
Bangladesh	101	107	107	85	84	82	258.4	298.4	344.4	66.1 (00)	65.3 (05)
Bhutan							224.6	187.2	207.5		
India	104	101	105	66	62	60	223.2	225.4	233.8	74.0 (93)	
Iran (Islamic Rep. of)	142	133	131	62	61	55	242.8	195.3	314.3		
Maldives	117	118	124	50	42	39	0.0	0.4	0.5	34.6 (02)	
Nepal	105	107	113	77	75	72	322.8	306.9	316.9	69.0 (95)	71.6 (10)
Pakistan	109	109	110	55	52	48	188.6	211.8	205.2		75.2 (05)
Sri Lanka	97	103	109	60	56	56	148.9	153.7	192.0	60.1 (99)	
Turkey	164	154	155	54	53	50	559.3	510.5	481.7	42.8 (03)	
North and Central Asia		**114**	**126**		**50**	**47**		**392.6**	**607.7**		
Armenia		98	121		60	47		71.8	146.9	79.8 (03)	64.4 (05)
Azerbaijan		108	129		69	64		184.3	257.6	66.1 (03)	62.3 (06)
Georgia		101	117		57	54		88.1	91.5		53.8 (05)
Kazakhstan		113	144		49	47		791.7	1 655.0		
Kyrgyzstan		106	120		59	55		312.8	278.5		
Russian Federation		119	128		47	43		438.3	640.2		
Tajikistan		88	100		71	64		88.1	132.4		74.2 (07)
Turkmenistan		115	127		63	60		389.0	691.5		
Uzbekistan		103	115		59	59		157.6	252.7		
Pacific	**124**	**121**	**128**	**29**	**31**	**32**	**916.3**	**1 168.8**	**1 135.8**		
American Samoa											
Australia	126	123	133	25	26	26	1 347.9	1 788.6	1 758.6	19.8 (98)	
Cook Islands											
Fiji	119	124	126	46	49	48	39.1	17.5	11.7		
French Polynesia	122	121	121	38	34	34					
Guam							0.2	0.2	0.3		
Kiribati	121	125	123	43	40	40					
Marshall Islands											
Micronesia (F.S.)								1.5	2.3		
Nauru											
New Caledonia	125	123	130	41	39	37	7.4	22.8	10.6		
New Zealand	130	127	124	27	29	27	256.0	221.4	226.4		
Niue											
Northern Mariana Islands											
Palau											
Papua New Guinea	112	108	113	49	51	54	1.0	2.1	2.1		
Samoa				32	30	28					
Solomon Islands	103	111	113	65	70	68	3.0	11.0	8.5		
Tonga											
Tuvalu											
Vanuatu	122	125	126	44	48	48	4.8	5.0	3.2		
Asia and the Pacific	**108**	**112**	**117**	**65**	**60**	**56**	**290.5**	**290.2**	**337.4**		
Developed countries	122	119	115	40	38	38	268.8	324.3	327.8		
Developing countries	108	111	117	66	61	57	291.6	288.8	337.8		
LLDC	112	101	114	65	66	64		269.0	421.4		
LDC	97	102	107	81	79	75	288.3	325.2	411.2		
ASEAN	100	107	120	68	64	62	290.9	337.5	414.1		
ECO	128	120	123	58	56	53	289.2	273.6	332.0		
SAARC	104	103	106	67	64	61	222.5	227.6	237.3		
Central Asia		105	123		59	57		298.0	544.0		
Pacific island dev. econ.	113	112	116	48	50	52	6.3	4.9	3.6		
Low income econ.	98	101	106	78	77	74	290.1	302.2	382.6		
Lower middle income econ.	104	104	110	66	62	60	230.6	237.9	257.1		
Upper middle income econ.	111	119	126	65	58	52	354.6	339.7	421.5		
High income econ.	122	121	119	43	41	40	251.2	285.3	280.4		
Africa	**108**	**110**	**115**	**65**	**63**	**62**	**153.7**	**139.4**	**157.1**		
Europe	**133**	**133**	**135**	**33**	**33**	**32**	**569.4**	**553.9**	**627.3**		
Latin America and Carib.	**117**	**121**	**125**	**43**	**41**	**40**	**224.4**	**265.6**	**327.8**		
North America	**138**	**148**	**142**	**26**	**25**	**25**	**1 313.3**	**1 257.0**	**1 249.1**		
World	**114**	**117**	**121**	**56**	**53**	**51**	**352.0**	**340.5**	**376.2**		

D.3.2 Food insecurity outcomes

	Prevalence of undernourishment			Depth of the food deficit			Average dietary energy requirement			Minimum dietary energy requirement		
	Percentage			Kcal/person/day			Kcal/person/day			Kcal/person/day		
	90-92	00-02	10-12	90-92	00-02	10-12	90-92	00-02	10-12	90-92	00-02	10-12
East and North-East Asia	**19.0**	**13.0**	**11.0**	**138.0**	**91.0**	**73.0**	**2 360**	**2 410**	**2 450**	**1 850**	**1 880**	**1 900**
China	21.0	14.0	11.0	156.0	97.0	76.0	2 350	2 410	2 450	1 850	1 880	1 910
DPR Korea	25.0	37.0	32.0	183.0	282.0	249.0	2 350	2 340	2 390	1 840	1 840	1 860
Hong Kong, China												
Japan	<5	<5	6.0	15.0	19.0	40.0	2 430	2 440	2 420	1 890	1 890	1 870
Macao, China												
Mongolia	37.0	36.0	24.0	265.0	272.0	216.0	2 210	2 320	2 350	1 760	1 830	1 850
Republic of Korea	<5	<5	<5	13.0	9.0	5.0	2 390	2 410	2 450	1 870	1 880	1 900
South-East Asia	**29.6**	**19.2**	**10.9**	**175.0**	**150.0**	**127.0**	**2 192**	**2 252**	**2 290**	**1 741**	**1 777**	**1 800**
Brunei Darussalam	5.0	5.0	5.0	14.0	9.0	2.0	2 267	2 324	2 359	1 795	1 828	1 851
Cambodia	39.9	32.8	17.1	250.0	219.0	114.0	2 010	2 129	2 249	1 631	1 697	1 769
Indonesia	19.9	17.4	8.6	129.0	116.0	60.0	2 180	2 239	2 270	1 731	1 766	1 786
Lao PDR	44.6	38.4	27.8	332.0	280.0	203.0	2 188	2 235	2 337	1 757	1 787	1 843
Malaysia	5.0	5.0	5.0	23.0	22.0	17.0	2 233	2 281	2 317	1 772	1 801	1 823
Myanmar							2 207	2 275	2 323	1 748	1 790	1 820
Philippines	24.2	21.0	17.0	155.0	134.0	106.0	2 127	2 161	2 199	1 700	1 720	1 744
Singapore												
Thailand	43.8	17.4	7.3	357.0	126.0	52.0	2 373	2 415	2 436	1 864	1 888	1 899
Timor-Leste	40.1	28.2	38.2	280.0	170.0	250.0	2 112	1 994	2 053	1 689	1 618	1 648
Viet Nam	46.9	20.9	9.0	357.0	157.0	69.0	2 139	2 246	2 309	1 705	1 771	1 808
South and South-West Asia	**26.0**	**20.0**	**17.0**	**166.0**	**142.0**	**121.0**	**2 160**	**2 210**	**2 260**	**1 720**	**1 750**	**1 780**
Afghanistan							2 050	2 040	2 080	1 660	1 650	1 670
Bangladesh	35.0	17.0	17.0	235.0	120.0	122.0	2 130	2 200	2 260	1 700	1 750	1 780
Bhutan												
India	27.0	22.0	18.0	176.0	151.0	125.0	2 160	2 210	2 260	1 720	1 750	1 780
Iran (Islamic Rep. of)	<5	5.0	5.0	17.0	30.0	32.0	2 170	2 350	2 420	1 740	1 840	1 890
Maldives	11.0	10.0	6.0	59.0	61.0	36.0	2 030	2 160	2 290	1 640	1 720	1 790
Nepal	26.0	24.0	18.0	160.0	160.0	126.0	2 090	2 110	2 180	1 680	1 690	1 720
Pakistan	26.0	24.0	20.0	165.0	163.0	152.0	2 090	2 140	2 210	1 680	1 710	1 750
Sri Lanka	34.0	29.0	24.0	245.0	256.0	211.0	2 240	2 290	2 280	1 770	1 800	1 790
Turkey	<5	<5	<5	3.0	7.0	6.0	2 270	2 340	2 380	1 800	1 840	1 860
North and Central Asia		**7.0**	**<5**		**49.0**	**26.0**	**2 370**	**2 440**	**2 440**	**1 860**	**1 900**	**1 900**
Armenia	22.8	16.0	<5		113.0	17.0	2 300	2 370	2 390	1 810	1 850	1 870
Azerbaijan	23.0	10.0	<5		69.0	11.0	2 260	2 340	2 410	1 790	1 840	1 870
Georgia	60.4	23.0	25.0		185.0	221.0	2 430	2 480	2 500	1 900	1 920	1 940
Kazakhstan	5.0	<5	<5		26.0	3.0	2 270	2 330	2 330	1 790	1 820	1 820
Kyrgyzstan	15.5	14.0	6.0		98.0	43.0	2 240	2 310	2 350	1 780	1 820	1 840
Russian Federation		<5	<5		24.0	12.0	2 440	2 510	2 500	1 910	1 940	1 940
Tajikistan	31.0	41.0	32.0		284.0	262.0	2 120	2 180	2 240	1 700	1 730	1 770
Turkmenistan	9.5	7.0	0.0		47.0	19.0	2 210	2 300	2 350	1 760	1 820	1 850
Uzbekistan	5.0	15.0	6.0		99.0	41.0	2 160	2 250	2 340	1 720	1 780	1 830
Pacific	**<5**	**5.0**	**<5**	**27.0**	**34.0**	**25.0**	**2 410**	**2 400**	**2 420**	**1 890**	**1 880**	**1 890**
American Samoa												
Australia	<5	<5	<5	10.0	11.0	4.0	2 480	2 490	2 490	1 930	1 940	1 940
Cook Islands												
Fiji	6.0	<5	<5	39.0	24.0	25.0	2 270	2 320	2 370	1 810	1 830	1 860
French Polynesia	<5	<5	<5	24.0	23.0	24.0	2 320	2 350	2 430	1 840	1 850	1 900
Guam												
Kiribati	9.0	7.0	8.0	53.0	44.0	51.0	2 190	2 210	2 250	1 740	1 750	1 780
Marshall Islands												
Micronesia (F.S.)												
Nauru												
New Caledonia	7.0	7.0	5.0	42.0	42.0	30.0	2 250	2 280	2 310	1 780	1 790	1 810
New Zealand	<5	<5	<5	6.0	9.0	13.0	2 460	2 470	2 480	1 920	1 930	1 930
Niue												
Northern Mariana Islands												
Palau												
Papua New Guinea							2 140	2 150	2 170	1 710	1 710	1 730
Samoa	13.0	5.0	5.0	80.0	27.0	29.0	2 260	2 240	2 290	1 790	1 790	1 820
Solomon Islands	23.0	14.0	13.0	140.0	84.0	77.0	2 100	2 140	2 160	1 690	1 710	1 720
Tonga												
Tuvalu												
Vanuatu	11.0	8.0	8.0	64.0	48.0	50.0	2 110	2 140	2 180	1 690	1 710	1 730
Asia and the Pacific	**22.0**	**17.0**	**13.0**	**152.0**	**115.0**	**88.0**	**2 260**	**2 310**	**2 350**	**1 790**	**1 820**	**1 840**
Developed countries	<5	<5	<5	14.0	18.0	34.0	2 440	2 440	2 430	1 890	1 890	1 880
Developing countries	23.0	17.0	13.0	158.0	119.0	90.0	2 250	2 300	2 340	1 780	1 810	1 840
LLDC	19.0	25.0	17.0	129.0	171.0	116.0	2 170	2 200	2 250	1 730	1 750	1 780
LDC	37.0	24.0	20.0	253.0	173.0	147.0	2 130	2 190	2 240	1 710	1 740	1 770
ASEAN	30.0	19.0	11.0	206.0	132.0	77.0	2 190	2 250	2 290	1 740	1 780	1 800
ECO	15.0	16.0	13.0	90.0	110.0	93.0	2 160	2 230	2 290	1 730	1 770	1 800
SAARC	28.0	22.0	18.0	183.0	155.0	131.0	2 150	2 200	2 250	1 710	1 740	1 770
Central Asia	12.8	14.5	7.4		98.0	51.0	2 229	2 299	2 350	1 766	1 808	1 838
Pacific island dev. econ.	14.0	16.0	12.0	82.0	98.0	75.0	2 200	2 150	2 230	1 760	1 710	1 770
Low income econ.	35.0	25.0	21.0	241.0	181.0	154.0	2 150	2 200	2 250	1 720	1 750	1 780
Lower middle income econ.	27.0	21.0	16.0	175.0	147.0	115.0	2 160	2 210	2 260	1 720	1 750	1 780
Upper middle income econ.	19.0	12.0	8.0	134.0	85.0	56.0	2 350	2 410	2 450	1 850	1 880	1 900
High income econ.	<5	<5	<5	14.0	16.0	27.0	2 430	2 440	2 430	1 890	1 890	1 890
Africa	**27.3**	**25.1**	**22.9**	**195.0**	**185.0**	**175.0**	**2 152**	**2 185**	**2 205**	**1 726**	**1 745**	**1 756**
Europe	**<5**	**<5**	**<5**	**11.0**	**9.0**	**7.4**	**2 500**	**2 520**	**2 520**	**1 940**	**1 950**	**1 950**
Latin America and Carib.	**14.6**	**11.2**	**8.3**	**98.0**	**75.0**	**59.0**	**2 280**	**2 326**	**2 363**	**1 809**	**1 835**	**1 856**
North America	**<5**	**<5**	**<5**	**3.0**	**1.0**	**2.0**	**2 520**	**2 540**	**2 540**	**1 960**	**1 980**	**1 970**
World	**18.6**	**14.9**	**12.5**	**130.0**	**106.0**	**94.0**	**2 168**	**2 214**	**2 248**	**1 806**	**1 827**	**1 842**

D.4. Crime

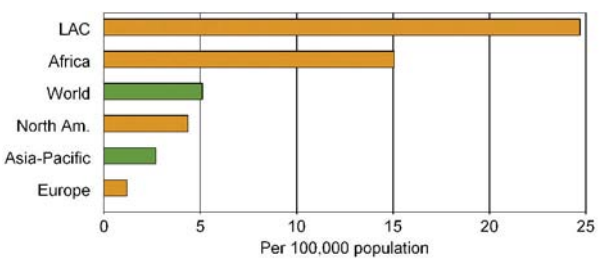
Crime, the application of the rule of law and the strength of the criminal justice system have a profound impact not only on the victims of crime and injustice but also on the economic and social development of a society as a whole. High crime rates and a weak or ineffective criminal justice system hamper economic development and reduce both the quality of life and the confidence that people need in order to invest in their neighbourhoods and businesses.

The impact of crime is particularly profound in countries with inadequate social protection, such as affordable health care and insurance. Victims of crime in these countries are less able to recover physically from violent crime or financially from property crimes.

Homicide rates in Asia and the Pacific are among the lowest in the world.

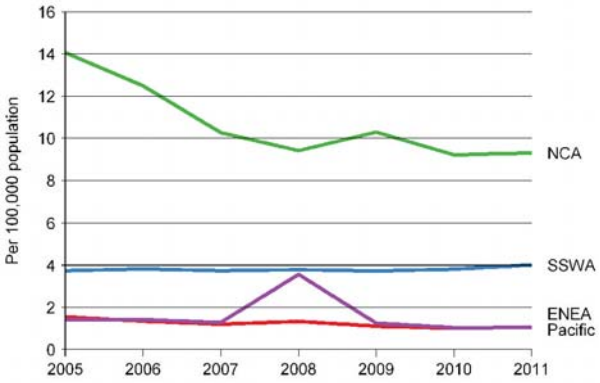
The annual homicide rate for Asia and the Pacific will vary year by year depending on the countries for which data are available, but the general trend is that homicide rates are decreasing. In 2010, the homicide rate for the region was 2.7 per 100,000 – approximately half of the global average of 5.1 per 100,000 – and included countries with some of the lowest homicide rates in world. Indeed, the three lowest homicide rates provided by countries/areas for 2011 were from Asia and the Pacific, namely: Japan (0.3 per 100,000); Singapore (0.3 per 100,000); and Hong Kong, China (0.2 per 100,000).

Figure D.4-1
Homicide rates, world regions, 2011 or latest year



The highest homicide rates in the region are found in the countries of North and Central Asia. Kazakhstan and the Russian Federation, for example, have annual homicide rates above the global average. However, rates have fallen substantially in this subregion, driven mostly by a fall in homicide rates per 100,000 in the Russian Federation from 17.7 in 2005 to 9.7 in 2011.

Figure D.4-2
Trends in homicide rates, Asia and the Pacific, 2005-2011



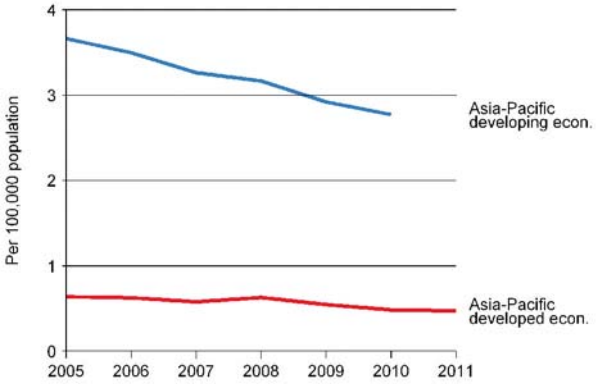
Note: The substantial increase in the homicide rate for the Pacific in 2008 was due to the availability of data for Papua New Guinea for that year only.

There are many factors that may affect homicide rates, but the link between homicide and development is one of the clearest. Higher homicide rates are associated with low human and economic development. This is borne out by comparisons of homicide rates in developed and developing countries in Asia and the Pacific. Long-term declines in the homicide rates in both groups have coincided with periods of economic growth, but homicide rates in developing countries were more than five times higher in 2010 than they were in developed countries, despite having fallen further in recent years.

Countries with higher homicide rates also tend to have higher robbery rates.[1] Thus, the comparison of homicide rates across Asia and the Pacific may also serve as a reasonable proxy for violent crime in general.

[1] United Nations Office on Drugs and Crime, *2011 Global Study on Homicide: Trends, Contexts, Data* (Vienna, 2011).

Figure D.4-3
Homicide rates, developing and developed countries in Asia and the Pacific, 2005-2011



Note: The substantial increase in the homicide rate for developing countries in 2008 was due to the availability of data for countries with higher than average homicide rates, such as Indonesia, Myanmar and Papua New Guinea for that year only.

Most homicide victims in Asia and the Pacific are male.

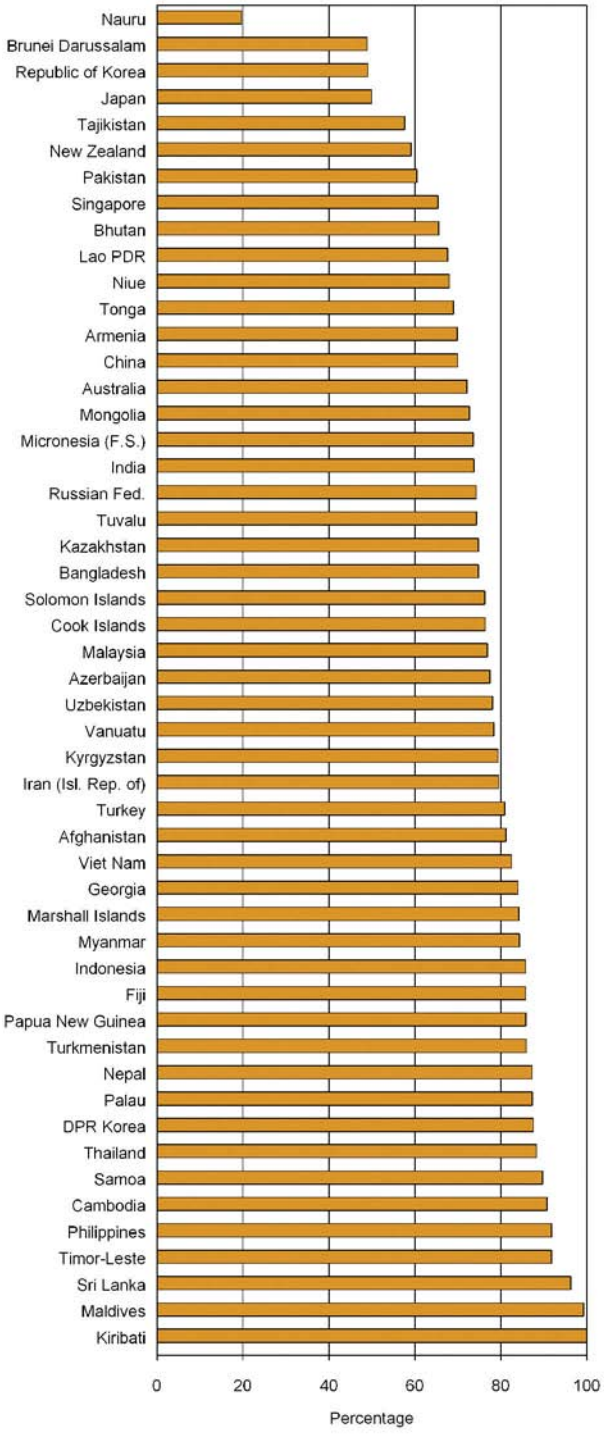
Globally, about 80 per cent of homicide victims are male. This is consistent with the countries of Asia and the Pacific, where, on average, males account for about 75 per cent of victims. The distribution of male and female victims, however, does vary substantially across countries.

In Cambodia, Maldives, Philippines, Sri Lanka and Timor-Leste for instance, over 90 per cent of homicide victims are males, while in Brunei Darussalam, Japan and Republic of Korea, the figure is closer to 50 per cent.

Homicide rates are disproportionately high for men because they are more likely to be engaged in high-risk, violent activities that tend to increase homicide rates. According to figures published by the UNODC[2], the chances of being a victim of homicide peak for younger men and reduce as involvement in violent activities, such as street crime, gang membership, drug consumption, possession of weapons and street fighting, decreases.

In contrast, homicide rates for women tend to be far more evenly distributed over age groups due to their lower exposure to these high-risk, age-specific activities, and they are more often the victims of intimate partner or family violence.

Figure D.4-4
Percentage of all homicide victims that were male, latest year available (2008-2010)



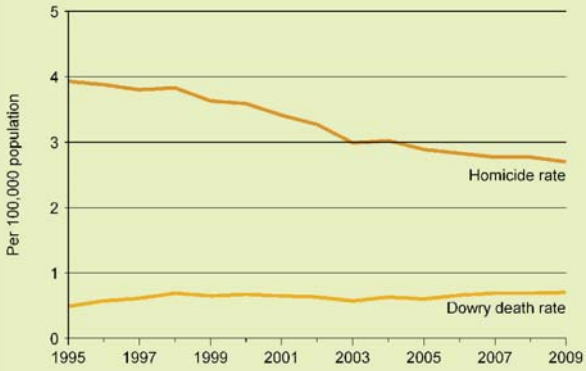
[2] United Nations Office on Drugs and Crime, *2011 Global Study on Homicide: Trends, Contexts, Data* (Vienna, 2011).

Box D.4-1
Patterns of homicides and dowry deaths in India

The National Crime Records Bureau of India keeps detailed criminal justice data on the number of homicide victims by sex, age and motive. In 2009, out of a total of 33,159 recorded homicide victims in India, 8,718 (26 per cent) were female, which is about the same as in previous years. Some of these killings relate to disputes over dowry payments or violent demands for higher payments from the families of brides or brides-to-be. Although the payment of a dowry has been illegal in India since 1961, the practice remains common. Among all female victims of recorded homicides, 1,267 (about 15 per cent) were recorded as dowry-related killings.

The police can record killings as "dowry deaths" under a separate section of the Indian Penal Code.[a] These are deaths of women within seven years of their marriage for which circumstantial evidence provides a strong suspicion of a dowry-related killing. In 2009, the police recorded 8,383 dowry deaths of women and girls, so the total number of homicides linked to dowries in 2009 was 9,650,[b] which is 56 per cent of all female victims of violent killings including dowry deaths (17,101). The reported number of dowry deaths has been increasing for many years. While homicide levels steadily decreased between 1995 and 2009 (by 31 per cent), the rate of recorded dowry deaths increased by more than 40 per cent in the same period. This increase might be partly due to more accurate recording by the police when there are suspicious deaths, and partly due to increased awareness and determination to address the issue. However, it is likely that, in addition to officially recorded dowry-related homicides and dowry deaths, an unknown number of deaths related to dowry remain undetected because they are often recorded as accidents or suicides.

Homicide rates and dowry death rates in India, 1995-2009



Source: National Crime Records Bureau of India.

Source: United Nations Office on Drugs and Crime, *2011 Global Study on Homicide: Trends, Contexts, Data* (Vienna, 2011).

[a] Section 304B of the Indian Penal Code specifies that "where the death of a woman is caused by any burns or bodily injury or occurs otherwise than under normal circumstances within seven years of her marriage and it is shown that soon before her death she was subjected to cruelty or harassment by her husband or any relative of her husband for, or in connection with, any demand for dowry, such death shall be called 'dowry death' and such husband or relative shall be deemed to have caused her death".

[b] This is the sum of dowry-related killings (1,267) and dowry deaths (8,383) for 2009.

One quarter of the world's estimated prison population is held in China and the Russian Federation.

The prison populations of China (1.64 million) and the Russian Federation (756,000) in 2011 are the second and third largest in the world behind that of the United States and account for about one quarter of the world's estimated total prison population of about 9.8 million.[3]

Prison populations and prison population rates reflect to varying degrees the levels of crime, criminal justice policy and adherence to the rule of law in a country and have a substantial and often underestimated social and economic impact. High prison rates can, for example, result in long-term economic problems if they lead to income inequality and more concentrated poverty, particularly if prison rates are highest for vulnerable groups, such as the young, the poor, the poorly educated or minorities.

The average (unweighted) prison population rate for Asia and the Pacific is 205 per 100,000 population based on the latest figures available – more than three times lower than the rate of 730 per 100,000 in the United States. However, prison rates in the region vary substantially; for example, they are 17 times higher in Georgia (544 per 100,000) than in India (31 per 100,000).

[3] International Centre for Prison Studies, King's College London, *World Prison Population List*, 8th ed. (London, 2009).

Box D.4-2
Difficulties in comparing conventional crime statistics

A well-defined and utilized system for the collection, analysis and dissemination of information on crime and criminal justice is a prerequisite for effective crime prevention. However, most crime statistics are derived from data recorded by the police, and the accuracy of these statistics and their consistency with those of other countries depends on four key factors:

- How offences are defined by national legislations.
- How offences are counted and recorded.
- The confidence victims have in law enforcement and their willingness to report crime.
- The capacity of the authorities to detect crime.

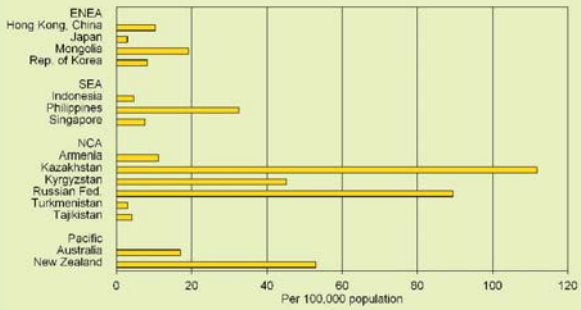
It is beyond the scope of statistics to account for differences in the capacity of the authorities to detect crime, but the first three issues can be addressed through best practices in maintaining administrative data and conducting random surveys.

The annual collection by UNODC of administrative crime data from States Members of the United Nations focuses on categories of conventional crimes that have particular relevance for policymakers and where definitions are most consistent. However, the rates of response to this survey have been as low as 25 per cent in Asia and the Pacific, and the crime rates reported can vary substantially. For example, the rate of robbery in India is typically 60 times lower than that reported by the Russian Federation. Some of this difference may reflect the "true" higher rate of robberies in the Russian Federation, but differences in reporting practices will also have an unquantifiable impact. For this reason, most comparative analyses of crime across countries focus on trends rather than on crime rates.

Even international comparisons of homicides, which are defined reasonably consistently across countries, and where crime rates are more routinely presented, should be made with some caution. For example, if a victim of a punch to the face dies, some countries will record the offence committed as manslaughter and others as intentional homicide. There can also be large variations in the homicide levels reported for the same country from different sources.

An international classification for statistical purposes could harmonize the way offences are defined and thus improve international comparability. Such a classification should not be aimed at standardizing national penal legislation but rather at defining and classifying offences in a uniform way purely for statistical purposes. This work is currently under way as mandated by the Statistical Commission and led by UNODC.

Variation in reported robbery rates for the 14 Asian and Pacific countries and areas, 2011



However, differences in the willingness of victims to report crimes will continue to distort comparisons of police-recorded figures even after the way they are counted and recorded is standardized. Crime victimization surveys are an alternative source of comparable data on conventional crimes not biased by a victim's trust in law enforcement or lack thereof. These surveys are often used to supplement and complement administrative statistics on conventional crimes, and they provide a more reliable estimate of the true crime rate and trends. The *Manual on Victimization Surveys*[a] covers a wide range of issues related to planning and implementing a victimization survey and is intended to aid standardization.

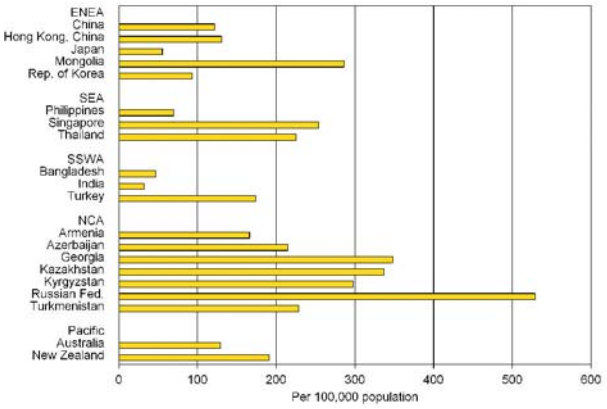
A full analysis of the issues in producing comparable statistics on conventional crimes, as well as non-conventional crimes such as cyber-crime and corruption, was presented by UNODC and the National Institute of Statistics and Geography of Mexico at the forty-fourth session of the Statistical Commission in 2013. Their report on a road map to improve the quality and availability of crime statistics at the national and international levels (E/CN.3/2013/11) was welcomed by the Statistical Commission, and the activities presented in the road map were supported.[b]

[a] United Nations Office on Drugs and Crime and United Nations Economic Commission for Europe, *Manual on Victimization Surveys* (Geneva, United Nations, 2010).

[b] See the report of the Statistical Commission on its forty-fourth session *(Official Records of the Economic and Social Council, 2013, Supplement No. 4* (E/2013/24-E/CN.3/2013/33), Decision 44/110).

Many of the countries with the lowest prison population rates are low-income economies or lower-middle-income economies, including India (31 per 100,000), Bangladesh (47 per 100,000) and the Philippines (64 per 100,000). This may in part be due to the substantial investment of resources required to keep a person in prison and to maintain an effective criminal justice system.

Figure D.4-5
Prison population rates by subregion, latest year (2006-2011)



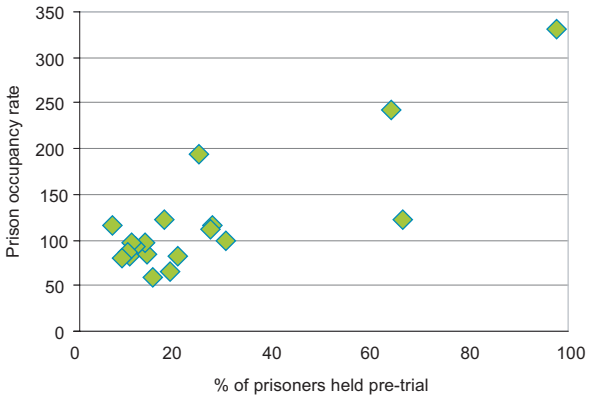
In some developing countries in the region, prisons have high levels of overcrowding and a high proportion of people held untried or pretrial.

In addition to the volume and rate of people held in prison, there are other aspects of a country's incarceration policy that also have strong socioeconomic implications. Those incarcerated in overcrowded prisons are at far greater risk of violence and communicating or catching diseases, which can, in turn, be passed back into the wider community. At the same time, excessive and arbitrary pretrial detention undermines the rule of law in a country, deepens poverty and stunts economic development. Furthermore, the individuals held and not yet proven to be guilty may lose their jobs, their homes and their ability to provide for their families.

The problems of prison overcrowding and of the proportions of prisoners held pretrial often go hand in hand. In Asia and the Pacific, Bangladesh, India and the Philippines are particularly affected, with occupancy rates ranging from around 125 per cent of capacity to 300 per cent of capacity, and pretrial detention rates above 60 per cent of all prisoners.

As observed with low prison rates, these problems are found in low-income economies and lower-middle-income economies. It is often more expensive for the State to keep someone in prison than for a parent to send a child to an elite private school, and pressure for scarce government resources combined with voter apathy towards prisoners may partly explain the lack of investment in adequate facilities.

Figure D.4-6
Relationship between pretrial detention and overcrowding, latest year (2006-2011)



Further reading

National Institute of Statistics and Geography of Mexico and United Nations Office on Drugs and Crime, "Report of the National Institute of Statistics and Geography of Mexico and the United Nations Office on Drugs and Crime on a road map to improve the quality and availability of crime statistics at the national and international levels". E/CN.3/2013/11. Available from http://unstats.un.org/unsd/statcom/doc13/2013-11-CrimeStats-E.pdf.

Open Society Foundations and United Nations Development Programme. *The Socioeconomic Impact of Pretrial Detention: A Global Campaign for Pretrial Justice Report*. New York: Open Society Foundations, 2011.

United Nations Office on Drugs and Crime. *Crime and Victimization in Asia.* Forthcoming.

_____. *Global Study on Homicide: Trends, Contexts, Data*. Vienna, 2011.

_____. *World Crime Trends and Emerging Issues and Responses in the Field of Crime Prevention and Criminal Justice*. Theme study for the twenty-first session of the Commission on Crime Prevention. Vienna, 2012. Available from www.unodc.org/documents/data-and-analysis/Crime-statistics/V1250994.pdf.

Technical notes

Intentional homicide (per 100,000 population)

Intentional homicide – Male and female victims (percentage)

Intentional homicide is unlawful death purposefully inflicted on a person by another person. It excludes attempted homicides, deaths related to conflicts, deaths caused when the perpetrator was reckless or negligent, as well as killings that are usually considered justifiable according to penal law, such as those by law enforcement agents in the line of duty or in self-defence. **Aggregate calculations:** Weighted averages using population (WPP2012) as weight (per 100,000 population), no aggregates calculated (percentage). Missing data are not imputed.

Adults held in prison (number, per 100,000 population)

Persons held in prisons, penal institutions or correctional institutions on a specified day, and should exclude non-criminal prisoners held for administrative purposes, for example, foreign citizens without a legal right to stay held prior to removal. **Aggregate calculations:** Weighted averages using population (WPP2012) as weight. Missing data are not imputed.

Adult prison capacity (number)

The intended number of places available at 31 December without overcrowding, excluding places/capacity used for the detention of persons on the basis of their immigration status. **Aggregate calculations**: Weighted averages using population (WPP2012) as weight. Missing data are not imputed.

Occupancy rate (percentage)

The number of people held in prison divided by the official prison capacity. **Aggregate calculations:** Weighted averages using population (WPP2012) as weight. Missing data are not imputed.

Untried or in pre-trial detention (number)

Persons held in prisons, penal institutions or correctional institutions without trial or before a trial. **Aggregate calculations:** Weighted averages using population (WPP2012) as weight. Missing data are not imputed.

Source

Source of crime statistics: UNODC. Member States regularly submit to UNODC statistics on crime and criminal justice (through the Crime Trend Survey). UNODC applies scientific methods to maximize the comparability of the data. **Data obtained:** 30 August 2013.

D.4.1 Intentional homicide

	Intentional homicide									Intentional homicide	
										Male victims	Female victims
	Per 100,000 population									Percentage	Percentage
	1995	2000	2005	2006	2007	2008	2009	2010	2011	Latest	Latest
East and North-East Asia			**1.5**	**1.3**	**1.2**	**1.3**	**1.1**	**1.0**			
China			1.6	1.4	1.2	1.1	1.1	1.0		69.9 (08)	30.1 (08)
DPR Korea						15.2				87.6 (08)	12.4 (08)
Hong Kong, China			0.5	0.5	0.3	0.5	0.7	0.5	0.2		
Japan	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.3	50.0 (09)	50.0 (09)
Macao, China		5.1	1.5	2.2	2.2	1.5	1.9	0.7			
Mongolia			15.6	13.0	11.2	7.9	8.1	8.7	9.5	72.7 (09)	27.3 (09)
Republic of Korea		2.0	2.3	2.3	2.3	2.3	2.9	2.6		49.1 (08)	51.0 (08)
South-East Asia						**3.3**	**2.5**				
Brunei Darussalam			0.0	0.5						48.9 (08)	51.1 (08)
Cambodia	3.6	4.6	3.4							90.8 (08)	9.2 (08)
Indonesia						0.6	0.6	0.4	0.6	85.8 (08)	14.2 (08)
Lao PDR						4.6				67.6 (08)	32.4 (08)
Malaysia	1.9	2.4	1.9	2.3						76.8 (08)	23.2 (08)
Myanmar						10.2				84.4 (08)	15.6 (08)
Philippines		7.4	7.5	7.1	6.7	6.5	5.4			91.8 (08)	8.2 (08)
Singapore	1.5	0.9	0.5	0.4	0.4	0.4	0.5	0.4	0.3	65.4 (08)	34.6 (08)
Thailand	7.6	8.1	7.2	7.0	6.5	5.8	5.4	5.3	4.8	88.3 (08)	11.8 (08)
Timor-Leste						6.9				91.8 (08)	8.2 (08)
Viet Nam						1.6				82.4 (08)	17.6 (08)
South and South-West Asia	**4.4**	**4.4**	**3.7**	**3.8**	**3.7**	**3.8**	**3.7**	**3.8**	**4.0**		
Afghanistan						2.4				81.3 (08)	18.8 (08)
Bangladesh			2.6	2.9	2.7	2.8	2.9	2.7		74.8 (08)	25.2 (08)
Bhutan		3.2	1.7	1.3	1.2	1.0				65.6 (08)	34.5 (08)
India	4.4	4.2	3.5	3.5	3.4	3.4	3.4	3.4	3.5	73.7 (09)	26.3 (09)
Iran (Islamic Rep. of)							3.0			79.5 (08)	20.5 (08)
Maldives					1.0	1.6				99.3 (08)	0.7 (08)
Nepal		2.6	3.3	2.3	3.1	3.2	2.8			87.3 (08)	12.7 (08)
Pakistan		6.2	6.1	6.2	6.4	7.2	7.3	7.6	7.8	60.5 (08)	39.5 (08)
Sri Lanka			6.2	10.2	8.2	7.3	4.6	3.6		96.3 (08)	3.7 (08)
Turkey			4.9	4.6	3.6	3.3				80.9 (08)	19.1 (08)
North and Central Asia			**14.1**	**12.5**	**10.3**	**9.4**	**10.3**	**9.2**	**9.3**		
Armenia	3.6	3.0	1.9	2.6	2.5	2.7	2.7	1.4		69.9 (09)	30.1 (09)
Azerbaijan					2.1	2.1		2.2		77.5 (08)	22.5 (08)
Georgia	7.7	5.0	9.0	7.3	7.5	6.0	4.8	4.3	2.5	84.0 (10)	15.0 (10)
Kazakhstan	15.4	15.5	11.9	11.3	10.7	10.5	10.1	8.7	8.8	74.8 (08)	25.2 (08)
Kyrgyzstan	11.7	8.7	8.3	8.8	8.1	8.0	7.6	14.6	6.5	79.4 (08)	20.6 (08)
Russian Federation			17.7	15.5	12.8	11.6	11.2	10.2	9.7	74.3 (08)	25.7 (08)
Tajikistan	7.5	4.6	2.4	4.3	2.3	1.8	2.1	2.1		57.6 (08)	42.4 (08)
Turkmenistan	6.4	5.9	4.3	4.2						85.9 (08)	14.1 (08)
Uzbekistan	5.0	4.3	3.5	3.3	3.1	3.1				78.1 (08)	21.9 (08)
Pacific	**1.7**	**1.5**	**1.4**	**1.4**	**1.3**	**3.6**	**1.2**	**1.0**	**1.0**		
American Samoa											
Australia	1.8	1.6	1.3	1.4	1.2	1.2	1.2	1.0	1.1	72.1 (09)	27.5 (09)
Cook Islands										76.3 (08)	23.7 (08)
Fiji										85.8 (08)	14.2 (08)
French Polynesia				1.2	2.7	3.4	0.4				
Guam		1.3	4.2	6.4	0.6						
Kiribati						7.3				100.0 (08)	0.0 (08)
Marshall Islands										84.2 (08)	15.8 (08)
Micronesia (F.S.)						0.9				73.6 (08)	26.4 (08)
Nauru						9.8				19.6 (08)	80.4 (08)
New Caledonia											
New Zealand	1.1	1.3	1.5	1.2	1.1	1.2	1.5	1.1	0.9	59.1 (08)	40.9 (08)
Niue										68.0 (08)	32.0 (08)
Northern Mariana Islands											
Palau						0.0				87.3 (08)	12.7 (08)
Papua New Guinea						13.0				85.9 (08)	14.1 (08)
Samoa						1.1				89.7 (08)	10.3 (08)
Solomon Islands			5.5	4.8	5.2	3.7				76.3 (08)	23.8 (08)
Tonga						1.0				68.9 (08)	31.1 (08)
Tuvalu										74.3 (08)	25.7 (08)
Vanuatu						0.9				78.3 (08)	21.7 (08)
Asia and the Pacific			**3.5**	**3.4**	**3.1**	**3.1**	**2.8**	**2.7**			
Developed countries	0.7	0.7	0.6	0.6	0.6	0.6	0.5	0.5	0.5		
Developing countries			3.7	3.5	3.3	3.2	2.9	2.8			
LLDC		6.1	5.4	5.0	4.6	4.1					
LDC			2.7			4.3					
ASEAN						3.3	2.5				
ECO			5.8	5.8	5.5	5.5					
SAARC	4.4	4.4	3.7	3.8	3.7	3.8	3.8	3.8	4.0		
Central Asia	8.6	7.4	6.1	6.0	5.2	5.0					
Pacific island dev. econ.						11.1					
Low income econ.						5.2					
Lower middle income econ.		4.6	4.1	4.1	4.1	3.6	3.5	3.4	3.5		
Upper middle income econ.			3.5	3.1	2.6	2.4	2.3	2.1			
High income econ.	0.7	1.0	1.0	1.0	1.0	1.0	1.1	1.0	0.5		
Africa						**15.1**					
Europe	**2.9**	**2.8**	**2.0**	**1.9**	**1.8**	**1.7**	**1.6**	**1.4**	**1.2**		
Latin America and Carib.			**19.6**	**19.6**	**18.9**	**21.1**	**21.8**	**23.7**	**24.7**		
North America	**7.5**	**5.1**	**5.3**	**5.4**	**5.3**	**5.0**	**4.7**	**4.4**	**4.4**		
World			**5.4**	**5.3**	**5.1**	**6.4**	**5.1**	**5.1**			

D.4.2 Prison occupancy

	Adults held in prison		Adult prison capacity	Occupancy rate	Untried or in pre-trial detention
	Number	Per 100,000 population	Number	Percentage	Number
	Latest	Latest	Latest	Latest	Latest
East and North-East Asia	**1 772 219 (11)**	**116 (11)**			
China	1 640 000 (11)	122 (11)			
DPR Korea					
Hong Kong, China	9 294 (11)	130 (11)	9 576 (11)	97 (11)	1 321 (11)
Japan	69 876 (11)	55 (11)	85 428 (11)	82 (11)	7 792 (11)
Macao, China					
Mongolia	8 011 (11)	286 (11)	6 553 (11)	122 (11)	1 458 (11)
Republic of Korea	45 038 (11)	93 (11)	45 690 (11)	99 (11)	13 840 (11)
South-East Asia					
Brunei Darussalam					
Cambodia					
Indonesia					
Lao PDR					
Malaysia					
Myanmar					
Philippines	58 711 (09)	64 (09)	17 719 (11)	306 (09)	57 383 (08)
Singapore	13 164 (11)	254 (11)	16 254 (11)	81 (11)	1 261 (11)
Thailand	213 094 (09)	310 (09)	109 430 (09)	195 (09)	54 018 (09)
Timor-Leste					
Viet Nam					
South and South-West Asia	**492 892 (09)**	**39 (09)**	**412 137 (09)**	**120 (09)**	**287 938 (09)**
Afghanistan					
Bangladesh	66 200 (06)	47 (06)	27 254 (06)	243 (06)	42 476 (06)
Bhutan					
India	376 969 (09)	31 (09)	307 052 (09)	123 (09)	250 204 (09)
Iran (Islamic Rep. of)					
Maldives					
Nepal			7 233 (06)		
Pakistan					
Sri Lanka					
Turkey	128 253 (11)	174 (11)	115 060 (11)	111 (11)	35 582 (11)
North and Central Asia	**846 034 (10)**	**563 (10)**	**951 914 (10)**	**89 (10)**	**122 649 (10)**
Armenia	5 142 (11)	166 (11)	4 395 (11)	117 (11)	1 437 (11)
Azerbaijan	19 659 (08)	220 (08)	21 320 (08)	92 (08)	2 463 (08)
Georgia	23 684 (10)	544 (10)	24 560 (10)	96 (10)	2 752 (10)
Kazakhstan	51 544 (06)	337 (06)	86 485 (06)	60 (06)	8 306 (06)
Kyrgyzstan	9 607 (08)	185 (08)	14 899 (08)	64 (08)	1 878 (08)
Russian Federation	755 648 (11)	529 (11)	888 702 (11)	85 (11)	112 133 (11)
Tajikistan					
Turkmenistan	10 953 (06)	228 (06)	12 582 (06)	87 (06)	1 191 (06)
Uzbekistan					
Pacific	**37 539 (11)**	**139 (11)**			**8 488 (11)**
American Samoa					
Australia	29 106 (11)	129 (11)			6 723 (11)
Cook Islands					
Fiji					
French Polynesia					
Guam					
Kiribati					
Marshall Islands					
Micronesia (F.S.)					
Nauru					
New Caledonia					
New Zealand	8 433 (11)	191 (11)	10 280 (11)	82 (11)	1 765 (11)
Niue					
Northern Mariana Islands					
Palau					
Papua New Guinea					
Samoa					
Solomon Islands					
Tonga					
Tuvalu					
Vanuatu					
Asia and the Pacific					
Developed countries	107 415 (11)	70 (11)	95 708 (11)	112 (11)	16 280 (11)
Developing countries					
LLDC					
LDC					
ASEAN					
ECO					
SAARC	376 969 (09)	31 (09)	307 052 (09)	123 (09)	250 204 (09)
Central Asia					
Pacific island dev. econ.					
Low income econ.					
Lower middle income econ.	467 416 (09)	36 (09)	335 718 (09)	139 (09)	320 460 (08)
Upper middle income econ.	2 523 901 (11)	161 (11)			
High income econ.	174 911 (11)	82 (11)	167 228 (11)	105 (11)	32 702 (11)
Africa					
Europe	**815 620 (11)**	**142 (11)**	**669 403 (11)**	**122 (11)**	**171 088 (11)**
Latin America and Carib.	**1 023 354 (11)**	**239 (11)**	**673 118 (11)**	**152 (11)**	**371 660 (11)**
North America	**2 239 800 (11)**	**715 (11)**	**2 158 400 (11)**	**104 (11)**	**445 800 (11)**
World					

E.1. Women's empowerment

The concept of women's empowerment broadly refers to a process that increases women's "options, choices, control and power" through women's own agency.[1] Women's empowerment is recognized as a right in itself as well as a transformative tool with a multiplier effect for achieving progress in all other areas of social and economic development.[2] It is well established that women's empowerment plays a pivotal role in attaining gender equality, poverty reduction and other internationally agreed development goals.

Women's empowerment leads to a transformation of the structural factors, social determinants and unequal power relations that underpin widespread and persistent gender inequalities that result in women's unequal access to opportunities and resources across all areas of political, economic, social and cultural life. As women's empowerment is a context-specific, dynamic process with diverse intersecting variables, it remains a latent and unobservable phenomenon.

The present topic provides a snapshot analysis of selected indicators and proxies that measure enabling factors for, and barriers to, women's empowerment in the economic and political spheres. Violence against women will also be discussed due to its far-reaching impact on women's experience of empowerment across all spheres.

Despite economic growth in the Asian and Pacific region, the economic empowerment of women lags behind. Targeted policy measures facilitating women's economic empowerment must be adopted.

Although employment in Asia and the Pacific has been increasing at an average annual rate of 1.3 per cent or more since 2002, female employment as a proportion of male employment has not registered much increase since the early 1990s.

In order to measure women's economic empowerment, several enabling factors can be considered as proxies. For instance, the gender gap in employment captures the status of women's labour force participation relative to that of men's, indicating the extent of gender equitable access to employment. As a proportion of male employment, female employment in the Asian and Pacific region has hovered at about 62 to 65 per cent since the early 1990s, which mirrors the global average. Notable variations between subregions exist, with North and Central Asia having just above 90 females employed for every 100 males, and South and South-West Asia counting just above 36 females employed for every 100 males.

Another indicator to consider is the employment-population ratio, consistently indicating lower rates for women, which for the region stands at 48.0 per cent for women compared with 76.0 per cent for men. There are, however, great variations between subregions, with the ratio for women in East and North-East Asia standing at 62.7 per cent and the ratio for women in South and South-West Asia at 29.4 per cent.

Data indicate that women are overrepresented in sectors and positions that are vulnerable, poorly paid and less secure. For instance, in the Asian and Pacific region in 2012, 42.0 per cent of employed females are in agricultural employment compared with 36.0 per cent of employed males, and 28.9 per cent of females are engaged as contributing family workers compared with 9.2 per cent of males.

A positive trend in the region is the reduced gender gap in employers, with an increase of 8 per cent of female employers relative to male employers within 10 years (from 22.6 per cent in 2002 to 30.5 per cent in 2012). This is a greater increase than the global average, which stood at 23.5 per cent in 2002 and 28.5 per cent in 2012. This reflects, among other things, women's increased entrepreneurial activities. Women-owned small and medium-sized

[1] Anju Malhotra, Sidney Schuler and Carol Boender, "Measuring women's empowerment as a variable in international development", background paper prepared for the World Bank Workshop on Poverty and Gender: New Perspectives (June 2002).

[2] UN System Task Team on the Post-2015 UN Development Agenda, *Realizing the Future We Want for All: Report to the Secretary-General* (New York, 2012).

enterprises are growing at an annual rate of 10 per cent in Malaysia.[3] In 2006 in the Philippines, 69 per cent of nascent business owners and 51 per cent of new business owners were female, compared with 34 per cent of established business owners.[4] In spite of this progress, women-owned enterprises are consistently smaller and concentrated in less profitable sectors than men-owned equivalents.[5] Although reasons for this vary, women's lower education levels, risk-averse investment behaviour, lower access to loans and collateral, and childcare and household responsibilities are contributing factors.

Women's wages continue to remain lower than men's.

Figure E.1-1
Gender wage gap for selected Asian and Pacific countries and areas, 2010

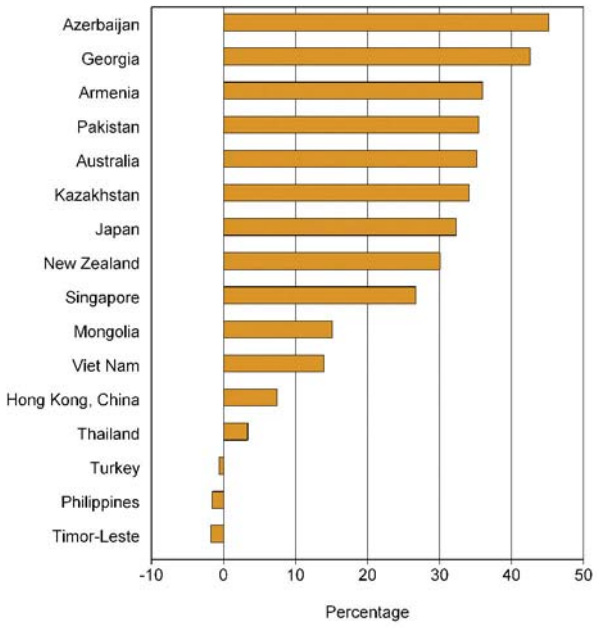


Figure E.1-1 shows that, across the region, women continue to earn less than men. Factors contributing to the wage gap reflect: (a) women's interrupted work lives, periods of part-time work, or total hours worked for those in full-time employment; (b) men and women's choices and capabilities, or a lack thereof, due to structural gender imbalances, in terms of accessing education and other forms of support that provide them with the skills required to achieve desired work outcomes; (c) occupation segregation, that is, the tendency for women to be underrepresented in managerial or high-paying professions; (d) gendered discriminatory practices and barriers (for instance in recruitment procedures and selection criteria, promotion, training and skill development) that hamper women's advancement; and (e) women's lower remuneration for the same or comparable tasks within and across occupational groups and industries. Measuring the impact of these determinants on the gender wage gap continues to be challenging. In Australia, which has a persistently high gender wage gap, research identified that "simply being a woman" accounted for a 60 per cent difference between men's and women's incomes. Other causal factors were industrial segregation (25 per cent), underrepresentation of women with vocational qualifications (5 per cent) and underrepresentation of women in large firms (3 per cent).[6]

In terms of regional trajectories, some countries of the Asian and Pacific region have experienced a considerable reduction in the gender wage gap, while others have witnessed an increase. It is important to note that a narrowing of the gender wage gap may be due less to a rise in women's wages than to a decrease in men's wages, especially in the light of the recent economic crisis.[7] Furthermore, due to the underlying complexities contributing to the gender wage gap, the assumption that the gap would narrow and be eliminated with increased economic and social development does not hold true.[8] Labour markets do not operate gender neutrally, that is,

[3] Asia-Pacific Economic Cooperation, *Access to Trade and Growth of Women's SMEs in APEC Developing Economies* (2013), p. 7.

[4] Imelda Madarang and Cielito Habito, *Global Entrepreneurship Monitor: Philippine Report 2006-2007* (Philippine Center for Entrepreneurship, 2007), p. 20.

[5] Asia-Pacific Economic Cooperation, *Access to Trade and Growth of Women's SMEs in APEC Developing Economies* (2013).

[6] R. Cassells and others, *The Impact of a Sustained Gender Wage Gap on the Australian Economy: Report to the Office for Women,* Department of Families, Community Services, Housing and Indigenous Affairs (Australia, 2009), pp. v and 25.

[7] International Labour Organization, *Global Wage Report 2012/13: Wages and Equitable Growth* (Geneva, 2013), pp. 4-7.

[8] World Bank, *Toward Gender Equality in East Asia and the Pacific: A Companion to the World Development Report – World Bank East Asia and Pacific Regional Report* (Washington, D.C., 2012), p. 110.

Box E.1-1
Gender wage gap widens with age and motherhood

A study carried out by the Organisation for Economic Co-operation and Development (OECD) found that the gender wage gap increased with age. Thus, the gender gap in mean earnings for full-time employees in the Republic of Korea for 25-29 years of age was 10 per cent compared with 47 per cent for employees aged 40-44 years. Similarly, the 1970-1974 cohort had an 11 per cent gap in 1998, which had increased to 33 per cent for the same cohort by 2008. The study also measured the cost of motherhood, noting that the gender gap in median earnings varied starkly depending on the presence of at least one child. Thus, for Korean women without children, the gender wage gap stood at 13 per cent compared with 46 per cent for women with children. For Japan, the figures were 23.5 per cent and 60.9 per cent respectively, and for Australia -3 per cent and 19 per cent, respectively.

Source: Organisation for Economic Co-operation and Development, *Closing the Gender Gap: Act Now* (2012).

Box E.1-2
Women's access to and control over land

Women's economic empowerment is not only about generating an adequate and fair wage – it is equally important that women control income, assets and other resources. For instance, in 2010, in terms of land ownership, individual land titles held by women accounted for about 5 per cent of land ownership in Bangladesh, 13 per cent in Kyrgyzstan and 28 per cent in Thailand.[a] As part of the land reform process that was started in Viet Nam in 1998, when collectively held long-term use rights to land were reconfigured as individually held long-term use rights, women received only 10 per cent of the redistributed land rights, due to the low number of women registered as heads of households.[b] An additional subset of women in the region are registered as secondary land right holders through male family members, leaving them in precarious situations in cases of violence and abuse by male family members, divorce, widowhood or male family members' migration.

In Pacific island developing economies, almost all land is customarily owned and transferred through traditional cultural systems, whereby women and men access land through customary arrangements and not through purchase. This is the case for over 90 per cent of the land in the Cook Islands, the Marshall Islands, Nauru, Niue, Papua New Guinea, Tuvalu and Vanuatu. Women do not have a right to own land independent of a male relative, but only as an extension of socially constructed gendered roles as daughters, wives or mothers. This increases women's economic dependence on men, discourages them from investing in land as a productive resource beyond subsistence farming, and denies women decision-making rights based on informed consent over land usage, investments and formal agreements on land rights.[c]

[a] United Nations Food and Agriculture Organization, "Gender and land rights: understanding complexities; adjusting policies", *Economic and Social Perspectives Policy Brief*, No. 8 (March 2010).
[b] Ibid.
[c] Australian Agency for International Development, *Making Land Work: Volume One – Reconciling Customary Land and Development in the Pacific* (2008), pp. 4, 81-86.

with equal opportunities and equitable outcomes for men and women. Rather, they are shaped by prevailing social norms and customary divisions of work.

Women still bear the burden of unremunerated productive work.

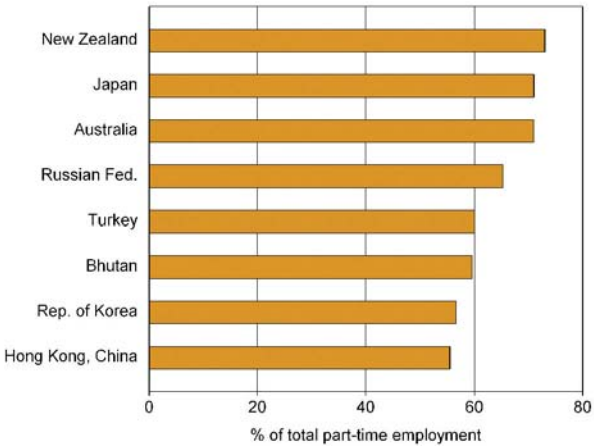
Another barrier to women's economic empowerment is their time spent on unremunerated productive work. Figures indicate that women continue to shoulder the major share of unremunerated household management and caregiving responsibilities. For instance, in Pakistan, women spend 5.5 hours on housework and 1.2 hours on childcare daily, while men spend 2.5 hours on housework and 0.2 hours on childcare. In Cambodia, women spend 4.4 hours on housework and 0.9 hours on childcare,

whereas men spend 3.3 hours and 0.1 hours, respectively.[9] In Japan, women spend 3 hours and 19 minutes more than their male counterparts on unpaid work, while this figure rises to 4 hours and 26 minutes for India.[10] OECD estimates based on national time-use surveys show that women spend between 100 and 200 minutes more per day on unremunerated productive work than men in Australia, China, New Zealand and the Republic of Korea, while Turkish women spend on average 4.3 hours more each day on unremunerated productive work than men.[11] Rapidly ageing populations in the Asian and Pacific region add to women's already stretched care burden.

Women's unremunerated productive work serves as an unaccounted for and often unrecognized contribution to social protection, and acts as a subsidy to State provisioning by bridging infrastructural gaps in social protection and insurance coverage.[12] In times of economic hardship, women increase their domestic activities to compensate for falling household income or increased expenditures. Women's interrupted and at times precarious links to income-generating work, especially formal decent employment, result in women's lower access to contributory social security measures, such as old age pensions, unemployment benefits and disability allowances.[13]

More data are therefore needed to understand women's and men's differentiated use of time over the course of their life cycles, as well as possible public measures that could ease women's time crunch. Otherwise, women's unremunerated productive work will continue to limit their full economic participation, which results in their greater uptake of part-time or seasonal work. Currently, national household or labour force surveys show women's share of part-time employment out of total part-time employment to be between 55.5 per cent in Hong Kong, China and 73 per cent in New Zealand.

Figure E.1-2
Women's share of part-time employment, selected Asian and Pacific countries, 2011



Source: United Nations Statistics Division: Statistics and Indicators on Women and men, Table 5b available at http://unstats.un.org/unsd/demographic/products/indwm/

Women continue to be under-represented at every level of political participation and decision-making.

Women's participation in the political arena and in decision-making is of key importance as it allows women to influence the social, economic and political conditions that affect their daily lives. The numerical presence of women across a broad range of decision-making forums alone provides only a proxy indicator of the actual influence of female decision makers. Their influence depends on whether and how they represent issues of strategic importance to women. Nevertheless, evidence indicates that the presence of more women in parliaments and civil service and on company boards brings results above those that could have been achieved had women not been represented.[14]

[9] World Bank, *World Development Report 2012: Gender Equality and Development* (2012), p. 19.

[10] R. Antonopolous, "The unpaid care work – paid work connection", ILO Working Paper, No. 86 (International Labour Organization, 2009), p. 3.

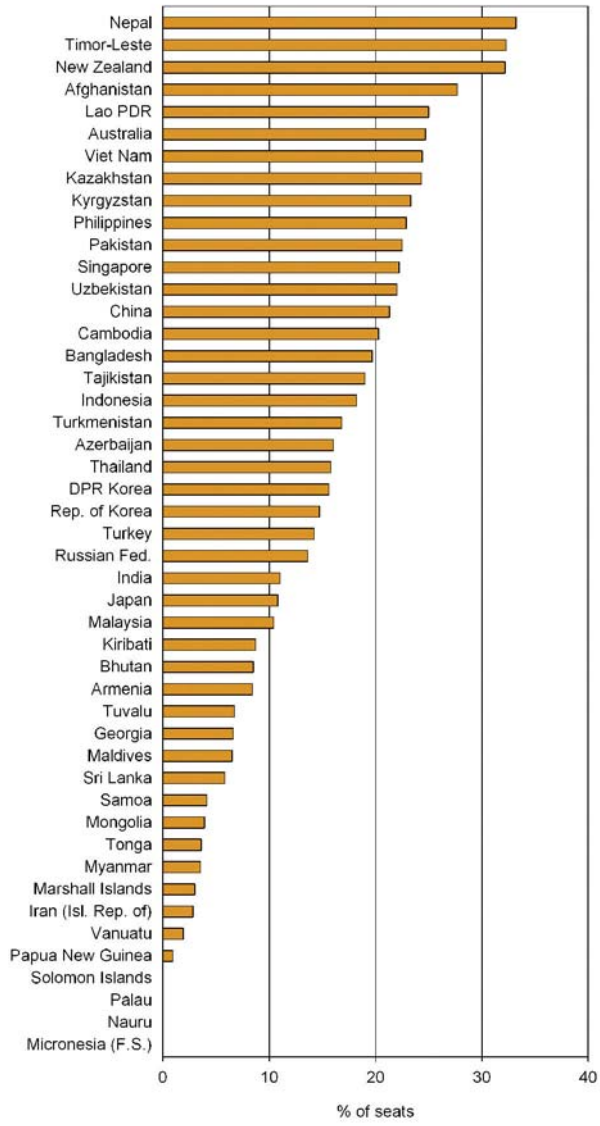
[11] V. Miranda, "Cooking, caring and volunteering: unpaid work around the world", OECD Social, Employment and Migration Working Paper, No. 116 (Organisation for Economic Co-operation and Development, 2011), pp. 11 and 12.

[12] R. Antonopolous, "The unpaid care work", pp. 8 and 9.

[13] ESCAP, *The Promise of Protection: Social Protection and Development in Asia and the Pacific* (United Nations publication, Sales No. E.11.II.F.5), pp. 12-15.

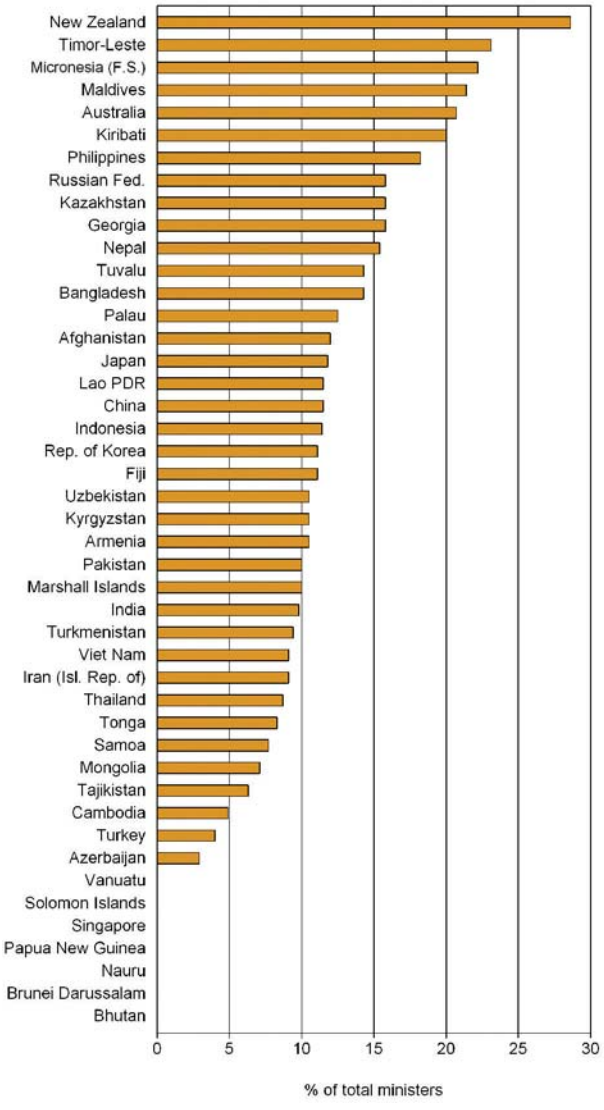
[14] R. Chattopadhyay and E. Duflo, "Women as policy makers: evidence from a randomized policy experiment in India", *Econometrica*, vol. 72, No. 5 (September 2004), pp. 1409-1443; and Grant Thornton International, *Women in Senior Management: Setting the Stage for Growth – Grant Thornton International Business Report 2013* (2013), p. 4.

Figure E.1-3
Women's participation in national parliaments, Asia and the Pacific, 2012



At the Fourth World Conference on Women, Member States agreed to set "specific targets and implementing measures to substantially increase the number of women with a view to achieving equal representation of women and men, if necessary through positive action, in all governmental and public administration positions."[15] Currently, only three countries in the Asian and Pacific region have attained the critical mass of 30 per cent female representation, which by international consensus is considered significant to ensure meaningful change. These are Nepal (33.2 per cent), Timor-Leste (32.3 per cent) and New Zealand (32.2 per cent). Some countries, such as Afghanistan (27.7 per cent), the Lao People's Democratic Republic (25.0 per cent), Australia (24.7 per cent), Viet Nam (24.4 per cent) and Kazakhstan (24.3 per cent), are approaching the target. This is partly a result of quotas and reserved seats for women in parliament. Women's representation in the Pacific lags significantly behind both other Asian and Pacific subregions and the world average. Among the 13 countries in the Pacific for which data

Figure E.1-4
Women's share in ministerial positions, Asia and the Pacific (reflecting appointments up to 1 January 2012)



[15] *Report of the Fourth World Conference on Women*, Beijing, 4-15 September 1995 (United Nations publication, Sales No. 96.IV.13), p. 81.

were available, 9 have either no women or less than 5 per cent of seats held by women in the national parliament.

With respect to women in ministerial level positions, New Zealand is ranked highest in the region, with 28.6 per cent female ministers. It is followed by Timor-Leste (23.1 per cent), the Federated States of Micronesia (22.2 per cent), Maldives (21.4 per cent), Australia (20.7 per cent), Kiribati (20.0 per cent), the Philippines (18.2 per cent), and Georgia, Kazakhstan and the Russian Federation with 15.8 per cent each. At the low end are Cambodia (4.9 per cent), Turkey (4.0 per cent) and Azerbaijan (2.9 per cent). Seven Asian and Pacific countries have no female ministers, namely Bhutan, Brunei Darussalam, Nauru, Papua New Guinea, Singapore, Solomon Islands and Vanuatu.[16]

Box E.1-3
Private sector board and managerial level positions held by women

Research on the largest 100 domestic companies by market capitalization in Australia; China; Hong Kong, China; India; Malaysia; New Zealand and Singapore found that only Australia had more than 10 per cent female board directors, with 11.2 per cent. Hong Kong, China ranked second (8.6 per cent), followed by China (8.1 per cent), Malaysia (7.8 per cent), New Zealand (7.5 per cent), Singapore (6.4 per cent) and India (4.7 per cent)[a] Moreover, half of the 700 boards examined had no female directors at all.[b] A similar study found that Japanese and Korean boards had 2 per cent and 1 per cent women's representation, respectively.[c]

Countries in the Asian and Pacific region hold 10 of the top 20 positions in global rankings for the highest percentage of women in senior management, with significant variations across the region. China is the global leader with a 51 per cent share of managerial level positions held by women, followed by the Philippines and Georgia with 37 per cent, Thailand and Viet Nam with 36 per cent and 33 per cent, respectively, and the Russian Federation with 31 per cent. At the lower end are Australia with 22 per cent of managerial level positions held by women, India with 19 per cent and Japan with 7 per cent.[d]

[a] A. Yi, "Mind the gap: half of Asia's boards have no women, a risky position for governance and growth" (Korn/Ferry Institute, 2011), p. 2.
[b] Ibid., p. 3.
[c] McKinsey and Company, "Women matter: an Asian perspective – harnessing female talent to raise corporate performance" (June 2012), p. 2.
[d] Grant Thornton International, Women in Senior Management: Setting the Stage for Growth – Grant Thornton International Business Report 2013 (2013), pp. 3 and 7.

Violence against women (VAW), a serious human rights violation affecting every country, culture and context across the Asian and Pacific region, impedes women's empowerment.

VAW specifically refers to all forms of violence that primarily, and most of the time exclusively, targets women because of their gender.[17] In addition to intimate and non-intimate physical, sexual and psychological abuse, other forms of VAW, such as human trafficking, early and forced marriage, son preference, acid attacks, "honour crimes," and dowry deaths, are prominent in some contexts in Asia and the Pacific. VAW in conflict and post-conflict settings, in particular sexual violence, is an ongoing atrocity.

A variety of indicators and data sources have been used to measure VAW. Administrative records, such as police, court and health sector records, are not a sufficient source of statistics for measurement. Reasons for this include both low reporting rates and unreliable public record keeping. If at all, formal records can provide only estimates of the number of survivors who have sought out specific services, not the prevalence or incidence rate of violence.

[16] United Nations Entity for Gender Equality and the Empowerment of Women, and Inter-Parliamentary Union, *Women in Politics: 2012.* Available from www.ipu.org/pdf/publications/wmnmap12_en.pdf.
[17] Forms of violence against women include "any act of gender-based violence that results in, or is likely to result in, physical, sexual or psychological harm or suffering to women, including threats of such acts, coercion or arbitrary deprivation of liberty, whether occurring in public or private life." See *Report of the Fourth World Conference on Women, Beijing, 4-15 September 1995* (United Nations publication, Sales No. 96.IV.13).

Efforts are underway to produce reliable and comparable global statistical indicators for measuring VAW. In its resolution 61/143 of 19 December 2006, the General Assembly of the United Nations requested the Statistical Commission to develop methodologies of data collection and a core set of international indicators to support Member States in assessing the scope, prevalence and incidence of VAW. Attention to ethical and safety considerations is required when generating data on VAW as the process can potentially identify and expose both victims as well as perpetrators to their families and communities. To this date, a set of guidelines for producing statistics on VAW and nine core indicators have been developed.

Many studies measuring the prevalence of VAW focus on domestic violence, or intimate partner violence, as it is the most pervasive form of VAW.[18] Women are typically the main respondents to these types of surveys. The data generated indicate consistently high levels of VAW, ranging from about 20 per cent to 60 per cent of ever-partnered or ever-married women in both rural and urban settings across the Asian and Pacific region.[19]

To understand the perpetration of VAW, more studies have been conducted recently with men as the main respondents. A study in four districts in Sri Lanka found that, of ever-partnered men, 36 per cent reported committing physical or sexual violence against an intimate partner in their lifetime, 40.7 per cent admitted to having emotionally abused their intimate partners and 18 per cent admitted to having committed an economically abusive act against their intimate partners.[20] In Bangladesh, a survey in one urban area and one rural area showed that 55 per cent of urban and 57 per cent rural male respondents reported to having used physical or sexual violence against an intimate partner, 52 per cent of urban and 46 per cent of rural male respondents admitted to having committed emotional abuse against an intimate partner, and 16 per cent of urban and 18 per cent of rural male respondents admitted to having perpetrated economic violence against an intimate partner.[21]

Box E.1-4
Costing of violence against women

Beyond the debilitating physical and emotional toll on women, their families and communities, VAW has an economic price tag. The full cost is immense, in terms of costs to the health system, the justice system and other service providers; lost wages and productivity of survivors as well as perpetrators; and the intergenerational cost of children missing out on education and other opportunities. A costing study in Australia on domestic violence estimated a total annual cost of $A 8.1 billion for 2002-2003, and a total lifetime cost of $A 224,470 per survivor of domestic violence.[a] Another study estimated the cost of domestic violence in Viet Nam to be nearly 1.4 per cent of GDP for 2010 as a result of out-of-pocket expenditures and lost earnings. The study also found that women experiencing violence earned 35 per cent less than those not abused, and the overall lost productivity was estimated at 1.8 per cent of GDP in 2010.[b]

[a] Access Economics, *The Cost of Domestic Violence to the Australian Economy: Part I* (Australia, 2004), pp. vii and viii.
[b] Nata Duvvury, Nguyen Huu Minh and Patricia Carney, *Estimating the Cost of Domestic Violence against Women in Viet Nam* (UN-Women, 2012).

[18] United Nations Secretary-General's Campaign to End Violence against Women, "Violence against Women" (November 2009). Available from www.un.org/en/events/endviolenceday/pdf/UNiTE_TheSituation_EN.pdf.
[19] Claudia Garcia-Moreno and others, *WHO Multi-country Study on Women's Health and Domestic Violence against Women: Initial Results on Prevalence, Health Outcomes and Women's Responses* (World Health Organization, 2005); Viet Nam and United Nations, *Keeping Silent is Dying: Results from the National Study on Domestic Violence against Women in Viet Nam* (2010); and Maldives, Ministry of Gender and Family, *The Maldives Study on Women's Health and Life Experiences: Initial Results on Prevalence, Health Outcomes and Women's Responses to Violence* (2006).
[20] N. de Mel, P. Peiris and S. Gomez, *Broadening Gender: Why Masculinities Matter – Attitudes, Practices and Gender-based Violence in Four Districts in Sri Lanka* (CARE International Sri Lanka, 2013), pp. 36-38.
[21] R.T. Naved and others, *Men's Attitudes and Practices Regarding Gender and Violence against Women in Bangladesh: Preliminary Findings* (icddr,b, 2011), pp. 17-18.

Further reading

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Technical notes

Women's empowerment defined

The United Nations Population Division identifies five components of women's empowerment: women's sense of self-worth; the right of choice; the right of access to opportunities and resources; the right to have the power to control their own lives (in and outside the home); and the ability to influence the direction of social change to create a more just social and economic order, nationally and internationally. Women's empowerment is illustrated to some degree through the indicators in the present topic, but it is also linked to many indicators in the *Yearbook*, such as those in the sections on health, education and knowledge, poverty and insecurity, and economy.

Employment-sex ratio: overall and non-agricultural employment (employed females per 100 employed males)

The ratio of employed women to employed men. The overall ratio includes all employment sectors; non-agricultural employment includes all sectors other than agriculture. **Indicator calculations:** Employed females divided by employed males. **Aggregate calculations:** The Employment Trends Unit of the International Labour Organization (ILO) calculates aggregate employed women and employed men for each economic, regional and subregional group. The aggregate sex ratio is calculated as aggregate employed women to aggregate employed men.

Employer-sex ratio (female employers per 100 male employers)

The ratio of female employers to male employers. **Indicator calculations:** Female employers divided by male employers. **Aggregate calculations:** The ILO Employment Trends Unit calculates aggregate female employers and male employers for each economic, regional and subregional group. The aggregate sex ratio is calculated as aggregate female employers to aggregate male employers.

Agriculture, industry and services employment: female and male (percentage of employed females or males)

Agriculture: Employment in agriculture, hunting, forestry and fishing in total employment. **Industry:** Employment in mining and quarrying, manufacturing, construction, electricity and gas, and water in total employment. **Services:** Employment in wholesale

and retail trade, restaurants and hotels, transport, storage and communications, finance, insurance, real estate and business services, and community, social and personal services, in total employment. **Aggregate calculations:** ILO Employment Trends Unit.

Employees, employers, own account workers and contributing family workers: female and male (percentage of employed females or males)

Employees: Those workers who hold the type of jobs defined as "paid employment jobs," where the incumbents hold explicit (written or oral) or implicit employment contracts that give them a basic remuneration that is not directly dependent upon the revenue of the unit for which they work. **Employers:** Those workers working on their own account or with one or a few partners, hold the type of jobs defined as "self-employment jobs" (that is, jobs where the remuneration is directly dependent upon the profits derived from the goods and services produced), and, in this capacity, have engaged on a continuous basis one or more persons to work for them as employee(s). **Own account workers:** Those workers who, working on their own account or with one or more partners, hold the type of jobs defined as "self-employment jobs", and have not engaged on a continuous basis any employees to work for them. **Contributing family workers:** Those workers who hold "self-employment jobs" as own account workers in a market-oriented establishment operated by a relative living in the same household. **Aggregate calculations:** ILO Employment Trends Unit.

Gender wage gap (percentage)

The gender wage gap is the difference between gross average nominal monthly wages of male and those of female employees expressed as a percentage of gross average nominal monthly wages of male employees. **Indicator calculations:** Gender pay gap (%) = 100*(Em – Ew)/Em where Em is the gross average nominal monthly wages of men in any given population group and Ew is the gross average nominal monthly wages of women.

Women in parliament: single or lower house, senate or upper house (percentage of seats, number of seats)

Seats are usually won by candidates in parliamentary elections. Seats may also be filled by nomination, appointment, indirect election, rotation of members and by-election. Women in parliament figures are expressed as a proportion of all occupied seats in a single or lower house of the national parliaments and of the senate or upper chamber or house of bicameral parliaments. **Lower or single house:** Women in the single chamber of unicameral parliaments and lower chamber in bicameral parliaments. **Senate or upper house:** Women members in the senate or upper chambers of bicameral parliaments.

Women's access to bank loans, land and property other than land (index)

Bank loans: Women's access to bank loans is assessed at between 0=full and 1=impossible. **Land**: Women's access to land ownership is assessed at between 0=full and 1=impossible. **Property other than land:** Women's rights to own property other than land, especially immovable property (that is, buildings, dwellings or other property), is assessed at between 0=full and 1=no.

Legislation on VAW (index)

Reflects the existence of laws against (a) domestic violence, (b) sexual assault or rape, and (c) sexual harassment. The index is scored as follows: 0 if specific legislation is in place; 0.25 if legislation is in place but of a general nature; 0.50 if specific legislation is being planned, drafted or reviewed; 0.75 if planned legislation is of a general nature; 1.00 if there is no legislation concerning VAW. Data are averaged across the three legal categories.

Sources

Source of employment data: ILO, *Key Indicators of the Labour Market, 7th ed.* (available from www.ilo.org/empelm/pubs/WCMS_114060/lang—en/index.htm). The ILO Employment Trends Unit has designed and maintains three econometric models that are used in estimating

labour market indicators of the countries and years for which no real data exist. **Employment ratios and employment by sector**: Information was derived from a variety of sources, including household or labour force surveys, official estimates and censuses provided by countries to ILO. In a very few cases, information was derived from insurance records and establishment surveys. **Ratio of employers and employment by status:** Most of the information for this indicator was gathered from international repositories of labour market data, including the ILO Department of Statistics Yearbook of Labour Statistics (LABORSTA) database, Eurostat, and the Latin America and Caribbean Labour Information System (QUIPUSTAT), with additions from websites of national statistical offices. **Data obtained:** 18 April 2013.

Source of gender wage gap: ILO, Global Wage Database (available from www.ilo.org/travail/areasofwork/WCMS_142568/lang—en/index.htm). **Data obtained:** 1 May 2013.

Source of women in parliament: United Nations, Millennium Indicators Database; Inter-Parliamentary Union, Women in National Parliaments (available from www.ipu.org/wmn-e/world.htm). National parliaments provide the Inter-Parliamentary Union with official statistics. Data are not adjusted for international comparability. **Data obtained:** 2 August 2012.

Source of legislation on VAW, and women's access to loans and property: OECD Development Centre, Gender, Institutions and Development Database. Based on two main premises that guarantee comparability across countries and ensure the highest level of quality. Regional experts estimate data. All low-income and lower-middle-income economies with a population exceeding 1 million inhabitants were selected. A university team of researchers led the external review and harmonization processes. Scoring of social institutions variables is finalized by the OECD Development Centre. **Data obtained:** 1 August 2012.

E.1.1 Women's participation in the labour market

	Employment sex ratio						Employers sex ratio			Gender wage gap		
	Overall employment			Non-agricultural								
	Employed females per 100 employed males			Employed females per 100 employed males			Female employers per 100 male employers			Percentage		
	1991	2000	2012	1991	2000	2012	1991	2000	2010	1995	2000	2010
East and North-East Asia	**80.6**	**81.4**	**80.7**	**56.3**	**63.4**	**74.9**	**16.8**	**27.2**	**42.5**			
China	82.3	82.9	81.4									
DPR Korea	92.9	91.8	92.3									
Hong Kong, China	59.5	73.2	86.8	60.1	73.0			16.8	24.1			7.5
Japan	69.0	68.8	73.2	67.4	68.4		22.1	22.1			36.5	32.3
Macao, China	69.2	87.0	96.1	69.5	89.3			13.8	29.3			
Mongolia	86.1	87.7	86.7		101.8			38.9			7.6	15.1
Republic of Korea	65.8	69.0	71.1	65.1	68.6			22.0		40.4	37.5	
South-East Asia	**73.3**	**72.6**	**73.3**	**68.5**	**69.2**	**75.3**	**16.2**	**20.4**	**25.8**			
Brunei Darussalam	48.6	69.0	72.6	47.9			18.1					
Cambodia	109.8	104.7	98.5		98.1			11.7				
Indonesia	61.1	59.9	60.7	60.3	59.4							
Lao PDR	99.8	100.2	98.8									
Malaysia	51.8	53.1	56.1	49.6	57.6		25.8	11.1	18.1			
Myanmar	93.6	93.3	95.2								-53.9	
Philippines	55.6	59.8	63.7	86.5	82.6			24.9				-1.5
Singapore	63.7	68.1	73.2	66.3			18.6		33.8	26.5	28.1	26.7
Thailand	87.7	85.6	84.7	82.8	85.4		22.6	30.3	33.5			3.4
Timor-Leste	48.6	47.8	49.8									-1.7
Viet Nam	97.8	96.5	93.6		93.2			55.4				13.9
South and South-West Asia	**38.2**	**38.5**	**36.5**	**20.0**	**20.5**	**21.3**	**9.2**	**12.4**	**12.5**			
Afghanistan	16.4	14.7	17.6									
Bangladesh	65.4	59.9	66.6	17.1	30.6			12.8				
Bhutan	57.9	64.7	72.5						100.0			
India	38.0	38.7	33.7		22.0			14.1	11.4			
Iran (Islamic Rep. of)	11.1	17.1	20.3									
Maldives	22.7	43.6	61.4		44.0			12.5				
Nepal	89.6	96.8	97.5	25.8								
Pakistan	13.2	16.1	25.3	8.9	7.9			2.1		22.6	39.5	35.4
Sri Lanka	40.0	46.4	46.0					12.5			12.2	
Turkey	44.0	37.1	41.0	15.1	19.9			4.0	7.4			-0.6
North and Central Asia	**89.7**	**89.9**	**90.7**	**95.2**	**93.9**	**90.8**	**16.3**	**33.6**	**50.8**			
Armenia	77.9	84.6	79.3								48.1	35.9
Azerbaijan	83.5	87.4	94.5		77.3						54.2	45.2
Georgia	87.7	86.6	90.5		75.1			13.6			45.7	42.6
Kazakhstan	85.7	91.4	95.4						61.4			34.1
Kyrgyzstan	83.2	79.5	73.9		74.7							
Russian Federation	94.0	94.4	96.3		99.9			40.3				
Tajikistan	80.0	79.1	83.3									
Turkmenistan	66.6	68.8	64.8									
Uzbekistan	67.2	68.5	66.1									
Pacific	**74.2**	**80.1**	**84.1**	**72.9**	**78.9**	**83.3**	**42.3**	**45.7**	**46.1**			
American Samoa	47.0											
Australia	71.6	78.3	83.3	74.6	81.0		47.7	50.0		34.4	33.7	35.2
Cook Islands	17.6											
Fiji	34.8	47.2	47.1									
French Polynesia	198.4											
Guam	130.5											
Kiribati	71.0				63.3							
Marshall Islands	47.3											
Micronesia (F.S.)	96.3											
Nauru	9.2											
New Caledonia	168.5											
New Zealand	78.1	82.7	87.8	84.2	88.1		37.0	41.1			33.2	30.1
Niue	2.3											
Northern Mariana Islands	44.0											
Palau	15.1											
Papua New Guinea	92.6	93.7	93.1									
Samoa	162.9											
Solomon Islands	64.2	63.0	62.8									
Tonga	95.2											
Tuvalu	9.0											
Vanuatu	146.6											
Asia and the Pacific	**64.7**	**64.1**	**62.0**	**49.1**	**51.9**	**56.2**	**14.3**	**22.5**	**30.0**			
Developed countries	69.4	70.2	75.1	68.6	70.0	75.8	25.9	27.3	25.0			
Developing countries	64.5	63.8	61.5	47.2	50.5	55.1	13.5	22.1	30.3			
LLDC	73.1	72.8	72.4	63.0	58.8	59.2	41.0	55.5	60.0			
LDC	72.8	69.2	72.7	26.6	38.0	29.0	41.1	50.8	65.4			
ASEAN	73.4	72.7	73.3	68.5	69.2	75.3	16.2	20.4	25.8			
ECO	30.7	30.4	35.0	21.9	22.1	25.3	3.6	4.6	7.8			
SAARC	39.0	39.3	37.0	21.0	20.9	21.0	11.6	17.0	15.1			
Central Asia	78.7	79.8	79.7	76.6	73.1	74.2	22.3	27.2	35.1			
Pacific island dev. econ.												
Low income econ.	75.0	71.3	74.1	44.1	49.5	37.9	42.7	49.5	65.6			
Lower middle income econ.	43.6	44.4	41.9	32.5	32.4	34.8	11.7	15.8	16.5			
Upper middle income econ.	80.2	80.1	78.8	56.8	63.0	73.0	12.9	24.5	38.5			
High income econ.	68.3	70.0	74.5	67.1	69.5	75.0	22.8	24.6	27.7			
Africa	**65.2**	**69.7**	**72.4**	**46.7**	**56.7**	**64.4**	**9.0**	**14.9**	**15.9**			
Europe	**73.3**	**77.8**	**83.9**	**72.2**	**78.5**	**85.5**	**28.6**	**30.8**	**32.7**			
Latin America and Carib.	**50.6**	**59.8**	**69.2**	**61.4**	**69.9**	**79.9**	**14.9**	**23.9**	**30.6**			
North America	**81.7**	**84.4**	**86.6**	**84.2**	**86.3**	**88.0**	**29.9**	**29.8**	**29.3**			
World	**64.9**	**66.0**	**65.9**	**56.2**	**59.8**	**63.6**	**17.4**	**23.4**	**27.5**			

E.1.2 Female and male employment by sector

	Agriculture employment				Industry employment				Services employment			
	Female		Male		Female		Male		Female		Male	
	% of employed females		% of employed males		% of employed females		% of employed males		% of employed females		% of employed males	
	1991	2010	1991	2010	1991	2010	1991	2010	1991	2010	1991	2010
East and North-East Asia	**62.0**	**37.4**	**45.5**	**29.5**	**20.2**	**25.0**	**26.8**	**32.0**	**17.8**	**37.6**	**27.7**	**38.6**
China												
DPR Korea												
Hong Kong, China	0.6		0.9		29.5		38.1		69.9		61.0	
Japan	7.8	3.7	6.0	3.8	27.6	14.7	39.1	33.1	64.2	80.4	54.4	61.9
Macao, China	0.1		0.1		50.5		36.9		49.2		63.6	
Mongolia												
Republic of Korea	18.5	6.9	14.9	6.4	29.8	12.5	40.1	20.2	51.7	80.6	45.0	73.4
South-East Asia	**60.1**	**42.3**	**57.3**	**40.9**	**11.5**	**15.3**	**15.2**	**21.1**	**28.4**	**42.4**	**27.4**	**38.0**
Brunei Darussalam	1.6		2.2		8.9		31.4		89.5		66.3	
Cambodia		55.4		52.9		15.5		17.0		29.1		30.1
Indonesia	54.5		53.5		12.8		15.6		32.4		30.7	
Lao PDR												
Malaysia	22.2	8.5	26.8	16.0	28.1	21.0	25.6	31.3	44.8	70.5	43.2	52.8
Myanmar												
Philippines	30.1		53.9		13.9		17.3		56.1		28.7	
Singapore	0.1		0.4		32.9		36.7		67.0		62.9	
Thailand	60.8	36.0	59.9	40.1	13.7	18.2	16.9	22.7	25.4	45.7	23.2	37.1
Timor-Leste												
Viet Nam												
South and South-West Asia	**76.0**	**67.3**	**54.2**	**42.9**	**12.5**	**15.2**	**18.0**	**23.4**	**11.5**	**17.5**	**27.8**	**33.7**
Afghanistan												
Bangladesh	84.9		54.4		8.8		15.7		2.1		25.3	
Bhutan		65.3		54.0		6.7		6.8		28.0		39.2
India		65.3		46.1		17.8		24.0		17.0		29.9
Iran (Islamic Rep. of)												
Maldives												
Nepal	90.5		74.9		1.3		3.7		7.5		19.6	
Pakistan	66.0		44.8		14.7		20.6		19.3		34.6	
Sri Lanka		37.8		30.2		24.8		23.9		27.2		28.3
Turkey	77.4	39.3	35.0	17.5	8.3	15.9	25.3	30.3	14.4	44.7	39.7	52.2
North and Central Asia	**18.6**	**17.6**	**23.3**	**20.9**	**25.6**	**18.3**	**40.5**	**29.7**	**55.8**	**64.1**	**36.2**	**49.5**
Armenia												
Azerbaijan		44.5		32.3		6.1		20.9		49.4		46.8
Georgia												
Kazakhstan												
Kyrgyzstan												
Russian Federation												
Tajikistan												
Turkmenistan												
Uzbekistan												
Pacific	**18.7**	**17.9**	**17.2**	**16.5**	**10.8**	**8.0**	**27.8**	**26.1**	**70.5**	**74.1**	**55.0**	**57.4**
American Samoa												
Australia	3.9		6.6		12.3		32.2		83.8		61.2	
Cook Islands												
Fiji												
French Polynesia												
Guam												
Kiribati												
Marshall Islands												
Micronesia (F.S.)												
Nauru												
New Caledonia												
New Zealand	7.8		13.2		13.7		31.6		78.4		54.8	
Niue												
Northern Mariana Islands												
Palau												
Papua New Guinea												
Samoa												
Solomon Islands												
Tonga												
Tuvalu												
Vanuatu												
Asia and the Pacific	**61.1**	**43.7**	**48.8**	**36.0**	**17.6**	**20.5**	**22.9**	**26.8**	**21.2**	**35.8**	**28.3**	**37.1**
Developed countries	7.4	3.7	6.3	4.3	25.7	14.1	38.4	34.1	66.9	82.2	55.4	61.5
Developing countries	64.0	45.6	50.9	37.2	17.2	20.8	22.1	26.6	18.8	33.7	27.0	36.2
LLDC	58.5	56.8	51.9	46.4	9.3	9.1	19.4	19.9	32.2	34.1	28.7	33.7
LDC	85.6	77.7	60.6	46.9	7.3	7.5	13.8	15.9	7.2	14.8	25.6	37.2
ASEAN	60.1	42.2	57.3	40.9	11.5	15.3	15.2	21.1	28.4	42.4	27.4	38.0
ECO	56.9	51.1	39.6	31.5	11.7	13.5	23.3	24.7	31.5	35.3	37.1	43.8
SAARC	76.3	69.3	56.1	44.9	12.6	15.0	17.3	22.7	11.0	15.7	26.6	32.4
Central Asia	42.0	40.5	40.4	34.7	11.5	10.4	24.9	25.6	46.5	49.0	34.8	39.7
Pacific island dev. econ.												
Low income econ.	73.1	69.8	54.3	43.3	19.4	14.8	19.5	19.1	7.5	15.4	26.2	37.6
Lower middle income econ.	67.4	55.7	56.1	44.1	12.6	16.4	17.0	23.0	20.0	27.9	26.9	32.9
Upper middle income econ.	62.8	37.9	47.5	30.5	18.6	24.2	26.1	31.1	18.6	37.9	26.4	38.3
High income econ.	9.3	4.2	7.7	4.6	26.8	13.8	38.7	33.0	64.0	82.0	53.6	62.5
Africa	**69.0**	**60.2**	**56.7**	**53.4**	**6.6**	**7.1**	**13.4**	**14.2**	**24.5**	**32.7**	**29.9**	**32.4**
Europe	**14.6**	**5.7**	**13.2**	**7.5**	**21.0**	**13.1**	**41.2**	**35.5**	**64.4**	**81.2**	**45.6**	**57.0**
Latin America and Carib.	**13.4**	**8.9**	**28.6**	**21.1**	**15.4**	**13.2**	**26.9**	**27.7**	**71.2**	**77.9**	**44.4**	**51.2**
North America	**1.5**	**0.9**	**4.4**	**2.4**	**14.2**	**7.4**	**34.4**	**25.9**	**84.3**	**91.7**	**61.2**	**71.7**
World	**49.1**	**36.1**	**41.3**	**32.4**	**16.7**	**16.6**	**25.0**	**26.1**	**34.2**	**47.3**	**33.7**	**41.5**

E.1.3 Female and male employment by status

	Employees				Employers				Own account workers				Contributing family workers			
	Female		Male		Female		Male		Female		Male		Female		Male	
	% of employed females		% of employed males		% of employed females		% of employed males		% of employed females		% of employed males		% of employed females		% of employed males	
	1991	2010	1991	2010	1991	2010	1991	2010	1991	2010	1991	2010	1991	2010	1991	2010
East and North-East Asia	**29.3**	**46.2**	**40.3**	**52.4**	**0.6**	**1.2**	**3.1**	**2.3**	**22.3**	**22.5**	**35.0**	**36.0**	**47.8**	**30.1**	**21.7**	**9.3**
China																
DPR Korea																
Hong Kong, China		94.8		86.0		1.4		5.3		3.1		8.6		0.7		0.1
Japan	74.0	88.2	81.7	86.7	1.3		4.1		8.9		11.6		15.5	5.9	2.3	0.9
Macao, China		95.5		88.8		1.4		4.7		2.1		6.2		1.0		0.3
Mongolia																
Republic of Korea	57.5	72.9	63.5	70.0					18.9		34.3		23.7	10.9	2.2	1.3
South-East Asia	**25.0**	**33.0**	**32.6**	**38.1**	**0.8**	**1.1**	**3.7**	**3.2**	**25.7**	**30.3**	**45.0**	**46.7**	**48.5**	**35.6**	**18.7**	**12.0**
Brunei Darussalam	96.1		94.4		0.5		1.2		2.8		4.1		0.6		0.4	
Cambodia		24.3		35.4		0.2		0.2		56.0		44.7		19.3		19.5
Indonesia																
Lao PDR																
Malaysia	70.8	78.4	64.1	72.0	2.0	1.7	3.6	5.2	16.7	12.1	28.3	20.1	8.1	7.8	2.4	2.6
Myanmar																
Philippines																
Singapore	91.4	90.4	82.2	81.7	2.3	3.1	7.5	7.0	3.9	5.7	9.8	10.9	2.4	0.8	0.4	0.4
Thailand	28.0	43.2	33.0	45.5	0.8	1.5	3.2	3.8	18.0	26.2	39.0	36.4	53.2	29.0	24.8	14.2
Timor-Leste																
Viet Nam																
South and South-West Asia	**11.3**	**17.6**	**21.3**	**24.8**	**0.7**	**0.6**	**2.9**	**1.7**	**48.6**	**43.2**	**61.6**	**62.5**	**39.4**	**38.7**	**14.2**	**11.1**
Afghanistan																
Bangladesh																
Bhutan		23.1		38.5		0.1		0.1		28.1		26.5		48.6		34.8
India		14.5		19.4		0.4		1.3		51.1		68.3		33.9		11.0
Iran (Islamic Rep. of)																
Maldives																
Nepal																
Pakistan																
Sri Lanka		54.3		56.1		0.8		3.5		22.6		35.9		22.4		4.4
Turkey	20.1	50.7	45.8	64.9		1.3		6.9	8.6	12.8	39.2	23.1	71.3	35.2	15.0	5.1
North and Central Asia	**89.0**	**82.5**	**85.1**	**80.8**	**0.1**	**1.0**	**0.6**	**1.9**	**8.0**	**13.9**	**12.6**	**15.5**	**2.8**	**2.6**	**1.8**	**1.8**
Armenia																
Azerbaijan																
Georgia																
Kazakhstan		65.4		67.9		1.6		2.4		31.9		28.5		0.9		0.8
Kyrgyzstan																
Russian Federation																
Tajikistan																
Turkmenistan																
Uzbekistan																
Pacific	**73.9**	**74.9**	**71.8**	**73.1**	**3.0**	**1.8**	**5.3**	**3.3**	**11.0**	**11.9**	**17.9**	**17.1**	**12.1**	**11.4**	**5.0**	**6.5**
American Samoa																
Australia	87.4	91.1	82.1	86.1	3.5		5.4		7.8		11.8		1.2	0.3	0.7	0.2
Cook Islands																
Fiji																
French Polynesia																
Guam																
Kiribati																
Marshall Islands																
Micronesia (F.S.)																
Nauru																
New Caledonia																
New Zealand	85.2	88.0	74.3	80.1	4.8		10.2		7.7		14.2		1.9	1.4	0.8	0.8
Niue																
Northern Mariana Islands																
Palau																
Papua New Guinea																
Samoa																
Solomon Islands																
Tonga																
Tuvalu																
Vanuatu																
Asia and the Pacific	**29.7**	**40.0**	**35.1**	**40.7**	**0.7**	**1.0**	**3.0**	**2.1**	**27.3**	**28.0**	**44.6**	**47.1**	**42.4**	**31.0**	**17.4**	**10.0**
Developed countries	75.9	88.7	81.8	86.1	1.6	1.3	4.4	3.8	8.8	5.2	11.7	9.3	13.7	4.9	2.1	0.8
Developing countries	27.2	37.8	32.8	39.0	0.6	1.0	2.9	2.1	28.3	29.0	46.2	48.6	44.0	32.2	18.1	10.4
LLDC	39.6	39.0	40.1	45.3	0.9	1.8	1.6	2.2	45.2	44.4	47.6	44.1	14.3	14.8	10.6	8.5
LDC	10.8	12.4	14.0	19.4	0.5	0.7	0.9	0.7	41.2	34.2	65.2	66.1	47.5	52.7	19.9	13.9
ASEAN	25.0	33.0	32.6	38.1	0.8	1.1	3.7	3.2	25.7	30.3	45.0	46.7	48.5	35.6	18.7	12.0
ECO	38.7	43.4	39.5	49.1	0.5	0.7	4.3	3.0	20.9	22.0	41.0	35.9	39.9	33.9	15.2	12.0
SAARC	10.8	15.6	19.7	22.0	0.7	0.5	2.3	1.3	50.9	44.8	63.9	65.1	37.7	39.1	14.0	11.6
Central Asia	57.8	56.5	51.1	58.2	0.4	0.9	1.4	2.0	30.7	34.0	41.6	34.6	11.1	8.6	6.0	5.2
Pacific island dev. econ.																
Low income econ.	17.5	18.3	18.9	23.2	0.7	0.9	1.2	1.0	37.8	32.6	62.2	63.0	44.0	48.3	17.7	12.8
Lower middle income econ.	16.7	23.3	23.6	26.2	0.8	0.7	2.9	1.8	42.6	41.1	59.1	60.5	39.9	34.9	14.4	11.5
Upper middle income econ.	32.0	47.0	40.9	53.0	0.5	1.1	2.9	2.3	21.1	22.7	34.4	35.5	46.4	29.1	21.8	9.2
High income econ.	72.8	85.1	77.2	81.9	1.8	1.8	5.3	4.8	10.4	7.3	15.5	12.4	15.0	5.8	2.0	0.9
Africa	**12.4**	**15.7**	**26.7**	**32.7**	**0.5**	**0.9**	**3.4**	**4.1**	**37.9**	**45.5**	**37.9**	**46.2**	**49.1**	**37.8**	**32.0**	**17.1**
Europe	**84.4**	**86.1**	**80.1**	**79.4**	**2.4**	**2.2**	**6.1**	**5.7**	**9.1**	**9.4**	**12.1**	**13.9**	**4.2**	**2.4**	**1.7**	**1.1**
Latin America and Carib.	**62.1**	**64.9**	**59.4**	**62.4**	**1.8**	**2.7**	**6.2**	**5.9**	**25.6**	**24.2**	**28.1**	**27.6**	**10.5**	**8.2**	**6.2**	**4.1**
North America	**90.9**	**92.3**	**83.2**	**86.4**	**2.1**	**1.6**	**5.8**	**4.6**	**6.5**	**6.0**	**10.8**	**8.9**	**0.5**	**0.1**	**0.1**	**0.1**
World	**40.8**	**47.2**	**44.0**	**47.5**	**1.0**	**1.3**	**3.8**	**3.2**	**24.5**	**26.5**	**37.0**	**40.3**	**33.6**	**24.9**	**15.1**	**9.0**

E.1.4 Women in national parliaments, women's access and legislation

	Seats held by women			Seats in the lower or single house			Seats in the upper house or senate		Index of women's access to			Legislation on violence against women
	% of seats			Number of seats			% of seats	Number of seats	Bank loans	Land	Property other than land	
	1990	2000	2012	1990	2000	2012			2009	2009	2009	2009
East and North-East Asia												
China	21	22	21	2 978	2 979	2 978			0.0	0.0	0.0	0.6
DPR Korea	21	20	16	655	687	687			0.0	0.0	0.0	1.0
Hong Kong, China									0.0	0.0	0.0	0.0
Japan	1	5	11	512	500	480	19 (10)	242 (10)				
Macao, China												
Mongolia	25	8	4	370	76	76			0.0	0.5	0.0	0.6
Republic of Korea	2	4	15	299	299	299						
South-East Asia												
Brunei Darussalam												
Cambodia		8	20		122	123	14 (12)	59 (12)	0.0	0.0	0.0	0.6
Indonesia	12		18	500	500	560			0.0	0.0	0.0	0.7
Lao PDR	6	21	25	79	99	132			0.0	0.5	0.0	0.4
Malaysia	5		10	177	192	221			0.0	0.0	0.0	0.4
Myanmar			4			395	2 (10)	224 (10)	0.0	0.0	0.0	0.8
Philippines	9	12	23	220	217	284	13 (10)	23 (10)	0.5	0.0	0.0	0.2
Singapore	5	4	22	82	93	90			0.0	0.0	0.0	0.5
Thailand	3	6	16	357	393	500	15 (11)	149 (11)	0.0	0.0	0.0	0.3
Timor-Leste			32			65			0.5	0.5	0.5	0.8
Viet Nam	18	26	24	496	450	500			0.0	0.0	0.0	0.8
South and South-West Asia												
Afghanistan	4		28	189		249	28 (11)	102 (11)	0.5	0.5	1.0	1.0
Bangladesh	10	9	20	330	330	350			0.5	0.5	0.5	0.1
Bhutan	2	2	9	150	150	47	24 (07)	25 (07)	0.0	0.0	0.0	0.7
India	5	9	11	521	543	545	10 (12)	238 (12)	0.5	0.5	0.5	0.3
Iran (Islamic Rep. of)	2	5	3	270	266	290			0.5	0.5	0.5	1.0
Maldives	6		7	48	50	77						
Nepal	6	6	33	132	205	594			0.5	0.5	0.5	0.6
Pakistan	10		23	237		342	16 (12)	104 (12)	0.5	0.5	0.5	0.5
Sri Lanka	5	5	6	224	225	225			0.0	0.5	0.5	0.3
Turkey	1	4	14	450	550	550						
North and Central Asia												
Armenia	36	3	8	340	131	131			0.0	0.0	0.0	0.8
Azerbaijan		12	16		125	125			0.0	0.0	0.0	0.8
Georgia		7	7		235	137			0.0	0.0	0.0	0.8
Kazakhstan		10	24		77	107	4 (11)	47 (11)	0.0	0.0	0.0	0.3
Kyrgyzstan		1	23		70	120			0.0	0.0	0.5	0.6
Russian Federation		8	14		441	450	5 (07)	169 (07)	0.0	0.0	0.0	0.3
Tajikistan		3	19		181	63	15 (10)	34 (10)	0.0	0.5	0.0	0.5
Turkmenistan	26	26	17	50	50	125			0.5	0.5	0.5	0.8
Uzbekistan		7	22		250	150	15 (10)	100 (10)	0.0	0.0	0.0	0.8
Pacific												
American Samoa												
Australia	6	22	25	148	147	150	38 (10)	76 (10)				
Cook Islands												
Fiji		11			71				0.0	0.5	0.5	0.8
French Polynesia												
Guam												
Kiribati	0	5	9	41	41	46						
Marshall Islands			3		33	33						
Micronesia (F.S.)		0	0		14	14						
Nauru	6	0	0	18	18	18						
New Caledonia												
New Zealand	14	29	32	97	120	121						
Niue												
Northern Mariana Islands												
Palau		0	0		16	16	15 (08)	13 (08)				
Papua New Guinea	0	2	1	109	109	109			0.0	0.5	1.0	0.8
Samoa	0	8	4	47	49	49						
Solomon Islands	0	2	0	37	49	50						
Tonga	0		4	29	30	28						
Tuvalu	8	0	7	13	12	15						
Vanuatu	4	0	2	46	52	52						
Asia and the Pacific												
Developed countries												
Developing countries												
LLDC												
LDC												
ASEAN												
ECO												
SAARC												
Central Asia												
Pacific island dev. econ.												
Low income econ.												
Lower middle income econ.												
Upper middle income econ.												
High income econ.												
Africa												
Europe												
Latin America and Carib.												
North America												
World												

F.1. Atmosphere and climate change

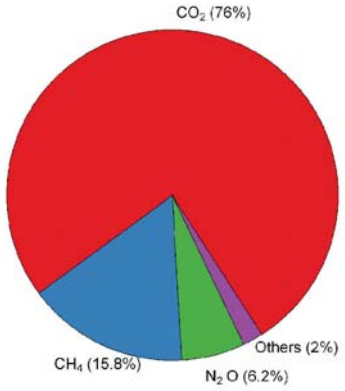
Greenhouse gas (GHG) emissions are continuing to rise globally and in the region. GHGs come in a number of different forms and from multiple sources. Fossil fuel use is responsible for most global carbon dioxide (CO_2) emissions, and a large part of global anthropogenic GHG emissions overall. Other GHGs – such as methane (CH_4) – that also have significant potential to contribute to the overall challenges associated with climate change are mainly associated with agricultural activities and related land use changes. With average global CO_2 concentrations in the atmosphere nearing 400 parts per million (ppm) and increasing by 2 ppm per year, urgent action is required to reverse the dangerous trend of rising GHG emissions of all types and sources.

Emissions of different types of GHGs can be combined into a single measure using measures of their global warming potential (GWP). GWP is calculated for the non-CO_2 GHGs as the ratio of radiative forcing (or warming potential) relative to the same mass of CO_2. In line with the United Nations Framework Convention on Climate Change, the combined GHG emission figures are estimated using the CO_2 equivalent GWP for a 100-year time period.[1] Compared with GHGs such as CH_4 and nitrous oxide (N_20), CO_2 has a relatively low radiative forcing potential. However, CO_2 remains a major concern in relation to climate change due to the rapid growth in CO_2 emissions during recent decades.

It is generally estimated that, to avoid the most serious consequences of global warming, the global surface temperature cannot be allowed to increase more than 2°C over the pre-industrial average, and to have a 50 per cent chance of reaching this goal, the long-term concentration of GHGs in the atmosphere needs to be limited to 450 ppm of CO_2 equivalent.[2]

In 2011, global average CO_2 concentrations amounted to 390 ppm, which is 110 ppm higher than the pre-industrial average of 280 ppm.[3] During 2012-2013, individual measurements of 400 ppm were recorded at sites in the Arctic and in Hawaii, United States of America.[4]

Figure F.1-1
Global greenhouse gas composition, 2010



Others: HFCs = 1.5%; PFCs = 0.2%; SF6 = 0.3%
Source: International Energy Agency, CO_2 *Emissions from Fuel Combustion* (Organisation for Economic Co-operation and Development/ International Energy Agency, Paris, 2012).

In 1990-2010, the Asian and Pacific region was responsible for more than half of total global GHG emissions.

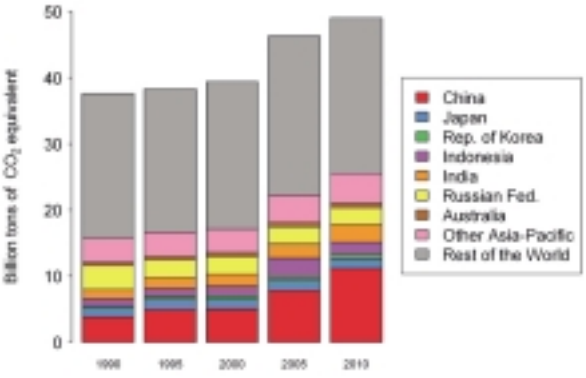
In 2010, China became the country with the largest share of global GHG emissions, accounting for about 23 per cent of the global total, which is approximately the same share as Latin America and the Caribbean and North America combined. For the highest shares of emissions in the region, China is followed by India with 5.5 per cent, the Russian Federation with 5.1 per cent, Indonesia with 4.0 per cent and Japan with 2.8 per cent of total global emissions. Emissions from Europe account for 12 per cent of the global total, which is slightly lower than those from North America, with 15.2 per cent.

In 2010, GHG emissions in the Asian and Pacific region increased by 1.5 per cent from the previous year, which is similar to the global increase. The most dramatic year-to-year increases were in countries with very low absolute

[1] See http://unfccc.int/ghg_data/items/3825.php.
[2] See http://www.worldenergyoutlook.org/publications/weo-2009/.
[3] See www.globalcarbonproject.org/carbonbudget/12/hl-full.htm.
[4] See www.bbc.co.uk/news/science-environment-22486153.

levels of emissions, including Bhutan, Cambodia and the Lao People's Democratic Republic. At the same time, of the countries with larger emission levels, China, India, Japan and the Republic of Korea continued to increase emissions by between 4 per cent and 7 per cent, while those of the Russian Federation increased by a more moderate 1.2 per cent. The largest proportional reductions in year-to-year emission levels were recorded in Indonesia (26 per cent), the Cook Islands (20 per cent), Hong Kong, China (7.9 per cent), Malaysia (7.3 per cent) and Australia (5.8 per cent).

Figure F.1-2
Greenhouse gas emissions, Asia and the Pacific and rest of the world, 1990-2010 (global warming potential carbon dioxide equivalent)

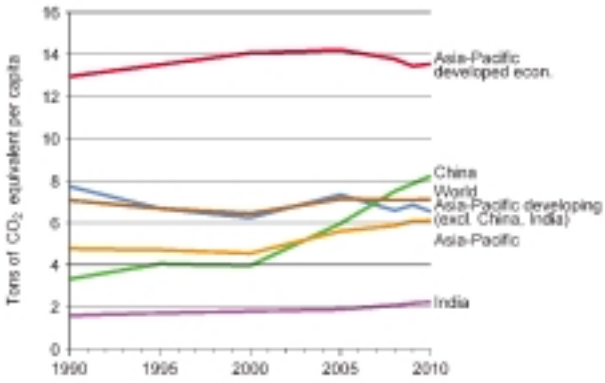


Although the region still records a higher level of GHG intensity (GHG emissions in tons of CO_2 equivalent per 1,000$ GDP) than the global average, the level has been falling continuously since 1990, which implies that each unit of value of economic production in the region's economies is being achieved in correlation with reduced amounts of GHG emissions.

GHG intensity in the Asian and Pacific region in 2010 was 1.2 compared with the world average of 0.8 (expressed as GHG emissions in tons of CO_2 equivalent per 1,000$ GDP). The rate of reduction in GHG intensity since 1990 has been the same as the global average and also that of the United States of America, but slower than that of Europe.

On a per capita basis, in 2010, the Asian and Pacific region's average of 6.1 tons of GHG (CO_2 equivalent) emissions remained slightly below the global average of 7.1. Developed countries in the region average 13.5 tons per capita, while developing countries in the region average 5.8 tons per capita (6.5 if China and India are excluded). The largest emitters in the region on a per capita basis are Brunei Darussalam at 50 tons, Australia and Mongolia at 28 and 26 tons, respectively, and Kazakhstan, the Lao People's Democratic Republic, New Zealand, the Russian Federation and Turkmenistan at between 16 and 20 tons. China emits 8.2 tons per capita, compared with 21.5 tons in North America and 9.9 tons in Europe.

Figure F.1-3
Greenhouse gas emissions per capita (carbon dioxide equivalent), 1990-2010



CO_2 emissions from the Asian and Pacific region have been rising at a more rapid rate than overall GHG emissions from the region.

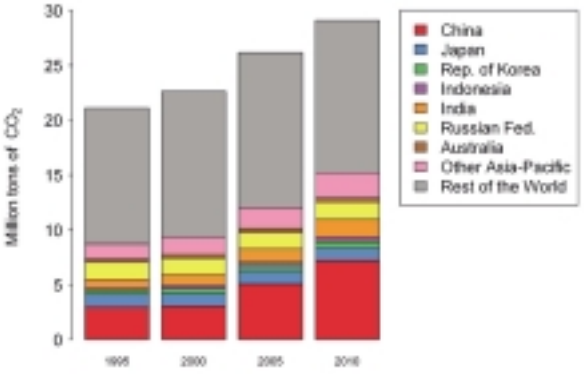
Between 2005 and 2010, CO_2 emissions increased in the region by 26.2 per cent while GHG emissions increased by 14.7 per cent. In the same period, while increasing by only 2.7 per cent in the Pacific and 7.2 per cent in North and Central Asia, CO_2 emissions have increased much more significantly in South and South-West Asia (32 per cent), East and North-East Asia (31.5 per cent) and South-East Asia (22.8 per cent). The region now contributes more than half of all global CO_2 emissions, with China accounting for 24.8 per cent of global CO_2

emissions, or 47.5 per cent of those from the region.

In its publication *World Energy Outlook*, the International Energy Agency (IEA) presents the "450 Scenario," which "sets out an energy pathway consistent with the goal of limiting the global increase in temperature to 2°C by limiting the concentration of GHGs in the atmosphere to around 450 ppm of CO_2."[5] Projections by IEA have indicated that, to reach the target of 450 ppm, emission levels would need to start declining by 2020 at the latest.[6] As CO_2 emissions form the majority of global GHG emissions, and fossil fuel combustion is the primary source of CO_2 emissions, contributing 65 per cent of all GHG emissions,[7] reducing the consumption of fossil fuels is critical.

The generation of electricity and heat currently account for 41 per cent of CO_2 emissions, followed by transport at 22 per cent, industry at 20 per cent, and residential and others each at about 10 per cent.[8]

Figure F.1-4
Carbon dioxide emissions, Asian and Pacific region and rest of the world, 1995-2010



Since energy infrastructure has a long lifetime, investments made today will impact emission levels for decades to come. According to the *World Energy Outlook 2012*, unless global coordinated action to reduce CO_2 emissions from energy is taken urgently, reducing CO_2 emissions in line with the 450 Scenario will become more costly.[9]

Box F.1-1
Setting targets to reduce carbon dioxide emissions in the region

Several countries in the Asian and Pacific region, including Cambodia, China, India, Indonesia, Japan, Maldives, the Marshall Islands, Mongolia, Papua New Guinea, the Republic of Korea, Singapore, Thailand and Tuvalu, have introduced voluntary targets to reduce CO_2 emissions in absolute amounts or to reduce the consumption of fossil fuels. China has set a goal to reduce by 2020 CO_2 emissions per unit of GDP by 40 per cent to 45 per cent below 2005 levels, as well as to increase forest cover by 40 million hectares. China has also recently instituted a natural resources tax, and is planning to put in place a domestic carbon trading system. As a first step, a pilot carbon trading scheme was launched in Shenzhen in June 2013, to be followed by carbon trading schemes in six other locations before 2014.[a]

Growing wealth and consumption across the world has contributed to global CO_2 concentrations increasing by an average of 2 ppm during the past decade.[b] As concentrations depend on emissions accumulated over time, ambitious targets and urgent action are needed to reverse the rise of concentrations in the atmosphere.

[a] See www.guardian.co.uk/environment/2013/may/22/china-carbon-trading-shenzhen.
[b] See www.globalcarbonproject.org/carbonbudget/12/hl-full.htm.

[5] See www.iea.org/publications/scenariosandprojections/.
[6] International Energy Agency, *World Energy Outlook 2009* (Organisation for Economic Co-operation and Development/International Energy Agency, Paris, 2009). Available from www.worldenergyoutlook.org/publications/weo-2009/.
[7] International Energy Agency, *CO_2 Emissions from Fuel Combustion: Highlights* (Organisation for Economic Co-operation and Development/International Energy Agency, Paris, 2012). Available from www.iea.org/publications/freepublications/publication/name,32870,en.html.
[8] Ibid.
[9] International Energy Agency, *World Energy Outlook 2012* (Organisation for Economic Co-operation and Development / International Energy Agency, Paris, 2012). Available from www.worldenergyoutlook.org/publications/weo-2012/.

Both CH_4 and N_2O emissions have continued to rise in the Asian and Pacific region, particularly in East and North-East Asia. In the 1990s, the region contributed less than half of all global sulphur dioxide (SO_2). Since then, emissions from the rest of the world have been reducing, while, since 2000, those from the Asian and Pacific region have been increasing.

CH_4 and N_2O emissions are important in particular because they are potent GHGs. SO_2 emissions can lead to acid rain and harm human health. China contributed about 40 per cent of N_2O emissions and 36 per cent of CH_4 emissions from the region in 2008. While CO_2 emissions are primarily related to energy, the main source of CH_4 and N_2O is agriculture (see key message on emissions from agriculture).

Figure F.1-5
Methane emissions, Asian and Pacific subregions, 1970-2008

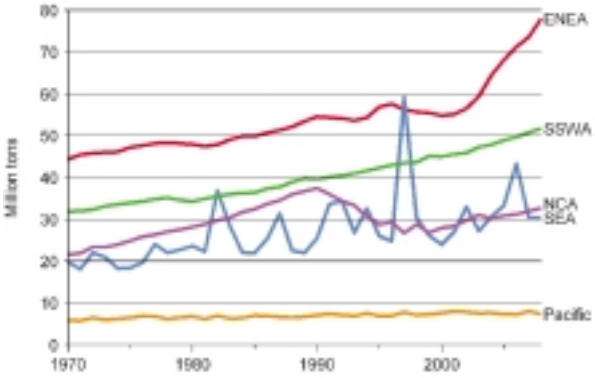
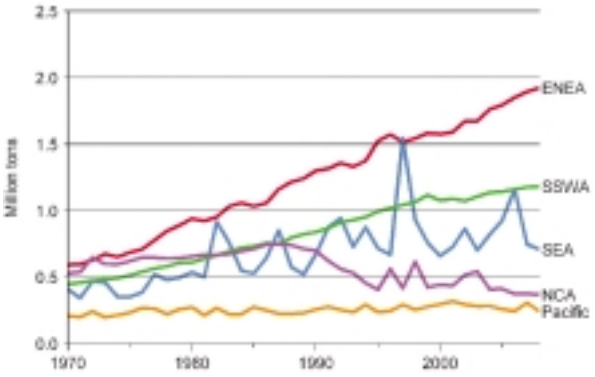


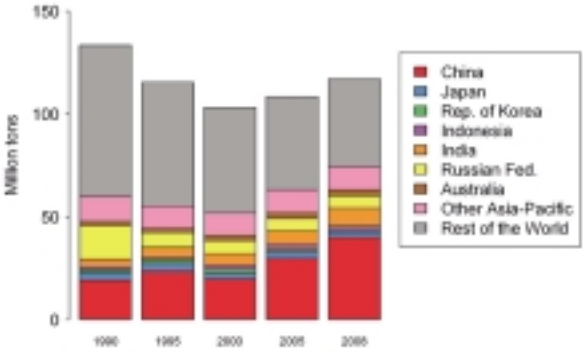
Figure F.1-6
Nitrous oxide emissions, Asian and Pacific subregions, 1970-2008



[10] See www.ipcc.ch/publications_and_data/ar4/wg3/en/ch8s8-es.html.

SO_2 emissions, like CO_2 emissions, come mainly from the combustion of coal and petroleum. As a result of a continuous increase in the rate, SO_2 emissions from the Asian and Pacific region contributed nearly two thirds (63.5 per cent) of global SO_2 emissions in 2008, with the majority originating from a handful of countries, in particular China (34.1 per cent of global SO_2 emissions, or 54 per cent of those from the region), followed by India (7.3 per cent of global, 11.6 per cent of regional SO_2 emissions) and the Russian Federation (5 per cent of global, 7.8 per cent of regional SO_2 emissions).

Figure F.1-7
Sulphur dioxide emissions, Asia and the Pacific and rest of the world, 1990-2008



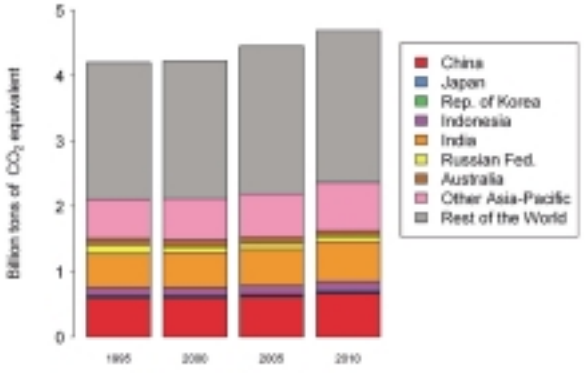
The region accounts for about half of global emissions from agriculture.

Agriculture accounted for about 10 per cent to 12 per cent of total global anthropogenic GHG emissions in 2005.[10] The main sources of emissions are crop and livestock production and management, and forestry and associated land use changes.

Globally, as well as in the Asian and Pacific region, GHG emissions from agriculture are dominated by non-CO_2 gases such as CH_4 and N_2O, arising from crop and livestock production and management.

China and India have the highest emissions from agriculture in the region. Together they account for 54 per cent of the emissions in the region, or 27 per cent of total global emissions from agriculture.

Figure F.1-8
Emissions from agriculture, Asia and the Pacific and rest of the world, 1990-2010

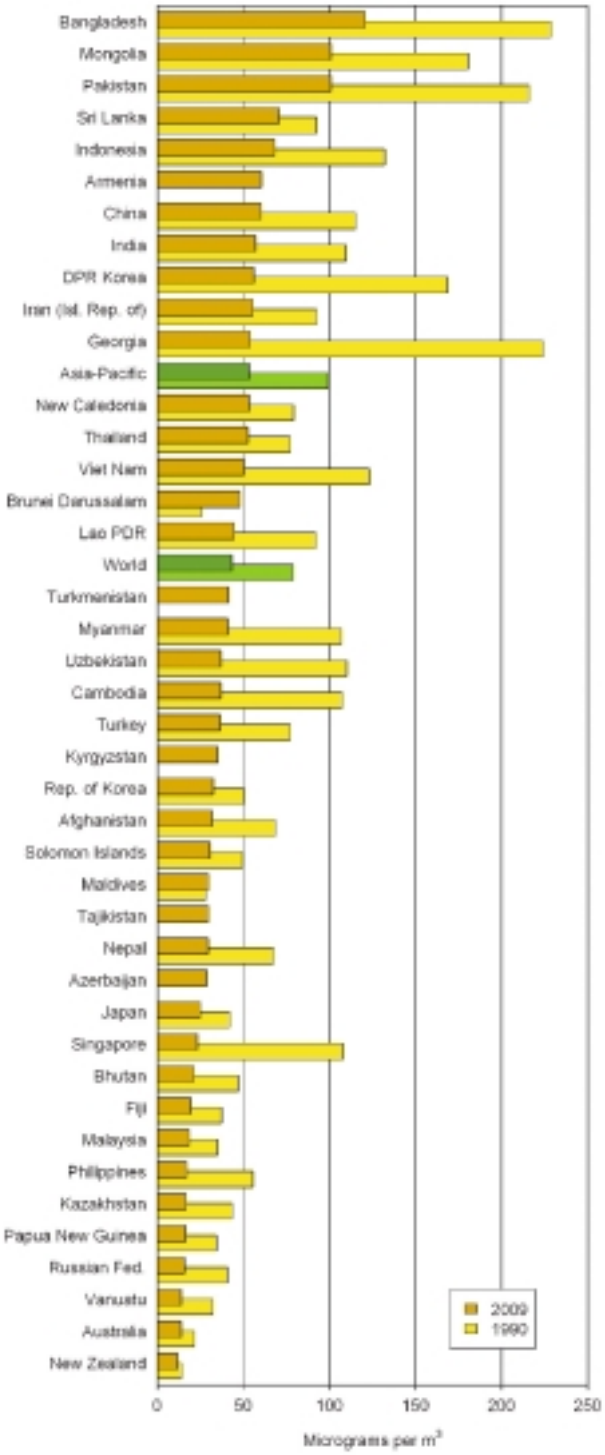


Concentrations of particulate matter in the local atmospheres above cities in Asia and the Pacific exceed the maximum safety standard set by the World Health Organization

One of the most problematic issues regarding local air pollution is the concentration of particulate matter (PM), as it tends to affect more people than other pollutants such as SO_2. The particles are identified according to their aerodynamic diameter, as either PM10 (particles with a diameter smaller than 10 microns) or PM2.5 (particles with a diameter smaller than 2.5 microns). Although average concentrations of PM10 declined by 45 per cent between 1990 and 2009, concentrations are generally still much higher than the recommended World Health Organization standard (20 microns per m^3, annual mean).[11]

The effects of particulate matter on health occur at levels of exposure currently being experienced by most urban and rural populations in both developed and developing countries in the region. Chronic exposure to particles contributes to the risk of developing cardiovascular and respiratory diseases, as well as lung cancer.[12] Urban air pollution generated by vehicles, industries and energy production causes an estimated 800,000 premature deaths every year.[13]

Figure F.1-9
Concentration of particulate matter in urban areas, Asia and the Pacific, 1990 and 2009



[11] World Health Organization, *Air Quality Guidelines: Global Update 2005 – Particulate Matter, Ozone, Nitrogen Dioxide and Sulphur Dioxide* (2006). Available from www.who.int/phe/health_topics/outdoorair/outdoorair_aqg/en/index.html.

[12] World Health Organization, "Air quality and health", Fact Sheet No. 313 (September 2011). Available from www.who.int/mediacentre/factsheets/fs313/en/.

[13] Jeff Kenworthy and Felix Laube, "Urban transport patterns in a global sample of cities and their linkages to transport infrastructure, land use, economics and environment", *World Transport Policy and Practice,* vol. 8, No. 3 (2002), pp. 5-20.

Some 1.7 billion people in the Asian and Pacific region rely on dung, wood, crop waste or coal to meet their most basic energy needs.[14] Cooking and heating with such solid fuels on open fires or stoves without chimneys leads to indoor air pollution. Globally, indoor air pollution is estimated to cause 36 per cent of all lower respiratory infections and 22 per cent of chronic obstructive pulmonary disease. Exposure is particularly high among women and children, who spend the most time near the domestic hearth.[15]

Further reading

Intergovernmental Panel on Climate Change. *Climate Change 2007: Synthesis Report, Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. Geneva, 2008. Available from www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr.pdf.

International Energy Agency. *CO_2 Emissions from Fuel Combustion*. Various years.

International Energy Agency. *World Energy Outlook*. Various years.

United Nations Environment Programme. *Bridging the Emissions Gap: A UNEP Synthesis Report*. 2011. Available from www.unep.org/pdf/UNEP_bridging_gap.pdf.

Technical notes

GHG emissions: total (million tons of CO_2 equivalent, percentage change per annum, tons of CO_2 equivalent per capita)

Total GHG emissions, expressed in million tons of CO_2 equivalent, is calculated using the GWP100 established by the United Nations Framework Convention on Climate Change under the Tier 1 Sectoral Approach of the Intergovernmental Panel on Climate Change. GHG emissions are composed of CO_2 totals excluding short-cycle biomass burning (such as agricultural waste burning and Savannah burning but including other biomass burning such as forest fires, post-burn decay, peat fires and decay of drained peatlands), all anthropogenic CH_4 sources, N_2O sources and F-gases (HFCs, PFCs and SF6). CO_2 equivalent is a measure used to compare different GHGs based on their contribution to radiative forcing. The United Nations Framework Convention on Climate Change currently (2005) uses GWPs as factors to calculate CO_2 equivalent. **Indicator calculations:** Percentage change in GHG emissions per annum and in a 10-year period. Per capita figures are based on population figures (WPP2012). **Aggregate calculations:** Sum of individual country values (million tons of CO_2 equivalent); average annual growth of all country level values of total GHG emissions in million tons of CO_2 equivalent of individual countries (percentage change per annum); weighted averages using total population (WPP2012) as weight (tons of CO_2 equivalent per capita). Missing data are not imputed.

GHG intensity (GHG emissions in tons of CO_2 equivalent per 1,000$ GDP)

GHG intensity of economy (or GHG per GDP) is a measure of GHG emissions per unit of economic output. The economic output is expressed as GDP in current United States dollars. **Aggregate calculations:** Weighted averages using current GDP in United States dollars. Missing data are not imputed.

[14] World Health Organization, Air Pollution, proportion of population using solid fuels, Millennium Indicators Database. Available from http://mdgs.un.org/unsd/mdg/SeriesDetail.aspx?srid=712.

[15] World Health Organization, *World Health Report 2002: Reducing Risks, Promoting Healthy Life* (Geneva, 2002). Available from www.who.int/whr/2002/en/.

CO_2 emissions from fuel combustion (million tons of CO_2, percentage change per annum, tons of CO_2 equivalent per capita, grams per 1 dollar GDP in 2005 PPP)

Refers to emissions of CO_2 from burning oil, coal and natural gas for energy use. Total CO_2 emissions from fuel combustion as calculated using the Tier 1 Sectoral Approach of the Intergovernmental Panel on Climate Change. **Indicator calculations:** Per capita figures are based on population figures (WPP2012). Per GDP figures are based on GDP in 2005 PPP (WDI). **Aggregate calculations:** Sum of individual country values (million tons of CO_2); average annual growth of aggregate million ton values (percentage change per annum); weighted averages using total population or GDP in 2005 PPP as weight (tons of CO_2 equivalent per capita, grams per 1 dollar GDP in 2005 PPP). Missing data are not imputed.

Greenhouse gas (GHG) emissions from agriculture (thousand tons of CO_2 equivalent)

Total greenhouse gas emissions from agriculture contain all the emissions produced in the different agricultural emissions sub-domains, providing a picture of the contribution to the total amount of GHG emissions from agriculture. GHG emissions from agriculture consist of non-CO_2 gases, namely methane (CH_4) and nitrous oxide (N_2O), produced by crop and livestock production and management activities. **Aggregate calculations:** Sum of individual country values. Missing data are not imputed.

Methane (CH_4) emissions from agriculture (Thousand tons of CO_2 equivalent)

The release of methane (CH_4) produced by crop and livestock production and management activities to the atmosphere over a specified area and period of time. **Aggregate calculations:** Sum of individual country values. Missing data are not imputed.

Nitrous oxide (N_2O) emissions from agriculture (Thousand tons of CO_2 equivalent)

The release of nitrous oxide (N_2O) produced by crop and livestock production and management activities to the atmosphere over a specified area and period of time. **Aggregate calculations:** Sum of individual country values. Missing data are not imputed.

Consumption of ozone-depleting substances (grams per capita, grams per 1,000 GDP in 2005 PPP)

Annual consumption in weighted tons of the individual substances in the group of ozone-depleting substances multiplied by their ozone-depleting potential. Ozone-depleting substances are those containing chlorine or bromine that destroy the stratospheric ozone layer. **Indicator calculations:** Per capita figures are based on population figures (WPP2012). Per 1,000 GDP in 2005 PPP are based on WDI figures. **Aggregate calculations:** Weighted averages using total population (grams per capita) and GDP in 2005 PPP (grams per 1,000 GDP in 2005 PPP) as weights. Missing data are not imputed.

CH_4 emissions (thousand tons)

CH_4 emissions are estimated using a model from the Netherlands National Institute for Public Health and the Environment by the following Emission Database for Global Atmospheric Research (EDGAR) divisions: energy, agriculture, waste and others. "Others" includes industrial process emissions, N_2O usage, and tropical and temperate forest fires. **Aggregate calculations:** Sum of individual country values. Missing data are not imputed.

SO_2 emissions (thousand tons)

SO_2 emissions are estimated using a model from the Netherlands National Institute for Public Health and the Environment by the following EDGAR subdivisions: fuel combustion, biofuel combustion, fugitive, industry, solvent use, agriculture, waste and others. "Others" comprises tropical and temperate forest fires. **Aggregate calculations:** Sum of individual country values. Missing data are not imputed.

N_2O emissions (thousand tons)

N_2O emissions are estimated using a model from the Netherlands National Institute for Public Health and the Environment by the following EDGAR divisions: energy, agriculture, waste and others. "Others" includes industrial process

emissions, N_2O usage, and tropical and temperate forest fires. **Aggregate calculations:** Sum of individual country values. Missing data are not imputed.

Concentration of PM10 in urban areas (micrograms per m^3)

Particulate matter concentrations refer to fine suspended particles with a diameter smaller than 10 microns (PM10) that can penetrate deeply into the respiratory tract and cause significant health damage. The estimates represent the average annual exposure level of the average urban resident to outdoor particulate matter. A country's state of technology and pollution control is an important determinant of particulate matter concentrations. **Aggregate calculations:** Weighted averages using urban population (WPP2012) as weight. Missing data are not imputed.

Biochemical oxygen demand (tons per day)

Biochemical oxygen demand is a measure of the amount of oxygen consumed by bacteria in breaking down waste. Biochemical oxygen demand is a proxy measure for all types of industrial organic water pollutants.

Sources

Source of CO_2 from fuel data: IEA, CO_2 emissions by product and flow, IEA CO_2 Emissions from Fuel Combustion Statistics database. Countries report to IEA through the Organisation for Economic Co-operation and Development (OECD) member site and non-OECD government site. The IEA secretariat does not adjust the data. **Data obtained:** 7 June 2013.

Source of total GHGs emissions, SO_2, N_2O data: Emission Database for Global Atmospheric Research (EDGAR), a joint project of European Commission Joint Research Centre and Netherlands Environmental Assessment Agency. Emissions data are compiled and published in EDGAR version 4.2 and are calculated by individual countries using country-specific information. **Data obtained:** 25 March 2013, except SO_2 emissions: 30 August 2012.

Source of emissions from agriculture: FAOSTAT Emissions Agriculture database, Food and Agriculture Organization of the United Nations. The FAOSTAT emissions data are estimates by FAO. Member countries report their emissions and are computed at Tier 1 following IPCC Guidelines for National Greenhouse Gas Inventories. **Data obtained:** 26 March 2013.

Source of ozone data: Millennium Indicators Database. Countries that are party to the Montreal Protocol on Substances that Deplete the Ozone Layer report data annually to the secretariat using data reporting formats agreed by the parties. Data are usually reported by the ministry of environment or by designated authorities such as an environmental protection agency, an environmental management authority or a national ozone unit. Country data are not adjusted. WDI is the source for GDP in 2005 PPP. National accounts data are compiled by the World Bank using OECD national accounts. The World Bank makes some adjustments to the data. **Data obtained:** 12 March 2013.

Source of PM10 and biochemical oxygen demand data: World Bank, WDI. Estimates from Kiran Dev Pandey and others, "Ambient particulate matter concentrations in residential and pollution hotspot areas of world cities: new estimates based on the Global Model of Ambient Particulates (GMAPS)", World Bank Development Economics Research Group and Environment Department Working Paper (Washington, DC, World Bank, 2006). Data are provided by countries. **Data obtained:** 13 March 2013.

F.1.1 Greenhouse gas emissions

	Total greenhouse gas (GHG) emissions										GHG intensity			
	Million tons of CO_2 equivalent				% change per annum		Tons of CO_2 equivalent per capita				GHG emissions in tons of CO_2 equivalent per 1,000$ GDP			
	1990	2000	2008	2010	90-00	00-10	1990	2000	2008	2010	1990	2000	2008	2010
East and North-East Asia	**5 730**	**7 206**	**12 268**	**13 426**	**2.3**	**6.4**	**4.2**	**4.9**	**7.9**	**8.5**	**1.5**	**1.1**	**1.2**	**1.1**
China	3 870	5 073	10 060	11 182	2.7	8.2	3.3	4.0	7.5	8.2	9.6	4.3	2.2	1.9
DPR Korea	162	98	102	96	-4.9	-0.2	8.0	4.3	4.2	3.9	11.0	9.3	7.6	7.9
Hong Kong, China	37	45	52	51	2.0	1.2	6.4	6.6	7.5	7.2	0.5	0.3	0.2	0.2
Japan	1 302	1 412	1 389	1 379	0.8	-0.2	10.7	11.2	10.9	10.8	0.4	0.3	0.3	0.3
Macao, China	1	1	1	1	2.4	0.7	2.8	3.0	2.9	2.6	0.3	0.2	0.1	0.0
Mongolia	58	64	68	70	1.0	0.9	26.6	26.8	26.0	25.8	38.5	56.4	12.2	11.3
Republic of Korea	300	512	595	647	5.5	2.4	7.0	11.1	12.4	13.3	1.1	1.0	0.6	0.6
South-East Asia	**2 739**	**2 953**	**3 734**	**3 878**	**0.8**	**2.8**	**6.2**	**5.6**	**6.4**	**6.5**	**7.5**	**4.8**	**2.4**	**2.0**
Brunei Darussalam	18	17	19	20	-0.7	1.7	71.5	51.6	49.6	50.4	5.2	2.9	1.3	1.6
Cambodia	20	22	172	192	1.3	24.0	2.2	1.8	12.3	13.3	11.5	6.1	16.6	17.0
Indonesia	1 161	1 445	2 015	1 946	2.2	3.0	6.5	6.9	8.6	8.1	9.2	8.8	3.9	2.7
Lao PDR	30	24	32	100	-2.1	15.1	7.1	4.5	5.1	15.6	34.8	14.6	6.0	14.8
Malaysia	198	254	334	330	2.5	2.6	10.9	10.9	12.2	11.7	4.2	2.6	1.4	1.3
Myanmar	875	562	340	362	-4.3	-4.3	20.8	11.6	6.7	7.0	169.3	77.3	13.2	8.6
Philippines	96	140	153	159	3.8	1.3	1.6	1.8	1.7	1.7	2.0	1.7	0.9	0.8
Singapore	33	48	50	50	4.0	0.4	10.8	12.3	10.4	9.9	0.8	0.5	0.3	0.2
Thailand	208	283	360	413	3.1	3.8	3.7	4.5	5.4	6.2	2.4	2.2	1.2	1.2
Timor-Leste	0	1	1	1	3.3	4.2	0.6	0.7	0.9	0.9	2.5	1.6	0.2	0.2
Viet Nam	99	156	258	306	4.6	7.0	1.4	1.9	3.0	3.4	15.3	5.0	2.8	2.9
South and South-West Asia	**2 238**	**3 093**	**3 932**	**4 254**	**3.3**	**3.2**	**1.8**	**2.0**	**2.3**	**2.4**	**3.1**	**3.1**	**1.5**	**1.3**
Afghanistan	12	13	15	18	0.8	2.7	1.1	0.7	0.6	0.6	3.4	3.8	1.4	1.1
Bangladesh	126	141	170	184	1.2	2.6	1.2	1.1	1.1	1.2	4.5	3.1	2.1	1.8
Bhutan	1	4	3	9	10.9	10.0	2.4	6.4	4.2	13.1	4.6	8.2	2.3	5.9
India	1 376	1 873	2 434	2 692	3.1	3.7	1.6	1.8	2.1	2.2	4.2	4.0	1.9	1.6
Iran (Islamic Rep. of)	283	448	512	528	4.7	1.7	5.0	6.8	7.0	7.1	3.1	4.3	1.4	1.2
Maldives	0	0	1	1	9.1	9.2	0.6	1.1	2.1	2.3	0.5	0.4	0.3	0.4
Nepal	25	29	32	33	1.4	1.2	1.4	1.2	1.2	1.2	6.6	5.0	2.7	2.0
Pakistan	173	245	338	340	3.6	3.3	1.6	1.7	2.0	2.0	3.6	3.4	2.3	2.0
Sri Lanka	18	23	28	30	2.4	2.5	1.1	1.2	1.4	1.4	2.2	1.4	0.7	0.6
Turkey	223	316	399	420	3.6	2.9	4.1	5.0	5.7	5.8	1.1	1.2	0.5	0.6
North and Central Asia	**4 399**	**3 151**	**3 294**	**3 191**	**-3.3**	**0.1**	**20.5**	**14.5**	**15.0**	**14.4**	**6.9**	**10.2**	**1.7**	**1.8**
Armenia	25	7	13	11	-11.9	5.1	7.0	2.3	4.2	3.8	11.5	3.6	1.1	1.2
Azerbaijan	78	42	54	50	-5.9	1.7	10.8	5.2	6.1	5.5	12.0	8.0	1.1	0.9
Georgia	38	11	12	13	-11.4	1.5	7.0	2.4	2.8	3.0	4.5	3.7	1.0	1.1
Kazakhstan	372	194	308	318	-6.3	5.1	23.0	13.3	19.8	20.0	12.6	10.6	2.3	2.1
Kyrgyzstan	33	10	12	13	-11.1	2.6	7.6	2.1	2.3	2.5	12.8	7.5	2.4	2.8
Russian Federation	3 582	2 647	2 605	2 510	-3.0	-0.5	24.2	18.0	18.1	17.5	6.3	10.2	1.6	1.7
Tajikistan	22	10	14	15	-7.3	3.9	4.1	1.6	2.0	1.9	7.6	11.7	2.8	2.6
Turkmenistan	81	63	92	87	-2.5	3.3	22.2	14.1	18.6	17.3	26.5	12.8	4.2	4.4
Uzbekistan	167	166	185	174	-0.1	0.4	8.1	6.7	6.8	6.3	11.4	12.1	6.4	4.4
Pacific	**589**	**734**	**773**	**762**	**2.2**	**0.4**	**21.9**	**23.6**	**21.9**	**20.8**	**1.5**	**1.5**	**0.6**	**0.5**
American Samoa	0	0	0	0	9.6	1.8	0.4	0.9	0.9	1.1				
Australia	482	605	638	629	2.3	0.4	28.2	31.4	29.5	28.1	1.5	1.5	0.6	0.5
Cook Islands	0	0	0	0	18.6	-9.6	1.1	6.2	3.0	2.0	0.3	1.2	0.3	0.2
Fiji	2	2	2	2	-3.4	3.4	3.2	2.0	2.6	2.7	1.7	1.0	0.6	0.7
French Polynesia	1	1	1	1	-4.9	2.1	5.1	2.6	2.7	2.8	0.3	0.2	0.1	0.1
Guam	0	0	0	0	1.6	2.5	0.5	0.5	0.5	0.6				
Kiribati	0	0	0	0	2.3	1.8	0.6	0.6	0.6	0.6	1.0	0.7	0.4	0.4
Marshall Islands		0	0	0		0.0		0.2	0.2	0.2		0.1	0.1	0.1
Micronesia (F.S.)	0	0	0	0	1.8	0.0	0.5	0.6	0.6	0.6	0.3	0.3	0.2	0.2
Nauru														
New Caledonia	2	2	2	1	0.2	-1.2	9.7	7.9	6.3	6.0	0.6	0.5	0.2	0.2
New Zealand	66	78	85	80	1.7	0.3	19.3	20.2	20.0	18.3	1.5	1.4	0.7	0.6
Niue														
Northern Mariana Islands	0	0	0	0	0.0	0.0	0.2	0.1	0.2	0.2				
Palau														
Papua New Guinea	30	42	40	43	3.7	0.1	7.1	7.9	6.1	6.2	9.0	12.1	5.0	4.4
Samoa	0	0	0	0	1.0	0.9	1.8	1.8	1.8	1.9	2.6	1.4	0.6	0.6
Solomon Islands	6	4	4	5	-3.6	1.1	18.9	9.9	8.8	8.7	28.3	12.1	7.3	6.7
Tonga	0	0	0	0	4.1	-1.8	1.3	1.8	1.5	1.4	0.7	1.0	0.4	0.4
Tuvalu			0	0					1.0	1.0			0.3	0.3
Vanuatu	0	0	0	0	0.7	-0.4	2.9	2.5	2.0	1.9	2.5	1.7	0.8	0.6
Asia and the Pacific	**15 694**	**17 137**	**24 001**	**25 511**	**0.9**	**4.1**	**4.8**	**4.5**	**5.9**	**6.1**	**2.3**	**1.9**	**1.3**	**1.2**
Developed countries	1 850	2 094	2 112	2 087	1.2	0.0	13.0	14.1	13.8	13.5	0.5	0.4	0.4	0.3
Developing countries	13 844	15 043	21 889	23 423	0.8	4.5	4.4	4.2	5.5	5.8	5.5	3.9	1.8	1.7
LLDC	905	628	827	897	-3.6	3.6	9.3	5.3	6.1	6.5	12.6	10.7	2.9	2.7
LDC	1 097	802	770	902	-3.1	1.2	5.6	3.3	2.8	3.2	24.8	11.6	5.1	4.5
ASEAN	2 739	2 952	3 733	3 877	0.8	2.8	6.2	5.6	6.4	6.5	7.5	4.8	2.4	2.0
ECO	1 445	1 509	1 930	1 962	0.4	2.7	5.0	4.2	4.8	4.7	3.6	3.1	1.3	1.2
SAARC	1 732	2 329	3 021	3 306	3.0	3.6	1.5	1.7	1.9	2.1	4.1	3.8	1.9	1.6
Central Asia	817	504	690	681	-4.7	3.1	12.3	7.1	9.0	8.7	11.7	10.2	2.6	2.3
Pacific island dev. econ.	41	52	50	53	2.2	0.3	6.5	6.4	5.3	5.4	3.6	3.8	1.6	1.7
Low income econ.	1 275	887	857	911	-3.6	0.3	5.8	3.3	2.8	2.9	20.4	11.3	5.3	4.4
Lower middle income econ.	3 282	4 209	5 588	5 901	2.5	3.4	2.4	2.6	3.1	3.1	5.5	4.9	2.4	2.0
Upper middle income econ.	8 896	9 321	14 724	15 839	0.5	5.4	5.8	5.6	8.4	8.9	6.2	4.5	1.8	1.7
High income econ.	2 241	2 720	2 833	2 860	2.0	0.5	11.5	13.1	13.2	13.2	0.6	0.5	0.4	0.3
Africa	**3 866**	**3 656**	**4 679**	**4 571**	**-0.6**	**2.3**	**6.2**	**4.6**	**4.8**	**4.5**	**7.6**	**6.1**	**2.9**	**2.5**
Europe	**7 190**	**6 118**	**6 076**	**5 869**	**-1.6**	**-0.4**	**12.6**	**10.6**	**10.3**	**9.9**	**0.9**	**0.7**	**0.3**	**0.3**
Latin America and Carib.	**3 384**	**3 592**	**3 714**	**3 888**	**0.6**	**0.8**	**7.6**	**6.8**	**6.4**	**6.5**	**3.0**	**1.6**	**0.8**	**0.8**
North America	**6 720**	**7 719**	**7 663**	**7 444**	**1.4**	**-0.4**	**23.8**	**24.5**	**22.5**	**21.5**	**1.1**	**0.7**	**0.5**	**0.5**
World	**37 595**	**39 397**	**47 696**	**49 024**	**0.5**	**2.2**	**7.1**	**6.4**	**7.1**	**7.1**	**1.6**	**1.2**	**0.8**	**0.8**

F.1.2 Carbon dioxide intensities

	Carbon dioxide (CO_2) emissions from fuel combustion													
	Million tons of CO_2				% change per annum		Tons of CO_2 equivalent per capita				Grams per 1 dollar GDP in 2005 PPP			
	1990	2000	2005	2010	90-00	00-10	1990	2000	2005	2010	1990	2000	2005	2010
East and North-East Asia	**3 664**	**4 776**	**6 876**	**9 040**	**2.7**	**6.6**	**2.7**	**3.2**	**4.5**	**5.8**	**710**	**587**	**647**	**614**
China	2 211	3 037	5 062	7 217	3.2	9.0	1.9	2.4	3.8	5.3	1 770	902	944	791
DPR Korea	114	69	74	63	-5.0	-0.8	5.6	3.0	3.1	2.6				
Hong Kong, China	33	40	41	41	2.0	0.4	5.7	5.8	5.9	5.9	240	197	164	138
Japan	1 064	1 184	1 221	1 143	1.1	-0.4	8.7	9.4	9.6	9.0	325	323	314	290
Macao, China														
Mongolia	13	9	9	12	-3.6	3.0	5.8	3.7	3.8	4.4	2 371	1 654	1 300	1 190
Republic of Korea	229	438	469	563	6.7	2.6	5.3	9.5	10.0	11.6	470	497	428	426
South-East Asia	**368**	**719**	**924**	**1 134**	**6.9**	**4.7**	**0.8**	**1.4**	**1.7**	**1.9**	**358**	**428**	**431**	**411**
Brunei Darussalam	3	5	5	8	3.3	5.8	13.1	14.0	13.8	20.5	264	293	290	452
Cambodia	0	2	3	4		6.7	0.0	0.2	0.2	0.3		152	131	135
Indonesia	146	273	336	411	6.5	4.2	0.8	1.3	1.5	1.7	394	488	476	441
Lao PDR														
Malaysia	50	113	152	185	8.5	5.1	2.7	4.8	5.9	6.5	397	453	485	475
Myanmar	4	9	11	8	8.7	-1.6	0.1	0.2	0.2	0.2				
Philippines	38	68	71	76	5.9	1.2	0.6	0.9	0.8	0.8	243	324	271	230
Singapore	29	48	51	63	5.0	2.8	9.7	12.2	11.3	12.4	382	311	262	238
Thailand	80	158	217	248	7.0	4.6	1.4	2.5	3.3	3.7	359	456	487	468
Timor-Leste														
Viet Nam	17	44	80	130	9.9	11.5	0.2	0.5	0.9	1.5	288	355	448	522
South and South-West Asia	**965**	**1 624**	**1 974**	**2 605**	**5.3**	**4.8**	**0.8**	**1.1**	**1.2**	**1.5**	**450**	**477**	**432**	**479**
Afghanistan														
Bangladesh	14	25	37	53	6.4	7.7	0.1	0.2	0.3	0.4	173	201	223	239
Bhutan														
India	582	972	1 165	1 626	5.3	5.3	0.7	0.9	1.0	1.3	551	536	463	437
Iran (Islamic Rep. of)	179	315	422	509	5.8	4.9	3.2	4.8	6.0	6.8	525	643	655	
Maldives														
Nepal	1	3	3	4	13.3	1.8	0.0	0.1	0.1	0.1	65	138	117	112
Pakistan	59	97	118	135	5.2	3.3	0.5	0.7	0.7	0.8	323	365	346	324
Sri Lanka	4	11	13	13	11.0	2.3	0.2	0.6	0.7	0.6	108	185	192	140
Turkey	127	201	216	266	4.7	2.9	2.4	3.2	3.2	3.7	290	321	277	291
North and Central Asia	**2 733**	**1 816**	**1 875**	**2 010**	**-4.0**	**1.0**	**12.7**	**8.3**	**8.6**	**9.1**	**1 270**	**1 252**	**943**	**820**
Armenia	20	3	4	4	-16.4	1.7	5.8	1.1	1.4	1.4	1 965	482	328	267
Azerbaijan	65	30	33	25	-7.5	-1.9	9.0	3.7	3.8	2.7	1 909	1 485	870	306
Georgia	33	5	4	5	-17.9	0.7	6.1	1.0	1.0	1.1	1 128	417	275	244
Kazakhstan	236	113	157	232	-7.1	7.5	14.6	7.8	10.4	14.6	2 040	1 404	1 192	1 303
Kyrgyzstan	22	4	5	7	-14.9	4.6	5.1	0.9	1.0	1.3	2 026	603	567	632
Russian Federation	2 179	1 506	1 516	1 581	-3.6	0.5	14.7	10.3	10.5	11.0	1 164	1 195	894	784
Tajikistan	11	2	2	3	-14.9	2.3	2.1	0.4	0.3	0.4	694	363	242	205
Turkmenistan	46	35	45	53	-2.5	4.1	12.5	7.9	9.5	10.4	2 041	2 008	1 994	1 423
Uzbekistan	120	118	108	100	-0.2	-1.6	5.8	4.7	4.1	3.6	2 918	2 922	2 058	1 274
Pacific	**283**	**370**	**403**	**414**	**2.7**	**1.1**	**13.8**	**16.0**	**16.4**	**15.5**	**586**	**553**	**513**	**464**
American Samoa														
Australia	260	339	369	383	2.7	1.2	15.2	17.6	18.0	17.1	639	599	557	502
Cook Islands														
Fiji														
French Polynesia														
Guam														
Kiribati														
Marshall Islands														
Micronesia (F.S.)														
Nauru														
New Caledonia														
New Zealand	23	31	34	31	2.8	0.0	6.9	8.0	8.2	7.1	363	359	324	290
Niue														
Northern Mariana Islands														
Palau														
Papua New Guinea														
Samoa														
Solomon Islands														
Tonga														
Tuvalu														
Vanuatu														
Asia and the Pacific	**8 014**	**9 305**	**12 051**	**15 203**	**1.5**	**5.0**	**2.5**	**2.5**	**3.1**	**3.7**	**730**	**607**	**599**	**579**
Developed countries	1 348	1 554	1 624	1 557	1.4	0.0	9.4	10.4	10.7	10.1	360	360	349	323
Developing countries	6 666	7 751	10 428	13 646	1.5	5.8	2.1	2.2	2.8	3.4	922	704	675	636
LLDC	534	318	367	439	-5.1	3.3	6.6	3.5	3.8	4.2	1 947	1 477	1 074	864
LDC	19	40	53	68	7.9	5.6	0.1	0.2	0.2	0.3	187	230	214	202
ASEAN	368	719	924	1 134	6.9	4.7	0.8	1.4	1.7	1.9	358	429	431	411
ECO	865	915	1 106	1 329	0.6	3.8	3.1	2.7	3.1	3.4	721	589	540	754
SAARC	659	1 109	1 336	1 830	5.3	5.1	0.6	0.8	0.9	1.2	483	484	425	404
Central Asia	554	310	359	428	-5.6	3.3	8.4	4.4	4.9	5.5	1 978	1 635	1 231	986
Pacific island dev. econ.														
Low income econ.	166	115	134	141	-3.6	2.1	0.8	0.5	0.5	0.5		660	538	416
Lower middle income econ.	1 032	1 599	1 908	2 513	4.5	4.6	0.8	1.0	1.1	1.4	526	512	455	425
Upper middle income econ.	5 173	5 507	7 820	10 316	0.6	6.5	3.4	3.3	4.5	5.8	1 170	853	829	777
High income econ.	1 643	2 084	2 189	2 233	2.4	0.7	8.4	10.1	10.4	10.4	367	374	351	331
Africa	**530**	**660**	**803**	**902**	**2.2**	**3.2**	**1.0**	**1.0**	**1.1**	**1.1**	**423**	**389**	**376**	**341**
Europe	**5 086**	**4 356**	**4 542**	**4 191**	**-1.5**	**-0.4**	**8.8**	**7.5**	**7.7**	**7.0**	**476**	**340**	**318**	**278**
Latin America and Carib.	**862**	**1 202**	**1 327**	**1 534**	**3.4**	**2.5**	**2.0**	**2.3**	**2.4**	**2.6**	**285**	**288**	**278**	**266**
North America	**5 302**	**6 231**	**6 331**	**5 905**	**1.6**	**-0.5**	**18.8**	**19.8**	**19.2**	**17.0**	**609**	**513**	**462**	**415**
World	**20 319**	**22 625**	**26 152**	**29 110**	**1.1**	**2.6**	**3.9**	**3.8**	**4.2**	**4.4**	**576**	**477**	**463**	**443**

F.1.3 Greenhouse gases emissions from agriculture

	Total greenhouse gas (GHG)			Methane (CH_4)			Nitrous oxide (N_2O)		
	Thousand tons of CO_2 equivalent								
	1990	2000	2010	1990	2000	2010	1990	2000	2010
East and North-East Asia	**578 616**	**647 680**	**715 130**	**319 427**	**345 450**	**329 278**	**259 190**	**302 230**	**385 852**
China	518 240	592 124	664 303	285 034	311 899	298 271	233 206	280 225	366 032
DPR Korea	9 523	5 288	4 595	3 814	3 117	3 327	5 710	2 172	1 268
Hong Kong, China									
Japan	25 975	22 883	21 481	15 780	14 013	13 026	10 195	8 871	8 455
Macao, China									
Mongolia	11 340	14 617	11 895	6 664	8 799	6 555	4 677	5 818	5 340
Republic of Korea	13 537	12 767	12 856	8 135	7 623	8 099	5 402	5 144	4 758
South-East Asia	**318 756**	**366 529**	**430 920**	**215 137**	**243 668**	**279 946**	**103 619**	**122 861**	**150 974**
Brunei Darussalam	74	108	149	11	15	18	63	94	130
Cambodia	11 453	12 961	17 126	9 541	10 550	14 007	1 912	2 411	3 119
Indonesia	120 482	130 061	152 708	65 109	70 468	80 710	55 373	59 593	71 998
Lao PDR	4 973	5 604	7 113	3 706	4 120	5 163	1 267	1 484	1 950
Malaysia	10 554	11 550	16 709	4 027	3 995	4 153	6 527	7 555	12 556
Myanmar	38 185	48 332	60 669	28 926	36 598	46 913	9 259	11 734	13 756
Philippines	37 696	46 156	50 162	30 334	37 084	39 887	7 363	9 071	10 275
Singapore	101	51	86	52	18	47	49	33	39
Thailand	54 599	54 687	65 982	42 375	41 445	47 200	12 225	13 242	18 782
Timor-Leste	357	531	721	258	378	526	99	154	195
Viet Nam	40 281	56 488	59 495	30 799	38 997	41 321	9 483	17 491	18 175
South and South-West Asia	**727 296**	**810 155**	**934 795**	**519 615**	**554 199**	**612 407**	**207 681**	**255 956**	**322 388**
Afghanistan	6 792	9 047	10 699	4 458	6 228	7 523	2 334	2 819	3 177
Bangladesh	56 512	63 048	73 870	41 430	43 428	50 241	15 082	19 620	23 628
Bhutan	518	501	490	429	417	398	88	84	92
India	482 130	530 953	609 102	357 006	376 449	403 654	125 124	154 504	205 448
Iran (Islamic Rep. of)	36 306	42 421	42 501	20 862	23 445	24 389	15 444	18 976	18 112
Maldives									
Nepal	15 260	17 233	19 615	11 828	13 368	15 290	3 432	3 865	4 325
Pakistan	73 902	96 128	130 935	50 247	63 160	85 125	23 655	32 968	45 809
Sri Lanka	6 050	4 993	5 865	4 423	3 160	3 857	1 627	1 833	2 009
Turkey	49 827	45 832	41 717	28 933	24 545	21 930	20 894	21 287	19 787
North and Central Asia		**140 677**	**147 577**		**84 577**	**86 501**		**56 100**	**61 077**
Armenia		1 334	1 560		935	1 082		399	478
Azerbaijan		5 584	7 695		3 960	5 403		1 624	2 292
Georgia		3 324	2 772		2 252	1 999		1 071	773
Kazakhstan		11 237	16 792		7 186	10 923		4 051	5 869
Kyrgyzstan		2 902	3 702		1 845	2 404		1 057	1 298
Russian Federation		92 665	78 633		55 047	43 199		37 618	35 434
Tajikistan		2 527	4 745		1 742	3 090		785	1 655
Turkmenistan		5 153	8 246		3 127	5 591		2 026	2 655
Uzbekistan		15 951	23 432		8 483	12 809		7 468	10 622
Pacific	**154 669**	**151 538**	**135 554**	**88 846**	**85 787**	**75 657**	**65 822**	**65 750**	**59 897**
American Samoa	7	7	7	6	6	6	1	1	1
Australia	109 424	107 026	90 467	63 541	60 951	49 780	45 883	46 076	40 687
Cook Islands	12	25	20	10	22	17	2	3	2
Fiji	845	934	890	509	593	567	336	341	323
French Polynesia	41	54	43	29	36	29	12	18	14
Guam	4	5	5	2	3	3	2	2	2
Kiribati	7	9	11	5	6	7	2	3	4
Marshall Islands									
Micronesia (F.S.)		49	50		35	36		14	14
Nauru	2	2	2	1	1	2			
New Caledonia	280	248	216	180	161	140	99	87	76
New Zealand	38 256	37 047	37 345	23 446	22 572	23 439	14 810	14 475	13 906
Niue	1	1	2	1	1	1			
Northern Mariana Islands									
Palau									
Papua New Guinea	5 171	5 474	5 711	656	930	1 072	4 515	4 543	4 639
Samoa	163	183	187	132	129	149	31	54	38
Solomon Islands	62	65	71	48	51	55	14	14	16
Tonga	83	80	101	66	63	63	17	17	38
Tuvalu	7	8	8	6	7	7	1	1	1
Vanuatu	304	321	419	207	220	284	97	102	136
Asia and the Pacific	**2 175 729**	**2 116 579**	**2 363 977**	**1 365 217**	**1 313 682**	**1 383 788**	**810 512**	**802 897**	**980 188**
Developed countries	173 656	166 957	149 294	102 768	97 535	86 246	70 888	69 422	63 048
Developing countries	1 605 682	1 949 622	2 214 683	1 040 258	1 216 147	1 297 543	565 424	733 475	917 140
LLDC		91 691	115 985		60 210	76 232		31 481	39 753
LDC	134 592	157 844	191 000	100 975	115 499	140 563	33 618	42 344	50 438
ASEAN	318 400	365 998	430 199	214 880	243 290	279 420	103 520	122 708	150 779
ECO	166 827	236 781	290 465	104 500	143 720	179 188	62 327	93 061	111 277
SAARC	641 163	721 902	850 577	469 821	506 209	566 088	171 342	215 693	284 489
Central Asia		48 012	68 944		29 530	43 301		18 482	25 643
Pacific island dev. econ.	6 989	7 464	7 742	1 859	2 264	2 438	5 129	5 199	5 303
Low income econ.	137 725	161 338	195 021	99 997	116 876	142 794	37 728	44 462	52 227
Lower middle income econ.	784 364	913 755	1 063 689	550 597	616 729	685 318	233 767	297 026	378 371
Upper middle income econ.		861 268	942 594		474 662	461 073		386 606	481 521
High income econ.	187 694	180 189	162 649	111 178	105 390	94 583	76 515	74 799	68 066
Africa	**381 905**	**462 604**	**580 813**	**218 466**	**263 883**	**330 615**	**163 439**	**198 721**	**250 198**
Europe	**518 198**	**501 154**	**456 765**	**285 248**	**269 219**	**236 048**	**232 950**	**231 934**	**220 717**
Latin America and Carib.	**672 875**	**726 137**	**853 151**	**451 319**	**479 334**	**551 364**	**221 555**	**246 803**	**301 787**
North America	**375 309**	**392 773**	**403 642**	**192 118**	**197 926**	**197 814**	**183 191**	**194 847**	**205 828**
World	**4 149 586**	**4 227 725**	**4 689 940**	**2 523 533**	**2 536 290**	**2 714 324**	**1 626 053**	**1 691 435**	**1 975 616**

F.1.4 Other pollutants

	Consumption of ozone-depleting substances		Methane (CH_4)		Sulphur dioxide (SO_2)		Nitrous oxide (N_2O)		Concentration of PM10 in urban area		Biochemical oxygen demand	
	Grams per capita	Grams per 1,000 dollars GDP in 2005 PPP	Thousand tons						Micrograms per m^3		Tons per day	
	2010	2010	2000	2008	2000	2008	2000	2008	2000	2009	Earliest	Latest
East and North-East Asia	**15.5**	**1.7**	**54 817**	**77 999**	**25 652**	**44 481**	**1 576**	**1 925**	**78**	**55**		
China	15.7	2.3	49 686	73 201	19 837	39 903	1 383	1 764	88	60		9 429 (07)
DPR Korea	3.8		825	891	799	733	11	11	92	56		
Hong Kong, China			128	142	222	366	2	1				
Japan	4.9	0.2	2 262	1 952	3 035	2 324	104	91	33	25	1 455 (94)	1 127 (05)
Macao, China			5	7	18	20	0	0				
Mongolia	0.6	0.2	439	327	75	82	16	13	124	101		9 (07)
Republic of Korea	43.6	1.6	1 472	1 480	1 667	1 052	60	45	45	33	367 (90)	320 (06)
South-East Asia	**4.7**	**1.0**	**23 972**	**30 329**	**4 389**	**5 357**	**660**	**711**	**83**	**48**		
Brunei Darussalam	17.2	0.4	185	222	7	9	1	1	63	48		
Cambodia	0.9	0.5	714	1 555	19	96	11	49	48	37	4 (93)	
Indonesia	1.8	0.5	8 097	10 283	1 652	2 433	306	329	120	68	722 (98)	883 (06)
Lao PDR	0.4	0.2	344	397	16	16	11	11	55	45	4 (99)	
Malaysia	19.2	1.4	1 396	1 681	295	407	45	47	25	19	184 (00)	208 (06)
Myanmar	0.1		3 188	3 643	124	78	101	77	75	41		
Philippines	2.4	0.7	2 377	2 685	654	702	40	42	42	17	169 (96)	145 (05)
Singapore	40.8	0.8	80	111	381	216	21	6	34	23	33 (91)	38 (07)
Thailand	16.4	2.1	3 979	4 651	921	913	60	69	70	53	369 (96)	581 (06)
Timor-Leste	0.5	0.3	21	33	0	0	1	1				
Viet Nam	3.5	1.2	3 592	5 069	320	487	64	80	67	50	141 (98)	545 (07)
South and South-West Asia	**1.9**	**0.5**	**45 019**	**51 758**	**9 753**	**12 213**	**1 078**	**1 182**	**101**	**64**		
Afghanistan	0.9	0.7	447	534	24	23	11	12	46	32		236 (02)
Bangladesh	0.8	0.6	4 250	4 659	81	100	72	82	162	121	251 (95)	
Bhutan	0.4	0.1	49	57	4	3	1	1	33	21		
India	1.6	0.5	26 749	28 875	5 836	8 593	696	764	92	57		
Iran (Islamic Rep. of)	5.7		3 799	5 216	1 280	1 024	82	87	93	55	132 (94)	161 (05)
Maldives	12.3	1.7	2	2	1	3	0	0	33	30		
Nepal	0.0	0.0	1 010	1 098	24	21	14	15	50	30	26 (96)	27 (02)
Pakistan	1.5	0.6	5 577	7 174	828	914	90	104	177	101		154 (06)
Sri Lanka	0.7	0.2	457	541	85	101	7	7	97	71		266 (06)
Turkey	8.4	0.7	2 679	3 602	1 592	1 431	107	111	53	37	176 (92)	346 (06)
North and Central Asia	**5.3**	**0.5**	**27 937**	**32 735**	**9 338**	**9 129**	**443**	**369**	**36**	**20**		
Armenia	2.4	0.5	122	154	3	5	1	2	83	61		
Azerbaijan	0.0	0.0	474	807	312	119	7	8	97	29	41 (95)	20 (07)
Georgia	1.3	0.3	197	224	10	6	8	8	68	54		
Kazakhstan	6.9	0.6	1 847	3 027	2 317	2 891	48	53	27	17	124 (98)	97 (07)
Kyrgyzstan	0.8	0.4	166	174	24	24	5	4	29	35	29 (92)	12 (07)
Russian Federation	7.3	0.5	22 189	24 360	6 437	5 815	328	232	27	16	1 521 (99)	1 382 (07)
Tajikistan	0.4	0.2	157	215	6	14	4	5	49	30	29 (90)	13 (07)
Turkmenistan	1.9	0.3	1 011	1 566	6	5	10	17	80	41		
Uzbekistan	0.0	0.0	1 773	2 209	223	251	33	38	86	37		
Pacific	**0.6**	**0.0**	**7 604**	**7 374**	**2 720**	**3 110**	**296**	**244**	**19**	**14**		
American Samoa			1	1			0	0				
Australia	-0.3	0.0	6 102	5 821	2 609	2 988	244	186	18	14		
Cook Islands	4.9		0.2	0.2	0.3	0.1	0.0	0.0				
Fiji	10.7	2.6	34	34	2	3	1	1	33	19		6 (04)
French Polynesia			4	4	5	5	0.1	0.1				
Guam			3	3	0	0	0	0				
Kiribati	1.0	0.5	1	1	0.0	0.1	0	0				
Marshall Islands	3.8		0.3	0.3			0	0				
Micronesia (F.S.)	1.9	0.6	1	1			0	0				
Nauru	0.0		0.1	0.1			0	0				
New Caledonia			10	10	20	15	0.3	0.3	90	53		
New Zealand	2.7	0.1	1 266	1 313	49	47	37	43	16	12	47 (90)	62 (07)
Niue	0.0		0	0			0	0				
Northern Mariana Islands			0.4	1			0	0				
Palau	9.8	0.8	0.1	0.1			0	0				
Papua New Guinea	0.5	0.2	95	95	33	47	5	4	31	16		
Samoa	1.6	0.4	6	6	1	1	0.1	0.1				
Solomon Islands	4.4	1.8	66	68	1	2	8	8	32	31		
Tonga	1.0	0.2	3	3	0.1	0.0	0.1	0.1			0.20 (91)	0.37 (04)
Tuvalu	10.2		0.2	0.2			0	0				
Vanuatu	2.1	0.5	13	13	0.5	0.5	0.4	0.4	26	14		
Asia and the Pacific	**7.6**	**1.2**	**159 348**	**200 195**	**51 852**	**74 290**	**4 053**	**4 430**	**81**	**53**		
Developed countries	4.1	0.1	9 629	9 086	5 693	5 360	385	320	30	22		
Developing countries	7.7	1.4	149 719	191 109	46 159	68 930	3 668	4 110	85	56		
LLDC	1.2	0.3	7 839	10 565	3 034	3 455	159	180	63	34		
LDC	0.6	0.5	10 108	12 065	293	340	228	256	118	83		
ASEAN	4.8	1.0	23 950	30 296	4 389	5 357	659	710	83	48		
ECO	3.4	0.6	17 930	24 524	6 611	6 697	395	440	101	60		
SAARC	1.5	0.5	38 541	42 940	6 882	9 757	889	984	107	68		
Central Asia	1.8	0.3	5 748	8 376	2 901	3 315	115	137	65	33		
Pacific island dev. econ.	1.8	0.7	236	240	61	74	15	14	37	21		
Low income econ.	0.9	0.5	10 756	12 770	1 100	1 090	227	255	111	78		
Lower middle income econ.	1.7	0.5	50 013	58 248	9 742	13 646	1 287	1 412	100	60		
Upper middle income econ.	14.2	1.9	87 062	118 112	32 998	52 511	2 069	2 389	74	52		
High income econ.	14.2	0.5	11 517	11 065	8 012	7 043	470	374	34	25		
Africa	**2.5**	**0.9**	**36 037**	**47 516**	**6 031**	**7 130**	**1 340**	**2 094**	**81**	**50**		
Europe			**35 042**	**30 972**	**14 471**	**10 344**	**1 379**	**1 407**	**27**	**19**		
Latin America and Carib.	**8.9**	**0.9**	**39 424**	**44 373**	**9 178**	**8 319**	**1 211**	**1 349**	**41**	**30**		
North America	**6.9**	**0.2**	**31 373**	**31 224**	**16 291**	**10 809**	**1 243**	**1 175**	**24**	**18**		
World	**7.2**	**0.9**	**308 545**	**363 886**	**103 192**	**116 979**	**9 338**	**10 574**	**64**	**43**		

F.2. Energy supply and use

Energy products and services are essential for mining, agriculture, manufacturing, transport and all other forms of economic activity including by households and small businesses. Disruptions in the availability or price of energy can have serious consequences for development. A lack of access to affordable sources of energy can be a critical barrier to inclusive and sustainable development.

In terms of global energy supply, 2011 and 2012 were eventful years. The developments in Northern Africa and in the Middle East spurred concerns about political stability and market speculation, increasing the volatility of energy markets. The earthquake and tsunami in Japan also had immediate implications, both in Japan and around the world, for nuclear power and other sources of energy.

Despite crises and disruptions, the Asian and Pacific region continued to be a major contributor to growth in global energy supply and use. Relatively low levels of per capita energy consumption in many parts of the region indicate a likelihood for further increases in energy supply and use in the future.

Energy consumption in Asia and the Pacific has been rising continuously during the last decade. One of the contributing factors is the shift of energy intensive manufacturing from industrialized countries to Asia. The region's share of global primary energy supply[1] rose from 38 per cent to 47 per cent during 2000-2010. Almost 55 per cent of the region's energy supply in 2010 was attributed to East and North-East Asia alone. This subregion witnessed consistent growth in high-energy demand at an average of 5.8 per cent per annum between 2000 and 2010 (see figures F.2-1 and F.2-2).

Accounting for roughly half of the world's production of primary energy, the Asian and Pacific region is endowed with large stocks of energy resources to help meet the growing

Figure F.2-1
Total primary energy supply, Asia and the Pacific and other world regions, 2000 and 2010

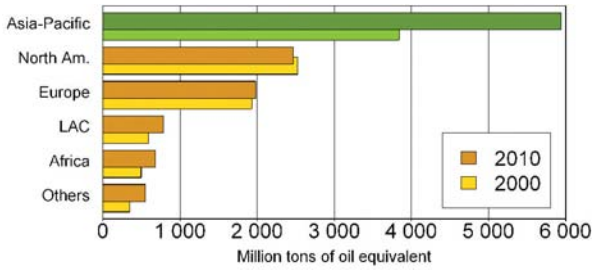
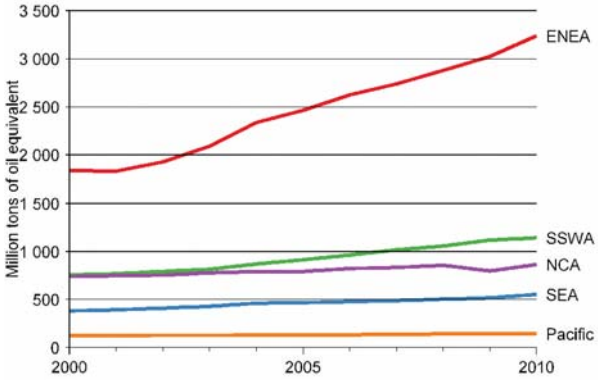


Figure F.2-2
Total primary energy supply, Asian and Pacific subregions, 2000-2010



demand. However, these energy resources are spread unevenly. For example, East and North-East Asia accounted for the highest share in production with 2,430 million tons of oil equivalent (MTOE) in 2010, whereas the Pacific had a very small share and only 327 MTOE. In 2011, the Russian Federation was the region's largest gas and oil producer, accounting for 20.0 per cent and 12.7 per cent of the global totals, respectively. China was the source of almost half of the world's production of coal in 2011, followed by the United States of America at 12.9 per cent and India at 7.5 per cent.[2]

While global electricity production increased by an average of 3.6 per cent annually between 2001 and 2010, the figure for Asia and the Pacific was 6.3 per cent. Led by China, Japan, the Russian Federation and India, the region accounted for 45 per cent of the global electricity production in 2010. East and North-East Asia generated

[1] Primary energy includes hard coal; lignite; peat; crude oil; natural gas liquids; natural gas; combustible renewables; nuclear, hydro, geothermal and solar power; and heat pumps.

[2] International Energy Agency, *Key World Energy Statistics 2012* (Organisation for Economic Co-operation and Development/International Energy Agency, Paris, 2012).

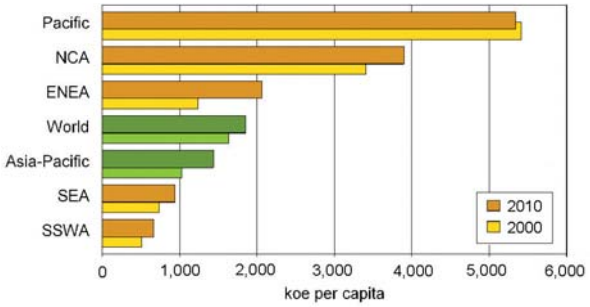
more than 60 per cent (5,857 terawatt-hours, or TWh) of the electricity produced in the region, followed by South and South-West Asia (1,555 TWh) and North and Central Asia (1,252 TWh).

In 2010, renewable energy (including large hydro) accounted for about 12 per cent of the total primary energy supply (TPES) in the region; this was much less than in Africa, where the proportion was 40 per cent, and less than in Latin America and the Caribbean, with 26 per cent. Within the region, South-East Asia and South and South-West Asia led this indicator with 27 per cent and 22 per cent of their respective energy supply stemming from renewable sources. For electricity from renewable energy sources, the Asian and Pacific region led the world generating 1,522 TWh of its electricity from renewable energy sources in 2010. But this amounted to only 15.8 per cent of the region's total electricity, which is below the world average of 19.4 per cent.

Factors such as population size and patterns of economic production and consumption must also be taken into consideration when reviewing energy supply and use patterns.

With about 60 per cent of the world's total population, or 4 billion people, Asia and the Pacific has the third lowest per capita TPES (1,438 kg of oil equivalent, or koe) in the world after Africa (737 koe) and Latin America and the Caribbean (1,331 koe). There are also disparities within the region in per capita energy supplies. The Pacific subregion, which includes Australia and New Zealand,[3] accounts for less than 1 per cent of the region's population and has the highest per capita energy supply at 5,339 koe, second only to North America. At the other end of the spectrum, South and South-West Asia, which is home to nearly half the region's population, has the lowest per capita energy supply at 662 koe. A rising trend in per capita energy supply can be found in East and North-East Asia over the past two decades (see figure F.2-3), particularly in China.

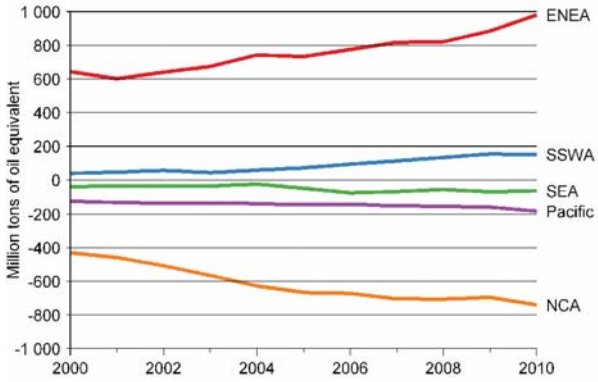
Figure F.2-3
Total primary energy supply per capita, world, Asia and the Pacific, and its subregions, 2000 and 2010



The need for regional trade in energy products is determined by growing energy demand, especially in rapidly developing countries in the Asian and Pacific region, and the uneven geographical distribution of energy resources.

The balance between energy imports and exports in the region is fairly stable over time. However, there are wide variations between two subregions in particular: North and Central Asia is the largest energy exporter, and East and North-East Asia is the largest energy importer (see figure F.2-4), which demonstrates the uneven distribution of energy and thus a dependency on international trade.

Figure F.2-4
Net energy imports, Asian and Pacific subregions, 2000-2010



[3] For the Pacific subregion, figures are available for only Australia and New Zealand.

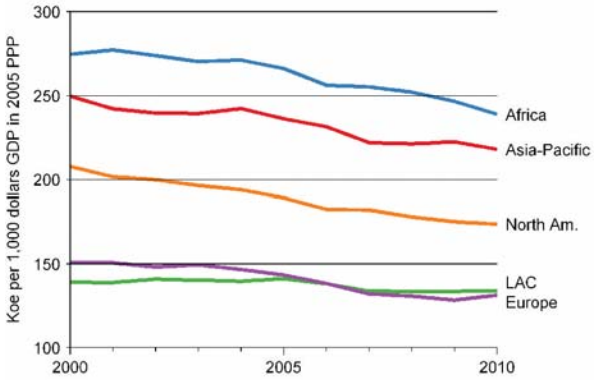
Options for trade in oil, gas and electricity, though currently limited by infrastructure and other constraints, are increasingly being investigated. At the subregional level in particular, electricity is viewed as a promising export item with potential benefits in the forms of revenue generation and socio-economic development. South-East Asia is leading large-scale efforts to promote energy trade with the establishment of the Trans-ASEAN Gas Pipeline project and the implementation of the ASEAN Power Grid.

The Asian and Pacific region still has much to gain from improving energy efficiency.

The energy intensity of an economy is used as an indicator of economic competitiveness and can be calculated by dividing primary energy supply by GDP. It is important to note, however, that energy intensity is influenced by various factors, including population, climate, the structure and connectedness of the economy, and the infrastructure for energy production and consumption.

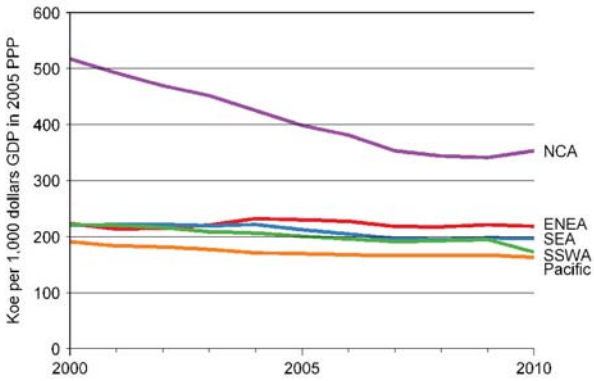
As shown in figure F.2-5, the energy intensity of the region is quite high, 66 per cent greater than Europe, which has the lowest energy intensity among all regions. This could be due to the relatively high share (36 per cent) of end-use energy consumption in the industrial sector in Asia and the Pacific compared with that in other regions of the world. High industrial end-use could signify a higher level of activities such as mining, manufacturing or the production of goods, or relatively poor industrial energy efficiency, or a combination of both.

Figure F.2-5
Energy intensity, Asia and the Pacific and other world regions, 2000-2010



Within Asia and the Pacific, North and Central Asia continues to be the most energy-intensive subregion, at 353 koe per unit of GDP in 2010. While ageing equipment and outdated technology contribute to significant inefficiencies in the energy sector, the subregion has made considerable progress over the past two decades by implementing measures to improve energy efficiency (see figure F.2-6), although energy intensity for the subregion has begun to increase again (by 3.5 per cent) in 2009 and 2010.

Figure F.2-6
Energy intensity, Asian and Pacific subregions, 2000-2010



Box F.2-1

Access to modern energy services and human development

Despite the considerable progress made in recent years, the Asian and Pacific region continues to have a large number of people living without access to modern energy services. With less than 400 kilowatt-hours (kWh) per capita, annual household electricity consumption in Asia and the Pacific is the second lowest among the world's regions, after Africa (200 kWh per capita).

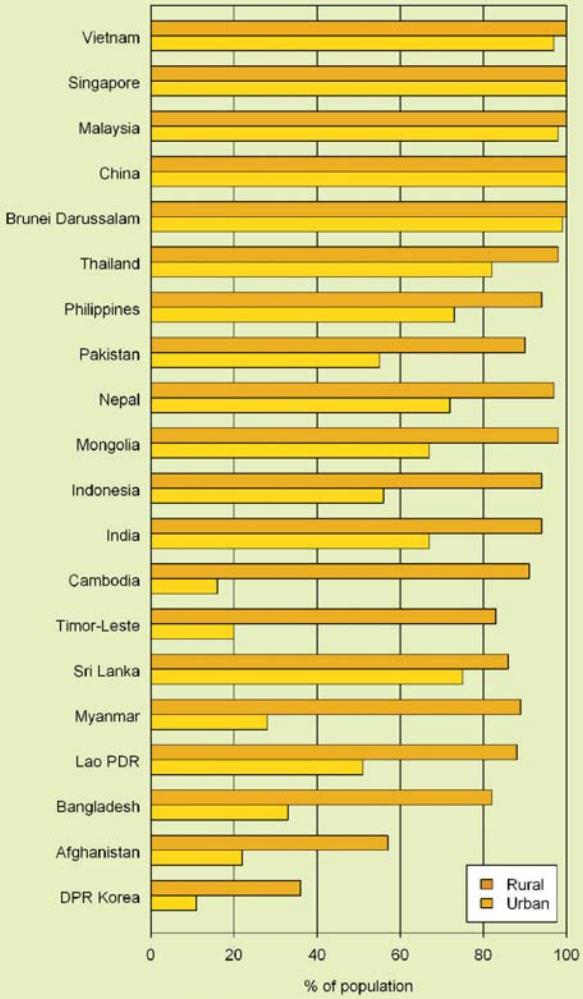
Globally, nearly 1.3 billion people remain without access to electricity. Two thirds of those people live in just 10 countries, 4 of which are in the Asian and Pacific region: Bangladesh, India, Indonesia and Pakistan.[a]

Rural areas have lower electrification rates as many such areas are remote and hence inaccessible for grid extension (see following figure). It is estimated that over 60 per cent of all future capacity-addition efforts will be focused on mini-grids and off-grid connections. In this context, the role of renewable energy, by nature apt for such solutions, is vital.[b]

The World Health Organization estimates that more than 1.45 million people die prematurely each year from indoor air pollution caused by burning solid fuels (biomass) with insufficient ventilation.[a] This makes the number of premature deaths from indoor air pollution greater than the number of premature deaths from malaria or tuberculosis.

Globally, 2.6 billion people, and 1.8 billion people in the region, use solid fuels (biomass) for cooking, which is a proxy indicator used by WHO for indoor air pollution. Three Asian countries, Bangladesh, China and India, account for more than half of this number. The two succeeding charts[c] show a significant difference between the types of energy used for cooking in urban areas and rural areas, which show that while urban households have access to relatively safe cooking technologies, their rural counterparts in the region are more likely to be exposed to higher health hazards.

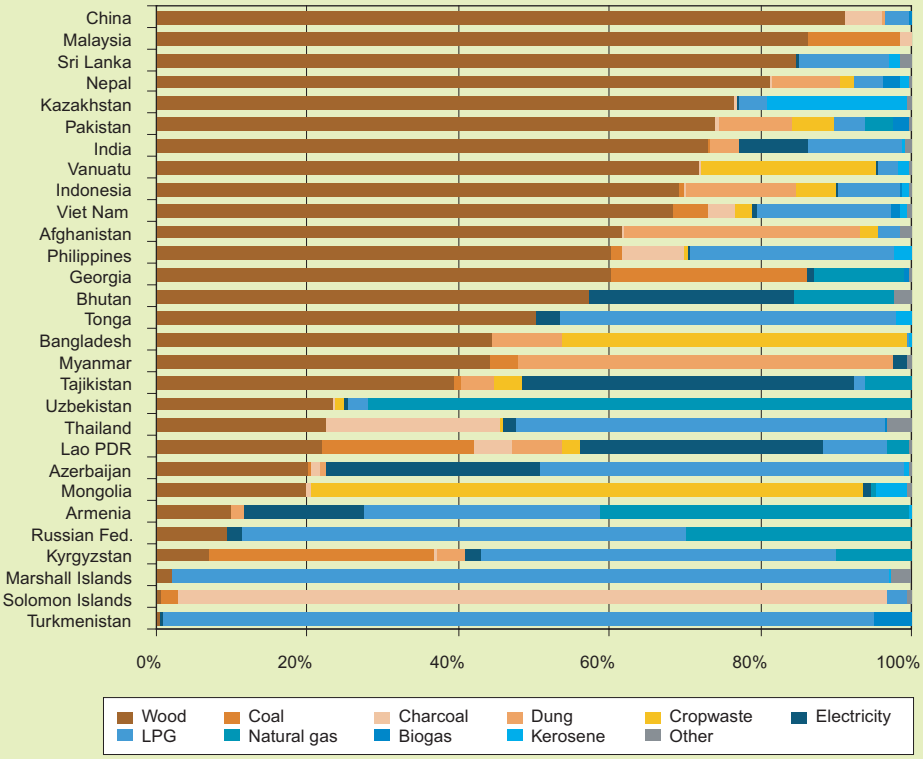
Electrification rates, Asia and the Pacific, rural and urban areas, 2010



Source: International Energy Agency, *World Energy Outlook 2012* (Organisation for Economic Co-operation and Development/ International Energy Agency, Paris, 2012). Available from www.worldenergyoutlook.org/resources/energydevelopment/globalstatusofmodernenergyaccess/#d.en.8609.

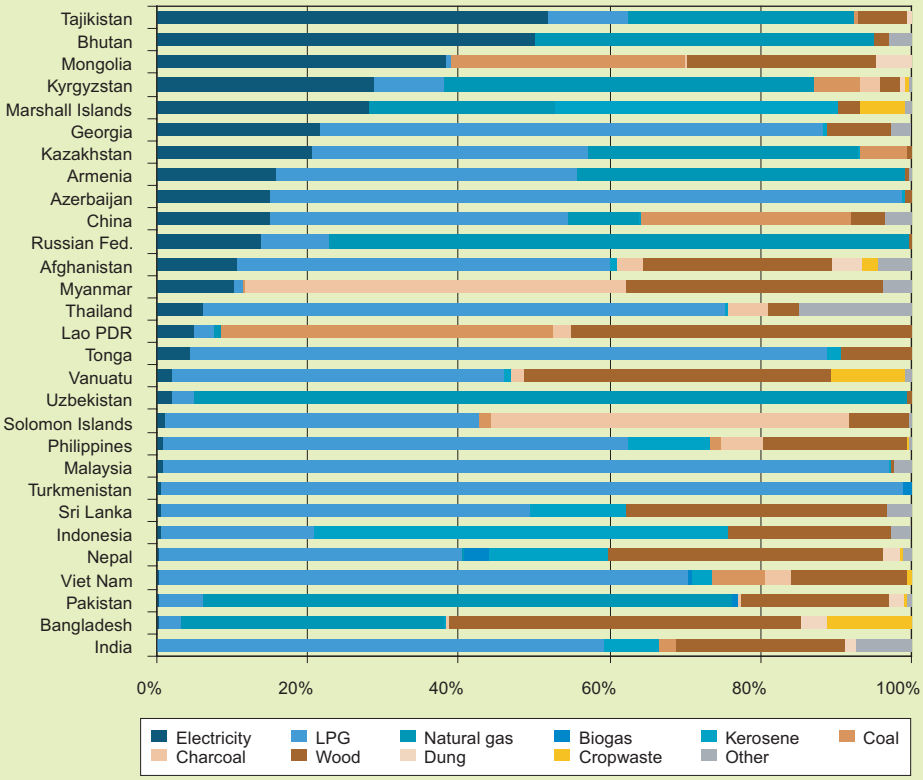
[a] International Energy Agency, *World Energy Outlook 2012* (Organisation for Economic Co-operation and Development/International Energy Agency, Paris, 2012). Available from www.worldenergyoutlook.org/resources/energydevelopment/globalstatusofmodernenergyaccess/#d.en.8609.
[b] DB Climate Change Advisors, Deutsche Bank Group, "GET FiT Plus: de-risking clean energy business models in a developing country context" (April 2011). Available from http://europa.eu/epc/pdf/workshop/background_get_fit_plus_final_040711_en.pdf.
[c] World Health Organization, WHO Household Energy Database. Available from www.who.int/indoorair/health_impacts/he_databasecont/en/index.html.

Cooking fuels used by rural populations in Asia and the Pacific, 2010



Source: World Health Organization, WHO Household Energy Database. Available from www.who.int/indoorair/health_impacts/he_databasecont/en/index.html.

Cooking fuels used by urban populations in Asia and the Pacific, 2010



Source: World Health Organization, WHO Household Energy Database. Available from www.who.int/indoorair/health_impacts/he_databasecont/en/index.html.

Box F.2-2
Sustainable energy for all

The year 2012 was significant in terms of global action in the area of energy.

At the United Nations Conference on Sustainable Development (Rio+20), Member States recognized the critical role that energy plays in the development process, emphasizing that access to sustainable modern energy services contributes to poverty eradication, saves lives, improves health and helps provide for basic human needs.[a]

In 2012, the United Nations General Assembly declared 2014-2024 the Decade of Sustainable Energy for All,[b] recognizing that "…access to modern affordable energy services in developing countries is essential for the achievement of the internationally agreed development goals, including the Millennium Development Goals, and sustainable development, which would help to reduce poverty and to improve the conditions and standard of living for the majority of the world's population." The Secretary-General launched the initiative "Sustainable Energy for All" to mobilize action from all sectors of society in support of three interlinked objectives to be achieved by 2030:

- To provide universal access to modern energy services
- To double the global rate of improvement in energy efficiency
- To double the share of renewable energy in the global energy mix.

[a] See General Assembly resolution 66/288, annex, para. 125.
[b] See General Assembly resolution 67/215.

Further reading

BP. *BP Statistical Review of World Energy 2013.* 2013. Available from www.bp.com/content/dam/bp/pdf/statistical-review/statistical_review_of_world_energy_2013.pdf.

ESCAP. *Growing Together: Economic Integration for an Inclusive and Sustainable Asia-Pacific Century.* Bangkok, 2012. Available from www.unescap.org/pdd/publications/themestudy2012/themestudy2012-full.pdf.

International Energy Agency. *World Energy Outlook 2012.* Paris: Organisation for Economic Co-operation and Development/International Energy Agency, 2012. Available from www.worldenergyoutlook.org/publications/weo-2012/.

Technical notes

Glossary

Total primary energy supply (TPES): Composed of production + imports – exports – international marine bunkers – international aviation bunkers ± stock changes. TPES includes fuels such as coal and gas that are subsequently transformed into other energy forms, such as electricity. For the world total, international marine bunkers and international aviation bunkers are not subtracted from TPES.

Renewable energy sources: Renewable energy is derived from natural processes (such as sunlight and wind) that are replenished at a faster rate than they are consumed. Renewables include the primary energy equivalent of hydro (excluding pumped storage), geothermal, solar, wind, tide and wave. They also include energy derived from solid biomass, biogasoline, biodiesel, other liquid biofuels, biogas, industrial waste and municipal waste.

Indicators

TPES (MTOE, koe per capita, percentage change per capita per annum, koe per 1,000 dollars GDP in 2005 PPP, percentage change per 1,000 GDP per annum)

TPES per GDP is often referred to as the overall "energy intensity" of an economy. **Indicator calculations:** Per capita figures are based on population figures (WPP2012). Per GDP figures are based on GDP in 2005 PPP (WDI). **Aggregate calculations:** Sum of individual country values (MTOE); weighted averages using total population (WPP2012) or GDP in 2005 PPP dollars as weight (koe per capita, koe per 1,000 dollars GDP in 2005 PPP); average annual growth of aggregate values (percentage change per capita per annum, percentage change per 1,000 GDP per annum). Note that, for the world total, international marine bunkers and international aviation bunkers are not subtracted from TPES. Missing data are not imputed.

Total final energy consumption (MTOE)

The sum of consumption by the different end-use sectors. Backflows from the petrochemical industry are not included in final consumption. **Aggregate calculations:** Sum of individual country values. Missing data are not imputed.

Final energy consumption by sector: industry, transport and residential use (percentage of total final energy consumption)

Industry: Specified under the following subsectors according to International Standard Industrial Classification, or ISIC (except energy used for transport by industry, which is reported under transport): iron and steel industry (ISIC Group 241 and Class 2431); chemical and petrochemical industry (ISIC Divisions 20 and 21), excluding petrochemical feedstocks; non-ferrous metals basic industries (ISIC Group 242 and Class 2432); non-metallic minerals such as glass, ceramic and cement (ISIC Division 23); transport equipment (ISIC Divisions 29 and 30); machinery, comprising fabricated metal products, machinery and equipment other than transport equipment (ISIC Divisions 25 to 28); mining (excluding fuels) and quarrying (ISIC Divisions 07 and 08 and Group 099); food and tobacco (ISIC Divisions 10 to 12); paper, pulp and printing (ISIC Divisions 17 and 18); wood and wood products, other than pulp and paper (ISIC Division 16); construction (ISIC Divisions 41 to 43); textile and leather (ISIC Divisions 13 to 15); non-specified – any manufacturing industry not included above (ISIC Divisions 22, 31 and 32). **Transport:** Encompasses all fuels used for transport (ISIC Divisions 49 to 51), including transport in industry and covering domestic aviation, road, rail, pipeline transport, domestic navigation and non-specified transport. Fuel used in ocean, coastal and inland fishing (included under fishing) and military consumption (included in other non-specified) are excluded from transport. International marine and international aviation bunkers are also included here for world total. **Residential:** Includes consumption by households and excludes fuels used for transport. Includes households with employed persons (ISIC Rev. 4 Divisions 97 and 98), a small part of total residential consumption. **Aggregate calculations:** Sum of individual country values of the sector divided by the sum of individual country values of total final consumption. Missing data are not imputed.

TPES balance: total, production, imports and exports (MTOE)

Total: TPES, as defined above. Production plus imports minus exports are the main elements of the TPES balance. **Production:** Production of primary energy, that is: hard coal; lignite; peat; crude oil; natural gas liquids; natural gas; combustible renewables and waste; nuclear, hydro, geothermal, solar power; and the heat from heat pumps that is extracted from the ambient environment. Production is calculated after removal of impurities (for example, sulphur from natural gas). **Imports and exports:** Comprises amounts of energy, including fuels and electricity, that have crossed the national territorial boundaries of a country coming in or going out, whether or not customs clearance has taken place. **Aggregate calculations:** Sum of individual country values. Missing data are not imputed.

Gross electricity production (million kWh, percentage change per annum) [TWh=million kWh/1,000]

Measured at the terminals of all alternator sets in a station; it therefore includes the energy taken by station auxiliaries and losses in transformers that are considered integral parts of the station. Production at hydro stations includes production from pumped storage plants, without deduction of electric energy absorbed by pumping. **Aggregate calculations:** Sum of individual country values (TWh); average annual growth of aggregate values (percentage change per annum). Missing data are not imputed.

Household electricity consumption (kWh per capita, percentage change per annum)

Annual electricity consumption by households. **Indicator calculations:** Per capita figures are based on population figures (WPP2012). **Aggregate calculations:** Weighted averages using total population (WPP2012) as weight (kWh per capita); average annual growth of aggregate values (percentage change per annum). Missing data are not imputed.

Access to electricity (percentage of population)

Percentage of the population with access to electricity. Electrification data are collected from industry, national surveys and international sources. **Aggregate calculations:** Weighted averages using population (WPP2012) as weight. Missing data are not imputed.

Population without electricity (millions)

Number of the population without electricity. **Aggregate calculations:** Sum of individual country values. Missing data are not imputed.

Renewable energy production, total (MTOE, percentage of TPES)

Renewable energy includes the primary energy equivalent of hydro (excluding pumped storage), geothermal, solar, wind, tide and wave. It also includes solid biomass, biogasoline, biodiesel, other liquid biofuels, biogas and municipal waste. **Indicator calculations:** The proportion of renewable energy production to TPES expressed as a percentage. **Aggregate calculations:** Sum of individual country values (MTOE); sum of individual country values of total renewable energy divided by the sum of individual country values of TPES (percentage of TPES). Missing values are not imputed.

Electricity generated from renewable energy sources (terawatt-hours or TWh, percentage of total energy sources)

The total number of TWh generated from all renewable energy sources. **Indicator calculations:** The proportion of electricity generated (TWh) from all renewable energy sources to the electricity generated (TWh) from all energy sources expressed as a percentage. **Aggregate calculations:** Sum of individual country values (TWh); sum of individual country values of electricity generated from renewables divided by the sum of individual country values of electricity generated from the total energy sources (percentage of total energy sources). Missing values are not imputed.

Sources

Source of energy supply data use except access to electricity and population without electricity: International Energy Agency (IEA). Countries report to IEA through the Organisation for Economic Co-operation and Development (OECD) member site and the non-OECD government site. The IEA secretariat does not adjust the data. For final consumption, energy balance, primary energy supply and electricity data, IEA notes that energy statistics at the national level are often collected using criteria and definitions that differ, sometimes considerably, from those of international organizations. The IEA secretariat has identified such differences and, where possible, adjusted the data to meet international definitions. **Data obtained:** 25 January 2013.

Source of access to electricity and population without electricity data: IEA, *World Energy Outlook 2012*. **Data obtained:** 9 June 2013.

Source of renewable energy data: IEA, "World: renewable and waste energy supply (Ktoe)", IEA Renewables Information Statistics Database (2012). **Data obtained:** 23 April 2013.

F.2.1 Energy supply and intensity

	Total primary energy supply (TPES)											
	Million tons of oil equivalent		Kg of oil equivalent per capita		% change per capita per annum		Kg of oil equivalent per 1,000 dollars GDP in 2005 PPP				% change per 1,000 GDP per annum	
	2000	2010	2000	2010	90-00	00-10	1990	2000	2005	2010	90-00	00-10
East and North-East Asia	**1 838**	**3 238**	**1 238**	**2 063**	**0.8**	**5.2**	**273**	**224**	**230**	**219**	**-2.0**	**-0.2**
China	1 095	2 456	855	1 806	0.7	7.8	691	325	316	269	-7.3	-1.9
DPR Korea	20	19	863	756	-3.2	-1.3						
Hong Kong, China	13	14	1 959	1 956	1.4	0.0	64	67	52	47	0.5	-3.6
Japan	519	497	4 128	3 901	0.7	-0.6	134	142	134	126	0.5	-1.2
Macao, China												
Mongolia	2	3	1 000	1 208	-2.2	1.9	640	450	360	328	-3.5	-3.1
Republic of Korea	188	250	4 092	5 160	3.2	2.3	191	214	192	189	1.1	-1.2
South-East Asia	**381**	**553**	**734**	**937**	**1.5**	**2.5**	**217**	**221**	**213**	**197**	**0.2**	**-1.1**
Brunei Darussalam	2	3	7 395	8 274	0.4	1.1	139	155	131	183	1.1	1.7
Cambodia	3	5	279	350		2.3		265	171	181		-3.8
Indonesia	155	208	742	864	1.5	1.5	266	277	256	223	0.4	-2.1
Lao PDR												
Malaysia	47	73	2 011	2 569	2.7	2.5	179	197	211	194	1.0	-0.2
Myanmar	13	14	265	270	0.2	0.2						
Philippines	40	40	513	433	0.5	-1.7	182	191	148	122	0.5	-4.4
Singapore	19	33	4 777	6 453	1.1	3.1	150	122	116	124	-2.0	0.1
Thailand	72	117	1 159	1 768	2.3	4.3	187	208	223	221	1.1	0.6
Timor-Leste												
Viet Nam	29	59	355	665	1.6	6.5	299	232	233	237	-2.5	0.2
South and South-West Asia	**755**	**1 142**	**507**	**662**	**1.1**	**2.7**	**236**	**222**	**201**	**173**	**-0.6**	**-2.5**
Afghanistan												
Bangladesh	19	31	141	205	0.9	3.9	162	148	146	140	-0.9	-0.5
Bhutan												
India	457	693	439	575	0.9	2.7	300	252	214	186	-1.7	-3.0
Iran (Islamic Rep. of)	123	208	1 866	2 798	2.1	4.1	204	251	267		2.1	
Maldives												
Nepal	8	10	350	381	0.5	0.9	428	368	351	316	-1.5	-1.5
Pakistan	63	85	441	489	0.7	1.0	235	238	222	202	0.1	-1.6
Sri Lanka	8	10	442	475	1.7	0.7	160	145	129	104	-1.0	-3.3
Turkey	76	105	1 209	1 457	1.1	1.9	120	122	108	115	0.1	-0.6
North and Central Asia	**741**	**864**	**3 402**	**3 897**	**-1.9**	**1.4**	**505**	**518**	**398**	**353**	**0.3**	**-3.8**
Armenia	2	2	651	825	-5.8	2.4	739	284	199	161	-9.1	-5.5
Azerbaijan	11	12	1 408	1 302	-4.6	-0.8	768	570	367	147	-2.9	-12.7
Georgia	3	3	605	711	-6.4	1.6	421	260	180	154	-4.7	-5.1
Kazakhstan	36	75	2 448	4 711	-3.0	6.8	634	443	386	421	-3.5	-0.5
Kyrgyzstan	2	3	485	547	-6.1	1.2	676	326	299	267	-7.0	-2.0
Russian Federation	619	702	4 219	4 885	-1.7	1.5	470	491	384	348	0.5	-3.4
Tajikistan	2	2	347	303	-5.2	-1.4	338	359	242	173	0.6	-7.0
Turkmenistan	14	21	3 163	4 226	-2.1	2.9	1 277	1 362	805	569	0.6	-8.4
Uzbekistan	51	44	2 044	1 577	-0.5	-2.6	1 129	1 261	897	557	1.1	-7.9
Pacific	**125**	**143**	**5 414**	**5 339**	**0.6**	**-0.1**	**210**	**191**	**170**	**163**	**-0.9**	**-1.6**
American Samoa												
Australia	108	125	5 613	5 567	0.5	-0.1	212	190	171	163	-1.1	-1.6
Cook Islands												
Fiji												
French Polynesia												
Guam												
Kiribati												
Marshall Islands												
Micronesia (F.S.)												
Nauru												
New Caledonia												
New Zealand	17	18	4 422	4 166	0.8	-0.6	199	198	161	168	-0.1	-1.6
Niue												
Northern Mariana Islands												
Palau												
Papua New Guinea												
Samoa												
Solomon Islands												
Tonga												
Tuvalu												
Vanuatu												
Asia and the Pacific	**3 839**	**5 940**	**1 028**	**1 438**	**0.0**	**3.4**	**303**	**250**	**236**	**218**	**-1.9**	**-1.4**
Developed countries	644	640	4 328	4 151	0.7	-0.4	144	149	140	133	0.4	-1.2
Developing countries	3 195	5 300	891	1 332	-0.1	4.1	386	289	265	237	-2.9	-2.0
LLDC	129	173	1 407	1 676	-2.6	1.8	758	674	483	379	-1.2	-5.6
LDC	43	60	199	247	0.7	2.2	201	188	173	164	-0.7	-1.3
ASEAN	381	553	734	937	1.5	2.5	217	221	213	197	0.2	-1.1
ECO	379	555	1 129	1 422	-0.4	2.3	294	250	230	200	-1.6	-2.2
SAARC	556	828	408	525	0.9	2.5	281	243	211	185	-1.4	-2.7
Central Asia	122	163	1 712	2 083	-2.7	2.0	741	692	481	374	-0.7	-6.0
Pacific island dev. econ.												
Low income econ.	67	84	269	298	-1.7	1.1		199	181			
Lower middle income econ.	811	1 147	504	617	0.8	2.0	298	262	226	195	-1.3	-2.9
Upper middle income econ.	2 094	3 769	1 255	2 124	-0.3	5.4	465	326	302	269	-3.5	-1.9
High income econ.	867	940	4 210	4 368	1.1	0.4	146	156	145	140	0.6	-1.1
Africa	**496**	**682**	**674**	**737**	**-0.1**	**0.9**	**281**	**275**	**266**	**239**	**-0.2**	**-1.4**
Europe	**1 932**	**1 978**	**3 315**	**3 308**	**-0.3**	**0.0**	**189**	**151**	**143**	**131**	**-2.2**	**-1.4**
Latin America and Carib.	**592**	**783**	**1 141**	**1 331**	**0.4**	**1.6**	**147**	**139**	**141**	**134**	**-0.5**	**-0.4**
North America	**2 525**	**2 468**	**8 008**	**7 126**	**0.3**	**-1.2**	**244**	**208**	**189**	**174**	**-1.6**	**-1.8**
World	**10 009**	**12 765**	**1 631**	**1 852**	**-0.1**	**1.3**	**237**	**202**	**194**	**182**	**-1.6**	**-1.0**

F.2.2 Final energy consumption by sector and energy balances

	Final energy consumption								TPES balance							
	Total		Industry		Transport		Residential use		Total		Production		Imports		Exports	
	Million tons of oil equivalent		% of total final energy consumption						Million tons of oil equivalent							
	2000	2010	2000	2010	2000	2010	2000	2010	2000	2010	2000	2010	2000	2010	2000	2010
East and North-East Asia	**1 269**	**2 022**	**35**	**43**	**16**	**14**	**27**	**21**	**1 838**	**3 238**	**1 225**	**2 430**	**762**	**1 114**	**118**	**133**
China	769	1 514	38	47	11	12	37	23	1 095	2 456	1 064	2 252	97	386	69	53
DPR Korea	17	16	67	68	3	2	0	0	20	19	19	21	1	1	0	3
Hong Kong, China	9	8	20	22	41	22	13	16	13	14	0	0	22	33	2	1
Japan	345	325	29	28	25	24	14	15	519	497	106	97	435	427	6	18
Macao, China																
Mongolia	2	2	31	34	21	21	28	30	2	3	2	15	0	1	0	12
Republic of Korea	127	157	30	28	21	19	12	13	188	250	34	45	207	267	41	46
South-East Asia	**274**	**399**	**28**	**30**	**23**	**23**	**34**	**27**	**381**	**553**	**452**	**672**	**196**	**318**	**237**	**384**
Brunei Darussalam	1	2	12	59	48	23	12	8	2	3	20	19	0	0	17	15
Cambodia	3	4	21	21	15	15	64	63	3	5	3	4	1	1		
Indonesia	120	156	25	29	18	23	43	37	155	208	237	381	26	42	107	215
Lao PDR																
Malaysia	30	43	39	30	35	33	10	10	47	73	74	86	16	39	42	51
Myanmar	11	13	10	10	10	6	78	81	13	14	15	23	1	0	4	9
Philippines	24	24	22	27	34	34	34	26	40	40	20	23	23	22	2	4
Singapore	9	24	34	32	21	12	6	3	19	33	0	0	83	135	42	57
Thailand	50	85	33	31	29	23	15	13	72	117	44	71	37	64	5	13
Timor-Leste																
Viet Nam	25	49	31	36	14	21	48	33	29	59	40	66	9	14	19	21
South and South-West Asia	**551**	**804**	**26**	**29**	**15**	**16**	**43**	**37**	**755**	**1 142**	**720**	**1 005**	**185**	**376**	**147**	**225**
Afghanistan																
Bangladesh	15	23	12	18	7	13	61	53	19	31	15	26	4	6	0	0
Bhutan																
India	319	457	27	33	10	12	45	38	457	693	366	519	100	244	9	63
Iran (Islamic Rep. of)	93	157	20	24	27	26	32	30	123	208	254	349	6	18	136	153
Maldives																
Nepal	8	10	5	4	3	6	90	87	8	10	7	9	1	1	0	0
Pakistan	51	70	22	25	16	16	52	48	63	85	47	64	18	22	1	2
Sri Lanka	7	9	23	25	23	26	45	42	8	10	5	6	4	4	0	
Turkey	58	78	34	29	20	19	30	29	76	105	26	32	52	81	1	7
North and Central Asia	**499**	**549**	**30**	**30**	**17**	**20**	**32**	**25**	**741**	**864**	**1 181**	**1 622**	**50**	**43**	**481**	**784**
Armenia	1	2	36	18	19	28	26	30	2	2	1	1	2	2	0	0
Azerbaijan	7	7	30	10	11	26	36	44	11	12	19	65	0	0	8	53
Georgia	2	3	16	17	16	29	53	40	3	3	1	1	2	2	0	0
Kazakhstan	22	44	44	46	15	11	9	14	36	75	79	157	8	12	51	91
Kyrgyzstan	2	3	26	31	16	34	11	5	2	3	1	1	1	2	0	0
Russian Federation	419	446	31	29	18	22	33	25	619	702	978	1 293	33	23	382	602
Tajikistan	2	2	26	27	1	5	16	13	2	2	1	2	1	1	0	0
Turkmenistan	8	12	11	12	23	14	1	1	14	21	46	46	0	0	32	25
Uzbekistan	37	31	21	22	10	10	40	40	51	44	55	55	3	2	7	13
Pacific	**82**	**88**	**34**	**30**	**36**	**38**	**13**	**13**	**125**	**143**	**248**	**327**	**32**	**50**	**156**	**233**
American Samoa																
Australia	70	75	34	30	37	38	13	13	108	125	234	311	26	43	154	229
Cook Islands																
Fiji																
French Polynesia																
Guam																
Kiribati																
Marshall Islands																
Micronesia (F.S.)																
Nauru																
New Caledonia																
New Zealand	13	13	33	30	31	36	10	12	17	18	14	17	6	7	3	4
Niue																
Northern Mariana Islands																
Palau																
Papua New Guinea																
Samoa																
Solomon Islands																
Tonga																
Tuvalu																
Vanuatu																
Asia and the Pacific	**2 676**	**3 862**	**31**	**36**	**17**	**17**	**32**	**25**	**3 839**	**5 940**	**3 826**	**6 056**	**1 225**	**1 902**	**1 140**	**1 756**
Developed countries	428	413	30	28	28	27	14	15	644	640	354	424	468	477	162	251
Developing countries	2 248	3 450	32	37	15	16	35	27	3 195	5 300	3 472	5 632	757	1 425	977	1 508
LLDC	88	113	26	28	12	12	32	29	129	173	211	351	17	21	98	194
LDC	38	50	11	13	8	10	73	68	43	60	40	61	7	9	4	9
ASEAN	274	399	28	30	23	23	34	27	381	553	452	672	196	318	237	384
ECO	279	403	25	27	20	20	34	31	379	555	528	772	90	137	236	344
SAARC	400	569	26	31	11	13	48	41	556	828	440	623	127	277	10	65
Central Asia	81	103	27	30	13	13	27	23	122	163	203	329	17	20	98	182
Pacific island dev. econ.																
Low income econ.	58	71	28	27	6	9	48	49	67	84	62	84	10	13	5	12
Lower middle income econ.	589	803	26	31	14	16	45	38	811	1 147	773	1 132	186	355	144	329
Upper middle income econ.	1 455	2 385	34	41	15	15	33	24	2 094	3 769	2 583	4 352	250	623	726	1 048
High income econ.	574	604	30	28	26	24	13	14	867	940	408	488	778	912	264	370
Africa	**374**	**503**	**18**	**17**	**14**	**15**	**59**	**58**	**496**	**682**	**883**	**1 174**	**81**	**117**	**452**	**591**
Europe	**1 322**	**1 360**	**27**	**24**	**25**	**26**	**25**	**26**	**1 932**	**1 978**	**1 290**	**1 163**	**1 397**	**1 583**	**668**	**703**
Latin America and Carib.	**447**	**563**	**33**	**32**	**31**	**35**	**18**	**17**	**592**	**783**	**843**	**1 003**	**160**	**212**	**401**	**411**
North America	**1 736**	**1 696**	**22**	**20**	**37**	**38**	**17**	**18**	**2 525**	**2 468**	**2 040**	**2 122**	**774**	**804**	**295**	**420**
World	**7 040**	**8 682**	**27**	**28**	**28**	**27**	**26**	**24**	**10 009**	**12 765**	**9 980**	**12 840**	**3 789**	**4 869**	**3 821**	**4 880**

F.2.3 Electricity production and household consumption

	Gross electricity production					Household electricity consumption					Access to electricity	Population without electricity
	TWh			% change per annum		kWh per capita			% change per annum		% of population	Millions
	2000	2005	2010	90-00	00-10	2000	2005	2010	90-00	00-10	2010	2010
East and North-East Asia	**2 759**	**4 054**	**5 857**	**5.4**	**7.8**	**323**	**418**	**577**	**6.3**	**6.6**	**98**	**22**
China	1 356	2 500	4 174	8.1	11.9	131	214	377	13.3	11.9	100	4
DPR Korea	19	23	22	-3.5	1.1						26	18
Hong Kong, China	31	38	38	0.8	2.0	1 310	1 442	1 550	5.4	2.0		
Japan	1 059	1 100	1 119	2.3	0.6	2 051	2 229	2 397	3.4	1.7		
Macao, China												
Mongolia	3	4	4	-1.4	4.1	216	281	361	0.9	6.6	86	0
Republic of Korea	290	389	500	10.7	5.6	807	1 082	1 265	7.7	5.1		
South-East Asia	**370**	**501**	**675**	**9.2**	**6.2**	**180**	**230**	**302**	**11.1**	**6.7**	**78**	**128**
Brunei Darussalam	3	3	4	8.1	4.3	1 576	1 071	2 948	4.6	8.5	100	0
Cambodia	0	1	1		8.3	16	33	72		17.8	31	10
Indonesia	93	127	170	11.1	6.2	146	185	250	12.9	7.0	73	63
Lao PDR											63	2
Malaysia	69	83	125	11.6	6.1	484	628	797	10.9	7.1	99	0
Myanmar	5	6	8	7.5	4.0	27	29	51	7.5	7.4	49	26
Philippines	45	57	68	5.6	4.1	166	187	202	8.7	3.9	83	16
Singapore	32	38	45	7.3	3.7	1 461	1 501	1 386	9.1	2.1	100	0
Thailand	96	132	160	8.1	5.2	312	391	502	9.2	5.5	88	8
Timor-Leste											38	1
Viet Nam	27	54	95	11.8	13.6	138	229	354	17.1	11.0	98	2
South and South-West Asia	**900**	**1 170**	**1 555**	**7.0**	**5.6**	**108**	**135**	**179**	**8.7**	**6.7**	**72**	**472**
Afghanistan											30	22
Bangladesh	16	27	42	7.4	10.4	42	60	84	16.2	8.7	47	88
Bhutan												
India	561	698	960	6.8	5.5	73	89	127	9.0	7.3	75	293
Iran (Islamic Rep. of)	121	178	233	7.5	6.7	475	629	818	6.1	6.9	98	1
Maldives												
Nepal	2	3	3	6.6	6.8	23	33	45	7.2	8.5	76	7
Pakistan	68	94	94	6.1	3.3	158	194	207	9.3	4.7	67	56
Sri Lanka	7	9	11	8.3	4.4	90	120	178	10.0	8.1	77	5
Turkey	125	162	211	8.1	5.4	378	457	574	10.2	5.7		
North and Central Asia	**1 048**	**1 151**	**1 252**	**-2.3**	**1.8**	**804**	**680**	**740**	**4.0**	**-0.6**		
Armenia	6	6	6	-5.4	0.9	506	571	590	-2.7	1.2		
Azerbaijan	19	21	19	-2.1	0.0	1 390	1 314	633		-6.5		
Georgia	7	7	10	-6.0	3.2	561	662	863	-0.9	3.6		
Kazakhstan	51	68	83	-5.2	4.9	327	534	558		6.4		
Kyrgyzstan	16	16	11	0.2	-3.4	474	585	285	9.1	-4.3		
Russian Federation	878	953	1 038	-2.1	1.7	959	757	903	2.8	-0.8		
Tajikistan	14	17	16	-2.4	1.4	526	465	396	9.6	-0.7		
Turkmenistan	10	13	17	-3.9	5.4	272	329	383	1.9	4.7		
Uzbekistan	47	49	52	-1.8	1.0	291	283	278	7.4	0.7		
Pacific	**249**	**272**	**286**	**2.9**	**1.4**	**2 597**	**2 717**	**2 745**	**2.1**	**2.0**		
American Samoa												
Australia	210	229	242	3.1	1.4	2 532	2 673	2 685	2.4	2.1		
Cook Islands												
Fiji												
French Polynesia												
Guam												
Kiribati												
Marshall Islands												
Micronesia (F.S.)												
Nauru												
New Caledonia												
New Zealand	39	43	45	2.0	1.3	2 919	2 938	3 055	1.0	1.7		
Niue												
Northern Mariana Islands												
Palau												
Papua New Guinea												
Samoa												
Solomon Islands												
Tonga												
Tuvalu												
Vanuatu												
Asia and the Pacific	**5 327**	**7 148**	**9 625**	**3.6**	**6.1**	**259**	**304**	**393**	**6.2**	**5.3**	**83**	**622**
Developed countries	1 308	1 371	1 406	2.4	0.7	2 136	2 309	2 458	3.2	1.8		
Developing countries	4 018	5 777	8 220	4.0	7.4	181	223	313	8.2	6.8	83	622
LLDC	168	197	212	-3.1	2.4	356	387	317		0.0		
LDC	23	36	54	7.6	8.9	35	49	72	13.5	8.9	48	156
ASEAN	370	501	675	9.2	6.2	180	230	302	11.1	6.7	78	127
ECO	471	618	736	2.5	4.6	322	387	428	9.8	4.5		
SAARC	654	830	1 111	6.8	5.4	78	97	131	9.3	6.9	71	471
Central Asia	170	198	214	-3.3	2.3	483	529	440		0.0		
Pacific island dev. econ.												
Low income econ.	73	92	104	0.0	3.6	58	71	86	11.6	5.4	46	171
Lower middle income econ.	865	1 105	1 470	6.0	5.5	104	128	171	9.4	6.7	76	438
Upper middle income econ.	2 725	4 110	6 059	3.1	8.3	246	308	460	7.8	7.1	99	14
High income econ.	1 664	1 841	1 993	3.5	1.8	1 798	1 987	2 135	3.7	2.2		
Africa	**444**	**564**	**669**	**3.4**	**4.2**	**144**	**182**	**200**	**4.6**	**5.7**	**46**	**493**
Europe	**3 511**	**3 812**	**3 868**	**0.9**	**1.0**	**1 431**	**1 565**	**1 638**	**1.9**	**1.6**		
Latin America and Carib.	**1 002**	**1 179**	**1 363**	**4.9**	**3.1**	**400**	**422**	**499**	**5.0**	**3.5**	**94**	**28**
North America	**4 658**	**4 921**	**4 986**	**2.3**	**0.7**	**4 220**	**4 571**	**4 599**	**2.4**	**1.8**		
World	**15 488**	**18 333**	**21 477**	**2.7**	**3.3**	**609**	**672**	**745**	**3.5**	**3.3**	**78**	**1 161**

F.2.4 Renewable energy

	Total renewable energy production								Electricity generated from renewable energy sources							
	Million tons of oil equivalent				% of TPES				TWh				% of total energy sources			
	1990	2000	2005	2010	1990	2000	2005	2010	1990	2000	2005	2010	1990	2000	2005	2010
East and North-East Asia	**230**	**245**	**262**	**301**	**16.0**	**13.3**	**10.6**	**9.3**	**249**	**344**	**520**	**902**	**15.4**	**12.5**	**12.9**	**15.3**
China	211	225	242	280	24.5	20.6	14.3	11.4	127	225	402	770	20.4	16.6	16.0	18.3
DPR Korea	2	2	2	2	6.9	9.5	10.2	12.0	16	10	13	13	56.3	52.6	57.3	61.9
Hong Kong, China	0	0	0	0	0.5	0.4	0.4	0.4				0				0.0
Japan	15	17	17	17	3.5	3.2	3.2	3.3	101	104	101	112	12.0	9.9	9.3	10.1
Macao, China																
Mongolia	0	0	0	0	2.5	5.5	6.4	4.5								
Republic of Korea	1	1	1	2	1.1	0.4	0.5	0.7	6	4	4	6	6.0	1.4	1.0	1.2
South-East Asia	**102**	**123**	**130**	**147**	**44.0**	**32.4**	**27.8**	**26.6**	**34**	**65**	**69**	**95**	**22.3**	**17.4**	**13.7**	**14.1**
Brunei Darussalam	0				0.1											
Cambodia		3	2	4		79.7	72.6	72.1		0	0	0		0.2	6.1	4.9
Indonesia	46	58	63	72	46.6	37.7	34.8	34.6	7	15	17	27	20.9	16.0	13.6	16.0
Lao PDR																
Malaysia	3	3	4	4	12.6	7.4	5.8	5.6	4	7	5	8	17.3	10.1	6.3	6.2
Myanmar	9	9	10	11	85.4	72.8	70.4	78.4	1	2	3	5	48.1	37.0	49.8	67.7
Philippines	16	19	16	16	57.1	47.1	42.3	39.5	12	19	18	18	45.4	42.9	32.4	26.3
Singapore	0	0	0	0	0.3	0.5	0.7	0.6	0	0	0	1	0.5	0.8	1.2	1.3
Thailand	15	15	18	23	36.0	20.9	17.8	19.6	5	7	7	9	11.3	6.8	5.5	5.6
Timor-Leste																
Viet Nam	13	15	16	17	72.4	53.7	39.2	28.8	5	15	17	28	61.8	54.8	31.7	29.1
South and South-West Asia	**187**	**211**	**231**	**250**	**37.0**	**28.0**	**25.3**	**21.9**	**123**	**135**	**204**	**244**	**27.0**	**15.0**	**17.5**	**15.7**
Afghanistan																
Bangladesh	7	8	8	9	54.5	41.3	35.1	28.6	1	1	1	2	11.4	6.0	4.9	3.9
Bhutan																
India	140	155	168	182	44.1	34.0	31.2	26.3	72	78	110	136	24.8	13.8	15.8	14.2
Iran (Islamic Rep. of)	1	0	2	1	1.1	0.4	1.0	0.5	6	4	16	10	10.3	3.0	9.1	4.2
Maldives																
Nepal	6	7	8	9	95.0	87.9	89.2	87.8	1	2	3	3	99.9	98.4	99.4	99.9
Pakistan	20	25	29	32	47.4	40.1	38.4	37.3	17	17	31	32	44.9	25.2	32.9	33.7
Sri Lanka	4	5	5	6	76.0	57.0	54.7	56.1	3	3	3	6	99.8	45.8	37.2	52.5
Turkey	10	10	10	12	18.3	13.2	12.0	11.1	23	31	40	56	40.4	24.9	24.5	26.4
North and Central Asia	**31**	**23**	**24**	**23**	**2.9**	**3.1**	**3.0**	**2.7**	**217**	**214**	**232**	**227**	**16.4**	**20.4**	**20.2**	**18.2**
Armenia	0	0	0	0	1.8	5.5	6.1	9.1	2	1	2	3	15.0	21.2	28.1	39.5
Azerbaijan	0	0	0	0	0.2	1.2	1.9	2.5	1	2	3	3	3.0	8.2	14.2	18.4
Georgia	1	1	1	1	9.0	40.3	31.5	38.8	8	6	6	9	55.2	78.9	85.8	92.5
Kazakhstan	1	1	1	1	1.0	2.0	1.4	1.0	7	8	8	8	8.4	14.7	11.6	9.7
Kyrgyzstan	1	1	1	1	11.5	49.1	46.3	30.6	10	14	14	10	63.5	85.6	86.9	91.0
Russian Federation	26	18	19	18	3.0	2.9	2.9	2.5	166	164	173	167	15.3	18.7	18.2	16.1
Tajikistan	1	1	1	1	26.7	56.1	62.3	59.0	17	14	17	16	90.9	98.4	99.3	96.6
Turkmenistan	0	0	0	0	0.3	0.0	0.0	0.0	1	0	0	0	4.8	0.1	0.0	0.0
Uzbekistan	1	1	1	1	1.2	1.0	1.6	2.1	7	6	9	11	11.8	12.5	17.5	21.0
Pacific	**9**	**12**	**12**	**14**	**9.4**	**9.2**	**9.0**	**9.8**	**41**	**46**	**48**	**54**	**21.8**	**18.3**	**17.6**	**19.0**
American Samoa																
Australia	5	6	6	7	5.9	5.9	5.6	5.5	15	18	20	21	9.7	8.4	8.8	8.9
Cook Islands																
Fiji																
French Polynesia																
Guam																
Kiribati																
Marshall Islands																
Micronesia (F.S.)																
Nauru																
New Caledonia																
New Zealand	4	5	5	7	32.8	30.3	31.7	39.0	26	28	28	33	80.0	71.5	64.2	73.3
Niue																
Northern Mariana Islands																
Palau																
Papua New Guinea																
Samoa																
Solomon Islands																
Tonga																
Tuvalu																
Vanuatu																
Asia and the Pacific	**560**	**614**	**659**	**735**	**16.7**	**16.0**	**13.8**	**12.4**	**664**	**803**	**1 073**	**1 522**	**17.8**	**15.1**	**15.0**	**15.8**
Developed countries	25	28	28	31	4.6	4.4	4.3	4.8	141	149	149	166	13.8	11.5	11.0	11.9
Developing countries	535	586	630	704	19.0	18.3	15.3	13.3	523	654	924	1 356	19.2	16.3	16.0	16.4
LLDC	9	11	13	14	4.9	8.6	8.6	7.8	44	46	55	54	19.3	27.2	27.9	25.6
LDC	22	27	29	32	73.8	62.6	57.5	53.8	3	4	7	10	26.6	19.4	19.1	18.5
ASEAN	102	123	130	147	44.0	32.4	27.8	26.6	34	65	69	95	22.3	17.4	13.7	14.1
ECO	34	40	45	49	10.1	10.5	9.7	8.7	88	95	138	146	23.8	20.1	22.2	19.8
SAARC	176	201	219	237	46.0	36.1	33.3	28.6	94	100	148	179	27.6	15.4	17.9	16.1
Central Asia	5	5	5	6	2.5	4.1	3.9	3.5	51	50	59	60	21.3	29.2	29.6	28.2
Pacific island dev. econ.																
Low income econ.	26	31	34	37	34.8	46.3	44.2	43.9	45	42	51	50	62.0	58.4	55.4	47.9
Lower middle income econ.	241	280	300	327	41.6	34.6	31.9	28.5	132	160	214	269	27.3	18.5	19.4	18.3
Upper middle income econ.	267	273	295	339	13.1	13.1	10.4	9.0	340	447	654	1 031	16.9	16.4	15.9	16.9
High income econ.	26	29	30	33	3.9	3.4	3.3	3.5	148	154	154	173	12.6	9.3	8.4	8.7
Africa	**160**	**208**	**238**	**275**	**41.2**	**42.0**	**39.9**	**40.3**	**53**	**71**	**86**	**104**	**17.3**	**16.5**	**15.8**	**16.0**
Europe	**92**	**123**	**143**	**197**	**4.5**	**6.4**	**7.0**	**10.0**	**492**	**642**	**674**	**893**	**15.5**	**18.4**	**17.9**	**23.3**
Latin America and Carib.	**130**	**146**	**171**	**203**	**28.2**	**24.6**	**25.1**	**25.9**	**398**	**604**	**681**	**789**	**66.3**	**62.3**	**59.7**	**57.9**
North America	**130**	**144**	**149**	**169**	**6.1**	**5.7**	**5.7**	**6.8**	**670**	**697**	**740**	**811**	**18.2**	**15.1**	**15.1**	**16.3**
World	**1 073**	**1 238**	**1 362**	**1 582**	**12.2**	**12.4**	**11.9**	**12.4**	**2 290**	**2 827**	**3 272**	**4 134**	**19.4**	**18.4**	**18.0**	**19.4**

F.3. Water availability and use

Water security involves the protection of livelihoods, human rights, and cultural and recreational values, as well as the preservation of ecosystems for socio-economic development.[1] One of the key aspects of water security means that people enjoy universal access to safe, sufficient and affordable drinking water in order to meet basic needs.

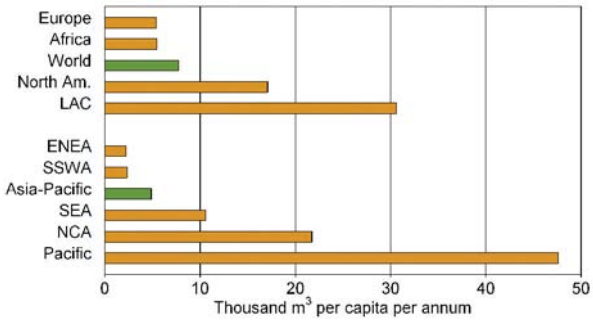
The growing population and rapid urbanization in Asia and the Pacific have increased pressure on water resources. The demand for water has surged and the demand pattern has changed as the domestic and industrial sectors have become more significant users of water; however, agriculture still uses most of the surface water available. Higher levels of urbanization have resulted in the need for an increased quantity of food produced with a smaller number of people in the agricultural sector, which in turn has led to more intensive farming practices that require more efficient water use.

Water availability is relatively constant, but there are large variations among subregions in Asia and the Pacific.

The availability of total renewable water resources in the region is relatively constant. Representing the maximum theoretical amount of water available in natural conditions, excluding human influence and the effects of climate change, total renewable water resources are a combination of the ambient surface water, groundwater and soil moisture. In 2011, total renewable water resources in the region equalled 20,521 billion m^3, which represents approximately 38 per cent of total world water availability. Within the region, South-East Asia has the largest renewable water resources available, with about 31 per cent of total regional water availability, whereas the Pacific has the least, with only 8 per cent of total renewable water resources in the region.

On the other hand, Asia and the Pacific has fewer renewable water resources per capita than the global average or than any other region in the world (see figure F.3-1). Within the region, the Pacific stands out with the highest availability of renewable water resources per capita, but that is also due to small population numbers. East and North-East Asia, and South and South-West Asia have especially low values for freshwater resources per capita. However, average figures do not necessarily provide a clear picture of the reality at the local level.

Figure F.3-1
Annual per capita availability of water resources, world regions and Asian and Pacific subregions, 2011



There is great potential for freshwater withdrawal in Asia and the Pacific but this is not spread equally across the region; there exist areas of water scarcity, from both natural and induced water stress.

The high level of freshwater withdrawal in Asia and the Pacific can be attributed to the region's geographical size and large population, as well as its extensive and intensive irrigation practices and other economic activities. The five subregions have markedly different climatic zones, and freshwater withdrawal as a percentage of total water availability varies accordingly. Millennium Development Goal indicator 7.5 is the ratio of the amount of water used by society to the amount of water "supplied" by nature. The supply is the estimated sum of current water resources generated within a country (that is, precipitation) and the inflows from neighbouring territories. The amount of water abstracted, excluding hydroelectricity, provides an indication

[1] United Nations University Institute for Water, Environment and Health, and ESCAP, *Water Security and the Global Water Agenda: A UN-Water Analytical Brief* (United Nations University, 2013). Available from www.unwater.org/downloads/watersecurity_analyticalbrief.pdf.

of the amount of water used.[2] The indicators for some countries in the region are presented in figure F.3-2, whereas figure F.3-3 presents the total availability of natural water resources and total freshwater withdrawal for countries in the region.

Figure F.3-2
Total annual freshwater withdrawal as a percentage of total renewable water resources by country, Asia and the Pacific, 2011

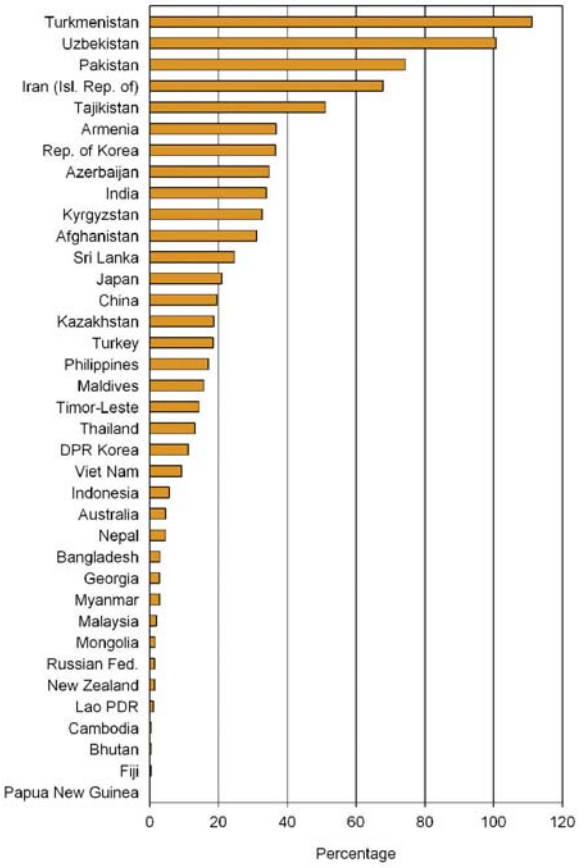
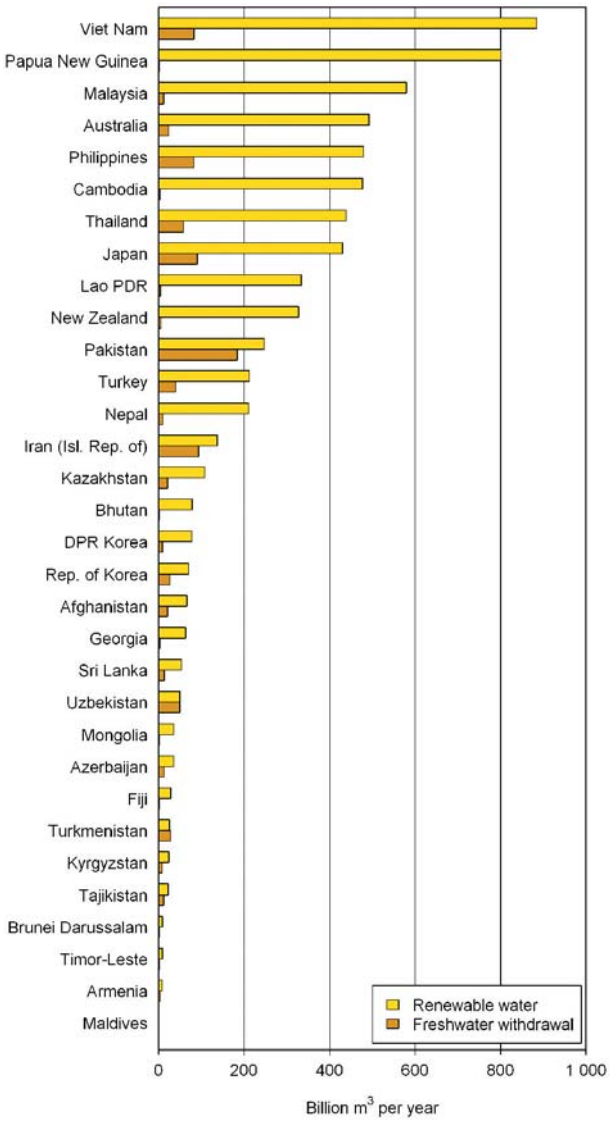


Figure F.3-3
Availability of natural water resources and total freshwater withdrawal by country, Asia and the Pacific, 2011



The indicator may not show important contrasts between areas of countries or between seasons. Within many countries in Asia and the Pacific, there are areas with relatively abundant renewable freshwater resources and other areas where water is much scarcer. There is also a significant seasonal element, particularly for countries in South-East Asia, which experience wet and dry seasons. In all of these cases, it is important to have information by catchment area and for the different seasons. For example, in Thailand, 80 per cent of annual precipitation falls between May and October.[3] In China, where roughly half of the country's population lives in the south and the other half in north, about 80 per cent of total renewable water resources are concentrated in the southern portion of the country.[4]

[2] The definitions of the various data items to be used are found in the System of Environmental-Economic Accounting for Water and the International Recommendations for Water Statistics, both adopted by the United Nations Statistical Commission. Only the renewable portion of water resources is included in the "supply."

[3] Thailand, Meteorological Department, "Annual weather summary of Thailand in 2011." Available from www.tmd.go.th/programs%5Cuploads%5CyearlySummary%5CAnnual2011_up.pdf.

[4] China, Ministry of Water Resources, *China Water Resources Bulletin 2006* (China Water Power Press, 2007).

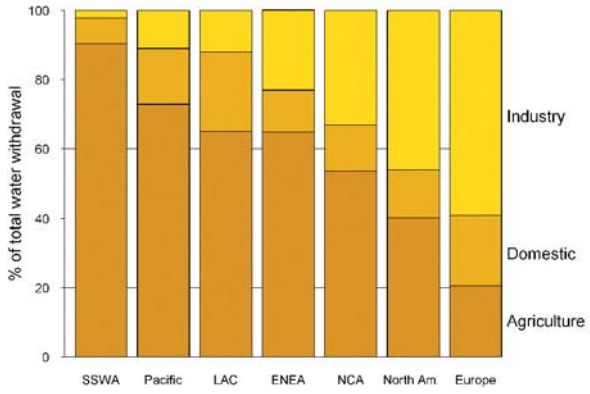
Competition for water increases as a country develops economically and water use shifts from the agricultural sector to the domestic and industrial sectors.

Freshwater resources are finite, but the population of the Asian and Pacific region has grown steadily over the past two decades, and it is predicted to increase by approximately another 15 per cent between 2010 and 2030. Due to this population growth, more water will be required for all socio-economic activities, and there is a need for countries to improve their management of non-revenue water losses and water use per person per day. In terms of percentages, water used by the domestic and industrial sectors will continue to increase while the percentage for agricultural use will continue to decrease.

Water use in the agricultural sector is much higher than it is in the domestic sector. In most countries in the region, water withdrawal is between 60 per cent and 90 per cent for agricultural use, between 5 per cent and 15 per cent for domestic use, and between 5 per cent and 30 per cent for industrial use, depending on the country. Countries that have low water withdrawal for agricultural use include Papua New Guinea at 0.3 per cent (2005), the Russian Federation at 20 per cent (2001) and Malaysia at 22 per cent (2005). Maldives uses 95 per cent (2008) and Papua New Guinea 57 per cent (2005) of water for domestic use. Afghanistan, Bhutan, Nepal and Timor-Leste use less than 1 per cent (2000-2008) for the industrial sector, while the Russian Federation uses 60 per cent (2001).

Water use per person per annum differs significantly from country to country depending on national level governance and management practices. Most countries in Asia and the Pacific use between 20 m^3 and 80 m^3 per capita per annum. High consumers are Brunei Darussalam at 384 m^3 (2009) and New Zealand at 264 m^3 (2000), whereas the lowest consumers are Nepal at 6 m^3 (2005) and Cambodia at 7 m^3 (2006).

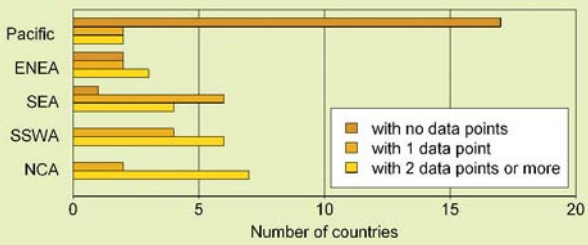
Figure F.3-4
Proportional use of water withdrawal by sector, selected world regions and Asian and Pacific subregions, 2000-2010



Box F.3-1
Proportion of total water resources used and the availability of data (Millennium Development Goal indicator 7.5)

The need to monitor the supply and use of freshwater resources has received prominence globally, including through Millennium Development Goal indicator 7.5 on the proportion of total water resources used. However, the measurement of the supply and use of freshwater in countries has been constrained by problems associated with inconsistent terminology and a lack of coherence across methodologies. As discussed above, there are inherent limitations with producing national aggregate indicators for water supply and use that ignore seasonal variations and disparities across locations within a country. There is also a lack of availability of data for most ESCAP member States. Currently, statistics on the

Number of Asian and Pacific countries with zero, one, or two or more data points, 1990-2010



Source: United Nations, Data availability, Millennium Indicators Database. Available from http://mdgs.un.org/unsd/mdg/DataAvailability.aspx.

Millennium Indicators Database[a] are unavailable or available only for one point in the time series for most countries in the region (see succeeding figure).

It is therefore important to collect data on water for countries and for the relevant areas and seasons within countries. The data collected will provide the basis for better policy decisions. The System of Environmental-Economic Accounting for Water and the International Recommendations for Water Statistics provide all the elements necessary to develop policy-relevant water statistics in countries.

[a] Available from http://mdgs.un.org/unsd/mdg/.

Further reading

Asian Development Bank. *Asian Water Development Outlook 2013: Measuring Water Security in Asia and the Pacific*. Mandaluyong City, Philippines, 2013. Available from www.adb.org/publications/asian-water-development-outlook-2013.

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Hoekstra, Arjen Y. and Mesfin M. Mekonnen. *The water footprint of humanity. Proceedings of the National Academy of Sciences of the United States of America,* vol. 109, No. 9 (February 2012). Available from www.waterfootprint.org/Reports/Hoekstra-Mekonnen-2012-WaterFootprint-of-Humanity.pdf.

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Technical notes

Renewable water resources, total (billion m^3 per annum, m^3 per capita per annum)

The sum of internal renewable water resources and natural incoming flows originating outside the country, taking into consideration the quantity of flows reserved to upstream and downstream countries through formal or informal agreements or treaties. That sum gives the maximum theoretical amount of water available in the country. **Indicator calculations:** Per capita figures are based on population figures (WPP2012). **Aggregate calculations:** Sum of individual country values (billion m^3 per annum); weighted averages using total population (WPP2012) as weight (m^3 per capita per annum). Missing data are not imputed.

Renewable water resources, internal (billion m^3 per annum)

The long-term annual average flow of rivers and recharge of groundwater generated from endogenous precipitation. **Aggregate calculations:** Sum of individual country values. Missing data are not imputed.

Total freshwater withdrawal (billion m^3 per annum, percentage of total renewable water per annum)

The gross amount of water extracted, either permanently or temporarily, from surface water or groundwater sources minus those produced from non-conventional water sources, such as reused treated wastewater and desalinated water. **Indicator calculations:** Proportion of total freshwater withdrawal to total renewable water per annum. **Aggregate calculations:** Sum of individual country values (billion m^3 per annum); weighted averages using total renewable water as weight (percentage of total renewable water per annum). Missing data are not imputed.

Domestic water withdrawal (m^3 per capita per annum)

The domestic water withdrawal divided by the

total population, expressed in m^3 per capita per annum. Domestic water withdrawal is the drinking water plus water withdrawn for homes, municipalities, commercial establishments and public services. **Aggregate calculations:** Weighted averages using total population (WPP2012) as weight. Missing data are not imputed.

Water withdrawal by sector: agriculture, domestic use and industry (percentage of total water withdrawal)

Water withdrawal by agricultural sector, public distribution network or industrial sector, divided by the total water withdrawal. The methods for computing agricultural water withdrawal vary from country to country. Domestic use can include industrial users that are connected to the network as domestic users and industry consists of self-supplied industries not connected to any distribution network. **Aggregate calculations:** Weighted average using the total water withdrawal for all purposes as weight. Missing data are not imputed.

Source

Food and Agriculture Organization of the United Nations (FAO), AQUASTAT database. AQUASTAT is FAO's global information system on water and agriculture. The Land and Water Division collects, analyses and disseminates information on water resources, water uses and agricultural water management. **Data obtained:** 1-4 March 2013.

F.3.1 Water availability

	Renewable water resources					Total freshwater withdrawal			
	Total			Total	Internal				
	m^3 per capita per annum			Billion m^3 per annum		Billion m^3 per annum		% of total renewable water per annum	
	1992	2002	2011	2011	2011	Earliest	Latest	Earliest	Latest
East and North-East Asia	**2 485**	**2 311**	**2 196**	**3 452**	**3 410**	**500.0 (90)**	**562.8 (05)**	**17.8 (93)**	**19.3 (05)**
China	2 369	2 193	2 075	2 840	2 813	500.0 (90)	554.1 (05)	17.6 (90)	19.5 (05)
DPR Korea	3 702	3 319	3 132	77	67		8.7 (05)		11.2 (05)
Hong Kong, China									
Japan	3 491	3 406	3 377	430	430	91.4 (92)	89.9 (01)	21.3 (92)	20.9 (01)
Macao, China									
Mongolia	15 511	14 243	12 635	35	35	0.4 (93)	0.6 (09)	1.2 (93)	1.6 (09)
Republic of Korea	1 594	1 502	1 430	70	65		25.5 (02)		36.5 (02)
South-East Asia	**13 886**	**11 851**	**10 584**	**6 396**	**4 993**				
Brunei Darussalam	31 257	24 538	20 910	9	9	0.1 (91)		0.9 (91)	
Cambodia	48 973	37 461	32 597	476	121		2.2 (06)		0.5 (06)
Indonesia	10 918	9 389	8 281	2 019	2 019	74.3 (90)		3.7 (90)	
Lao PDR	74 147	60 142	51 140	334	190		3.5 (05)		1.0 (05)
Malaysia	30 200	23 757	20 168	580	580	10.1 (90)	11.2 (05)	1.7 (90)	1.9 (05)
Myanmar	26 899	23 710	22 311	1 168	1 003	33.2 (00)		2.8 (00)	
Philippines	7 370	5 917	5 039	479	479		81.6 (09)		17.0 (09)
Singapore	188	145	116	1	1				
Thailand	7 607	6 875	6 588	439	225		57.3 (07)		13.1 (07)
Timor-Leste	10 207	9 134	7 493	8	8		1.2 (04)		14.3 (04)
Viet Nam	12 296	10 710	9 833	884	359		81.9 (05)		9.3 (05)
South and South-West Asia	**3 200**	**2 651**	**2 330**	**4 140**	**2 338**	**509.8 (90)**	**647.5 (10)**	**32.2 (00)**	**33.9 (10)**
Afghanistan	4 730	2 942	2 245	65	47	20.3 (00)		31.0 (00)	
Bangladesh	10 913	8 956	8 027	1 227	105		35.9 (08)		2.9 (08)
Bhutan	179 821	135 349	106 933	78	78		0.3 (08)		0.4 (08)
India	2 115	1 775	1 565	1 911	1 446	500.0 (90)	647.5 (10)	26.2 (90)	33.9 (10)
Iran (Islamic Rep. of)	2 350	2 023	1 816	137	129	83.0 (95)	93.0 (04)	50.9 (95)	67.9 (04)
Maldives	132	106	90	0	0		0.0 (08)		15.7 (08)
Nepal	11 034	8 721	7 740	210	198	9.6 (00)	9.5 (06)	4.5 (00)	4.5 (06)
Pakistan	2 104	1 649	1 401	247	55	155.6 (91)	183.5 (08)	63.1 (91)	74.4 (08)
Sri Lanka	2 977	2 741	2 523	53	53	9.8 (90)	13.0 (05)	18.5 (90)	24.5 (05)
Turkey	3 791	3 254	2 896	212	227	31.6 (92)	39.1 (03)	14.9 (92)	18.5 (03)
North and Central Asia	**22 355**	**22 262**	**21 750**	**4 840**	**4 581**	**175.9 (94)**	**119.9 (01)**	**1.9 (94)**	**2.6 (01)**
Armenia	2 252	2 550	2 621	8	7	2.9 (95)	2.9 (07)	27.8 (95)	36.8 (07)
Azerbaijan	4 654	4 189	3 769	35	8	12.4 (97)	12.1 (05)	35.8 (97)	34.8 (05)
Georgia	11 847	13 702	14 478	63	58		1.8 (05)		2.9 (05)
Kazakhstan	6 689	7 351	6 678	108	64	31.8 (95)	20.0 (10)	30.7 (95)	18.6 (10)
Kyrgyzstan	5 277	4 721	4 371	24	49	9.8 (94)	7.7 (06)	41.5 (94)	32.6 (06)
Russian Federation	30 296	30 978	31 428	4 508	4 313	77.1 (94)	66.2 (01)	1.7 (94)	1.5 (01)
Tajikistan	3 967	3 421	2 804	22	63	11.5 (94)	11.2 (06)	74.3 (95)	51.1 (06)
Turkmenistan	6 381	5 385	4 851	25	1	23.7 (94)	27.5 (04)	96.2 (95)	111.1 (04)
Uzbekistan	2 269	1 929	1 736	49	16	53.8 (94)	49.2 (05)	115.2 (95)	100.6 (05)
Pacific	**63 956**	**55 357**	**47 599**	**1 693**	**1 693**	**22.9 (00)**		**1.7 (00)**	
American Samoa									
Australia	28 068	24 956	21 635	492	492	22.2 (96)		4.5 (96)	
Cook Islands									
Fiji	38 356	34 978	32 895	29	29	0.1 (00)		0.3 (00)	
French Polynesia									
Guam									
Kiribati									
Marshall Islands									
Micronesia (F.S.)									
Nauru									
New Caledonia									
New Zealand	93 345	82 535	74 084	327	327		4.8 (02)		1.5 (02)
Niue									
Northern Mariana Islands									
Palau									
Papua New Guinea	183 333	141 513	114 217	801	801	0.3 (00)	0.4 (05)	0.0 (00)	0.0 (05)
Samoa									
Solomon Islands	135 461	102 787	83 086	45	45				
Tonga									
Tuvalu									
Vanuatu									
Asia and the Pacific	**6 056**	**5 339**	**4 873**	**20 521**	**17 014**				
Developed countries	8 661	8 331	8 086	1 249	1 249	91.4 (92)	89.9 (01)	21.3 (92)	20.9 (01)
Developing countries	5 940	5 218	4 751	19 272	15 765				
LLDC	9 832	8 135	7 028	991	758				
LDC	17 732	14 298	12 672	3 611	1 795				
ASEAN	13 892	11 856	10 590	6 387	4 985				
ECO	3 032	2 500	2 167	922	660	281.5 (00)		47.4 (00)	
SAARC	3 214	2 654	2 328	3 791	1 982	509.8 (90)	647.5 (10)	33.2 (00)	33.9 (10)
Central Asia	4 908	4 623	4 202	332	268			62.4 (95)	
Pacific island dev. econ.	160 607	126 494	103 844	874	874	0.4 (00)	0.4 (05)	0.0 (00)	0.0 (05)
Low income econ.	14 259	11 679	10 414	3 269	1 653				
Lower middle income econ.	5 026	4 209	3 702	7 041	5 678	909.7 (00)		18.0 (00)	
Upper middle income econ.	5 671	5 257	4 972	8 882	8 360	512.0 (93)	577.4 (05)	18.0 (93)	16.7 (05)
High income econ.	6 937	6 612	6 359	1 328	1 323				
Africa	**9 241**	**6 782**	**5 448**	**5 559**	**3 931**				
Europe	**5 433**	**5 336**	**5 396**	**3 226**	**2 265**		**185.7 (07)**		**10.9 (07)**
Latin America and Carib.	**39 985**	**34 101**	**30 608**	**18 391**	**13 436**	**160.9 (00)**		**1.0 (00)**	
North America	**20 733**	**18 569**	**17 089**	**5 971**	**5 668**	**467.4 (95)**	**477.8 (05)**	**15.2 (95)**	**15.6 (05)**
World	**9 970**	**8 641**	**7 771**	**53 788**	**42 370**				

F.3.2 Water use

	Domestic water withdrawal		Water withdrawal					
			Domestic use		Agriculture		Industry	
	m^3 per capita per annum		% of total water withdrawal					
	Earliest	Latest	Earliest	Latest	Earliest	Latest	Earliest	Latest
East and North-East Asia	**30.0 (90)**	**51.0 (05)**	**7.0 (90)**	**12.2 (05)**	**83.0 (90)**	**64.8 (05)**	**10.0 (90)**	**23.1 (05)**
China	30.0 (90)	51.2 (05)	7.0 (90)	12.2 (05)	83.0 (90)	64.6 (05)	10.0 (90)	23.2 (05)
DPR Korea	37.5 (00)	37.9 (05)		10.4 (05)		76.4 (05)		13.2 (05)
Hong Kong, China								
Japan	138.0 (92)		18.6 (92)	19.3 (01)	64.1 (92)	63.1 (01)	17.3 (92)	17.6 (01)
Macao, China								
Mongolia	37.6 (93)	26.6 (09)	19.9 (93)	12.9 (09)	53.0 (93)	43.9 (09)	27.1 (93)	43.2 (09)
Republic of Korea		142.7 (02)		26.0 (02)		62.0 (02)		12.0 (02)
South-East Asia	**60.5 (00)**							
Brunei Darussalam		384.1 (09)			5.8 (95)			
Cambodia		7.2 (06)		4.5 (06)		94.0 (06)		1.5 (06)
Indonesia	26.5 (90)	62.3 (05)	6.4 (90)	11.6 (00)	93.1 (90)	81.9 (00)	0.5 (90)	6.5 (00)
Lao PDR		23.1 (03)		3.7 (05)		91.4 (05)		4.9 (05)
Malaysia	44.9 (90)	151.0 (05)	8.1 (90)	34.8 (05)	82.0 (90)	22.4 (05)	9.9 (90)	42.8 (05)
Myanmar	68.6 (00)		10.0 (00)		89.0 (00)		1.0 (00)	
Philippines	61.3 (95)	67.9 (09)	7.4 (06)	7.6 (09)	83.1 (06)	82.2 (09)	9.5 (06)	10.1 (09)
Singapore	223.9 (00)	239.8 (05)						
Thailand	26.4 (90)	41.5 (07)		4.8 (07)		90.4 (07)		4.8 (07)
Timor-Leste	12.5 (00)	102.4 (04)		8.4 (04)		91.4 (04)		0.2 (04)
Viet Nam	13.0 (00)	14.2 (05)		1.5 (05)		94.8 (05)		3.7 (05)
South and South-West Asia	**27.1 (90)**	**46.4 (10)**	**4.9 (90)**	**7.4 (10)**	**92.1 (90)**	**90.4 (10)**	**3.0 (90)**	**2.2 (10)**
Afghanistan	7.5 (00)	8.2 (05)	0.8 (00)		98.6 (00)		0.6 (00)	
Bangladesh	15.8 (90)	24.3 (08)		10.0 (08)		87.8 (08)		2.1 (08)
Bhutan		24.6 (08)		5.0 (08)		94.1 (08)		0.9 (08)
India	28.8 (90)	46.4 (10)	5.0 (90)	7.4 (10)	92.0 (90)	90.4 (10)	3.0 (90)	2.2 (10)
Iran (Islamic Rep. of)	99.2 (95)	89.4 (04)	7.2 (95)	6.6 (04)	91.6 (95)	92.2 (04)	1.2 (95)	1.2 (04)
Maldives	22.7 (00)	17.8 (08)		94.9 (08)		0.0 (08)		5.1 (08)
Nepal	12.3 (94)	5.8 (05)	2.1 (00)	1.6 (06)	97.5 (00)	98.1 (06)	0.4 (00)	0.3 (06)
Pakistan	21.9 (91)	57.8 (08)	1.6 (91)	5.3 (08)	96.8 (91)	94.0 (08)	1.6 (91)	0.8 (08)
Sri Lanka	11.3 (90)	40.3 (05)	2.0 (90)	6.2 (05)	96.0 (90)	87.3 (05)	2.0 (90)	6.4 (05)
Turkey	93.2 (92)	94.0 (03)	16.5 (92)	15.5 (03)	72.5 (92)	73.8 (03)	11.1 (92)	10.7 (03)
North and Central Asia	**96.7 (94)**	**98.4 (01)**	**9.9 (94)**	**13.3 (01)**	**62.7 (94)**	**53.6 (01)**	**27.4 (94)**	**33.1 (01)**
Armenia	268.4 (95)	280.7 (06)	29.6 (95)	29.5 (07)	66.3 (95)	66.1 (07)	4.1 (95)	4.4 (07)
Azerbaijan	28.0 (97)	60.8 (05)	1.8 (97)	4.3 (05)	81.2 (97)	76.4 (05)	17.0 (97)	19.3 (05)
Georgia	70.8 (00)	80.0 (05)		19.8 (05)		58.2 (05)		22.1 (05)
Kazakhstan	37.5 (95)	55.1 (10)	1.7 (95)	4.2 (10)	81.4 (95)	66.2 (10)	16.9 (95)	29.6 (10)
Kyrgyzstan	66.3 (94)	44.1 (06)	3.0 (94)	2.8 (06)	94.1 (94)	93.0 (06)	2.9 (94)	4.2 (06)
Russian Federation	96.1 (94)	91.7 (01)	18.6 (94)	20.2 (01)	19.8 (94)	19.9 (01)	61.6 (94)	59.8 (01)
Tajikistan	72.2 (94)	93.0 (06)	3.5 (94)	5.6 (06)	92.3 (94)	90.9 (06)	4.2 (94)	3.5 (06)
Turkmenistan	85.2 (94)	160.7 (04)	1.5 (94)	2.7 (04)	97.9 (94)	94.3 (04)	0.6 (94)	3.0 (04)
Uzbekistan	114.8 (94)	157.4 (05)	4.4 (94)	7.3 (05)	93.7 (94)	90.0 (05)	1.9 (94)	2.7 (05)
Pacific	**161.0 (00)**		**16.1 (00)**		**72.9 (00)**		**11.0 (00)**	
American Samoa								
Australia	182.8 (00)		15.6 (00)		69.9 (96)		10.6 (00)	
Cook Islands								
Fiji	28.2 (00)	30.8 (05)	28.0 (00)		61.2 (00)		10.8 (00)	
French Polynesia								
Guam								
Kiribati								
Marshall Islands								
Micronesia (F.S.)								
Nauru								
New Caledonia								
New Zealand	264.4 (00)			21.5 (02)		74.3 (02)		4.2 (02)
Niue								
Northern Mariana Islands								
Palau								
Papua New Guinea	28.7 (00)	36.7 (05)	56.9 (00)	57.0 (05)	0.4 (00)	0.3 (05)	42.7 (00)	42.7 (05)
Samoa								
Solomon Islands								
Tonga								
Tuvalu								
Vanuatu								
Asia and the Pacific	**28.6 (90)**	**43.9 (00)**	**6.0 (90)**		**87.9 (90)**		**6.1 (90)**	
Developed countries	138.0 (92)	147.4 (00)	18.6 (92)	19.3 (01)	64.1 (92)	63.1 (01)	17.3 (92)	17.6 (01)
Developing countries	28.6 (90)	38.9 (00)	6.0 (90)		87.9 (90)		6.1 (90)	
LLDC								
LDC								
ASEAN	60.6 (00)							
ECO	58.8 (00)		5.1 (00)		91.8 (00)		3.1 (00)	
SAARC	27.1 (90)	46.4 (10)	4.9 (90)	7.4 (10)	92.1 (90)	90.4 (10)	3.0 (90)	2.2 (10)
Central Asia								
Pacific island dev. econ.	28.7 (00)	36.0 (05)	50.2 (00)	57.0 (05)	14.4 (00)	0.3 (05)	35.3 (00)	42.7 (05)
Low income econ.								
Lower middle income econ.	28.1 (90)	43.6 (00)	5.1 (90)	6.8 (00)	92.2 (90)	90.8 (00)	2.7 (90)	2.4 (00)
Upper middle income econ.	30.1 (90)	53.2 (05)	7.0 (90)	12.5 (05)	83.0 (90)	64.0 (05)	10.0 (90)	23.5 (05)
High income econ.	149.4 (00)							
Africa	**34.6 (00)**	**28.6 (05)**						
Europe				**20.3 (07)**		**20.6 (07)**		**59.1 (07)**
Latin America and Carib.	**98.4 (00)**		**23.1 (00)**		**65.0 (00)**		**11.9 (00)**	
North America	**238.4 (90)**	**219.5 (05)**	**13.1 (90)**	**13.7 (05)**	**42.1 (90)**	**40.2 (05)**	**44.8 (90)**	**46.1 (05)**
World	**64.0 (00)**							

F.4. Biodiversity, protected areas and forests

Biodiversity is a complex topic for which direct and internationally comparable measurements have been elusive to science. Even the relatively simpler concepts of protected areas and forest areas are prone to methodological and data availability limitations for regional analyses. The present topic features some of the indicators for which comparable statistics could be compiled with reasonably good coverage across the Asian and Pacific region, in order to approximate some of the trends and current situations for the region in regard to biodiversity, protected areas, forests and the many benefits with which they provide our societies.

Protected areas – both marine and terrestrial – are critical for the protection of important biodiversity and cultural values that would otherwise face decimation due to the pressures of the demand for food, materials, energy, land and the pursuit of income. The plight of the oceans was highlighted at the United Nations Conference on Sustainable Development, also known as the Rio+20 Conference, which stressed the importance of the conservation and sustainable use of the oceans and seas and of their resources for sustainable development. The heads of State and high-level representatives committed to "protect, and restore, the health, productivity and resilience of oceans and marine ecosystems, and to maintain their biodiversity, enabling their conservation and sustainable use for present and future generations."[1] This statement builds on the commitments already embodied in membership in the Convention on Biological Diversity.[2]

However, the Asian and Pacific region lags behind all other regions except Europe in submitting actions plans to the Convention.[3] Only 25 out of 47 countries in the Asian and Pacific region that are party to the Convention have submitted action plans for the Programme of Work on Protected Areas,[4] agreed to by the Conference of the Parties of the Convention at its 7th meeting.[5] Even in places where there is substantial protected area coverage, ineffective management and a lack of law enforcement can lead to habitat degradation, and key ecosystem values are being lost. Forest cover, while expanding due to major investment in plantation forests, is still under tremendous threat, as biodiversity-rich primary forests, which support rural communities and provide many non-wood forest products and ecosystem services such as aquifer recharge, continue to be lost each year.

The Asian and Pacific region continues to be faced with large numbers of threatened species. Therefore, even minor improvements to protecting key ecosystems and to reducing overharvesting and habitat destruction could create positive impacts for a great number of species.

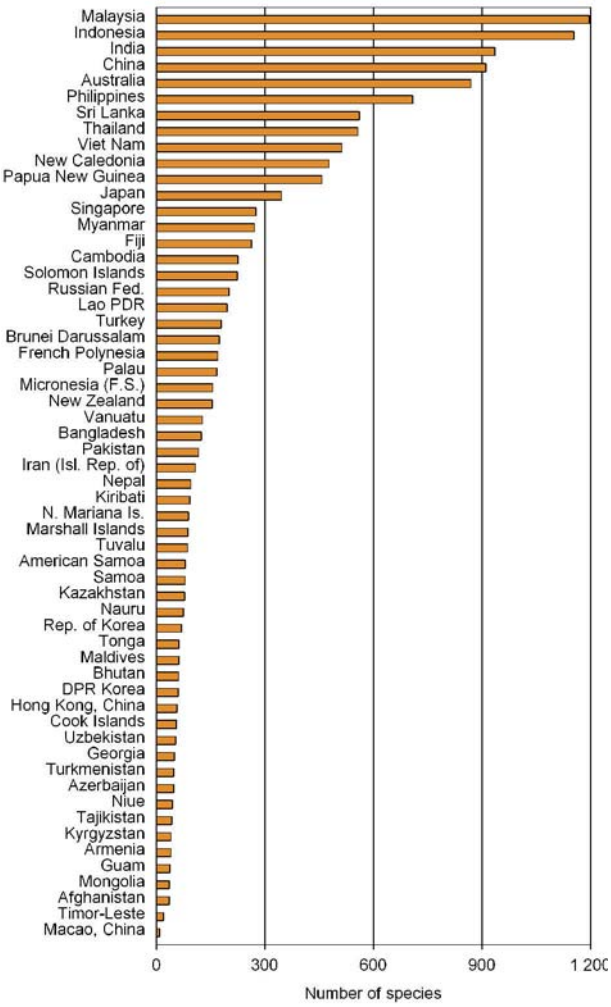
Conservation successes have been limited compared with the threats to biodiversity and other natural endowments resulting from expansion of agriculture, tourism and the production of hydropower.

Comparing the trends in biodiversity data across countries or regions is difficult because the measures depend on the levels of survey activity and the numbers of species under threat. However, the statistics presented in this Yearbook, and in subregional and global reports, reveal high degrees of threat for the region's biodiversity. These threats are significant for development because biodiversity provides for rural livelihoods.

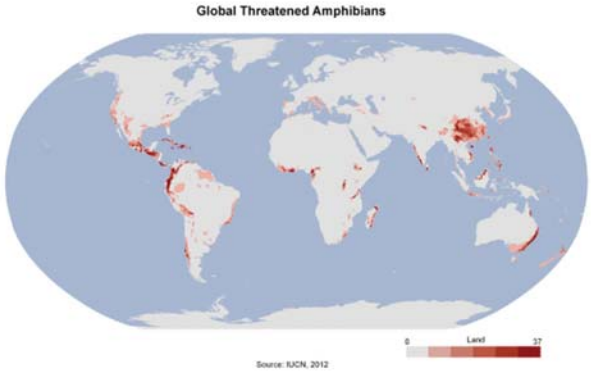
According to studies by IUCN conducted to calculate the numbers of threatened species,[6] the situation has become particularly worse for species of corals and species of amphibians in the last two decades. Maps F.4-1 and F.4-2 from IUCN demonstrate how these challenges have particular importance for the region.

[1] See General Assembly resolution 66/288, annex, para. 158. Available from www.uncsd2012.org/thefuturewewant.html.
[2] United Nations, *Treaty Series,* vol. 1760, No. 30619.
[3] The Convention was adopted at the United Nations Conference on Environment and Development, 5 June 1992, Rio de Janeiro, Brazil.
[4] See www.cbd.int/protected/implementation/actionplans/.
[5] See www.cbd.int/decision/cop/default.shtml?id=7765.
[6] International Union for Conservation of Nature, Red List of Threatened Species. Available from www.iucnredlist.org/about/summary-statistics.

Figure F.4-1
Numbers of threatened species, Asia and the Pacific, 2012

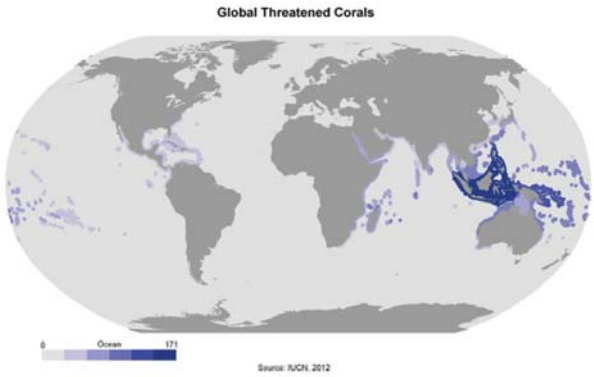


Map F.4-1
Amphibians threatened worldwide



Source: International Union for Conservation of Nature, Red List of Threatened Species (2012).

Map F.4-2
Corals threatened worldwide



Source: International Union for Conservation of Nature, Red List of Threatened Species (2012).

The region is lagging behind in protecting its marine areas.

Marine biodiversity is often overlooked, but the World Wide Fund for Nature, in its *Living Planet Report 2012,*[7] highlights that the Asian and Pacific region has experienced the highest intensities of extractive pressures from the fisheries industry over most of the region's waters, affecting a wide variety of marine species.

Despite important steps taken by Pacific island countries and territories in recent years, in 2010 the share of protected marine areas in the region was 5.8 per cent of its territorial waters, compared with 7.1 per cent for the world average and falling far short of the Convention on Biological Diversity target of 10 per cent by 2020.[8] Since 2000, the largest proportional increases in protected marine areas have been recorded by countries and territories in the Pacific subregion, such as American Samoa, Australia, Kiribati, New Caledonia, New Zealand and Northern Mariana Islands, while the establishment of protected areas has stagnated among South Asian Association for Regional Cooperation (SAARC) countries since 2000. Only marginal increases in protected marine areas have been recorded since 2000 among Association of Southeast Asian Nations (ASEAN) countries (approximately 0.8 percentage points) as well as

[7] World Wide Fund for Nature, *Living Planet 2012: Biodiversity, Biocapacity and Better Choices* (Gland, Switzerland, 2012).

[8] See the Strategic Plan for Biodiversity 2011-2020, annex to decision X/2 of the 10th meeting of the Conference of the Parties to the Convention on Biological Diversity, issued 29 October 2010. Available from www.cbd.int/decision/cop/?id=12268.

in East and North-East Asia (approximately 0.4 percentage points) (see figures F.4-2 and F.4-3).

Figure F.4-2
Protected marine areas as a percentage of territorial waters, Asia and the Pacific, 2000 and 2010

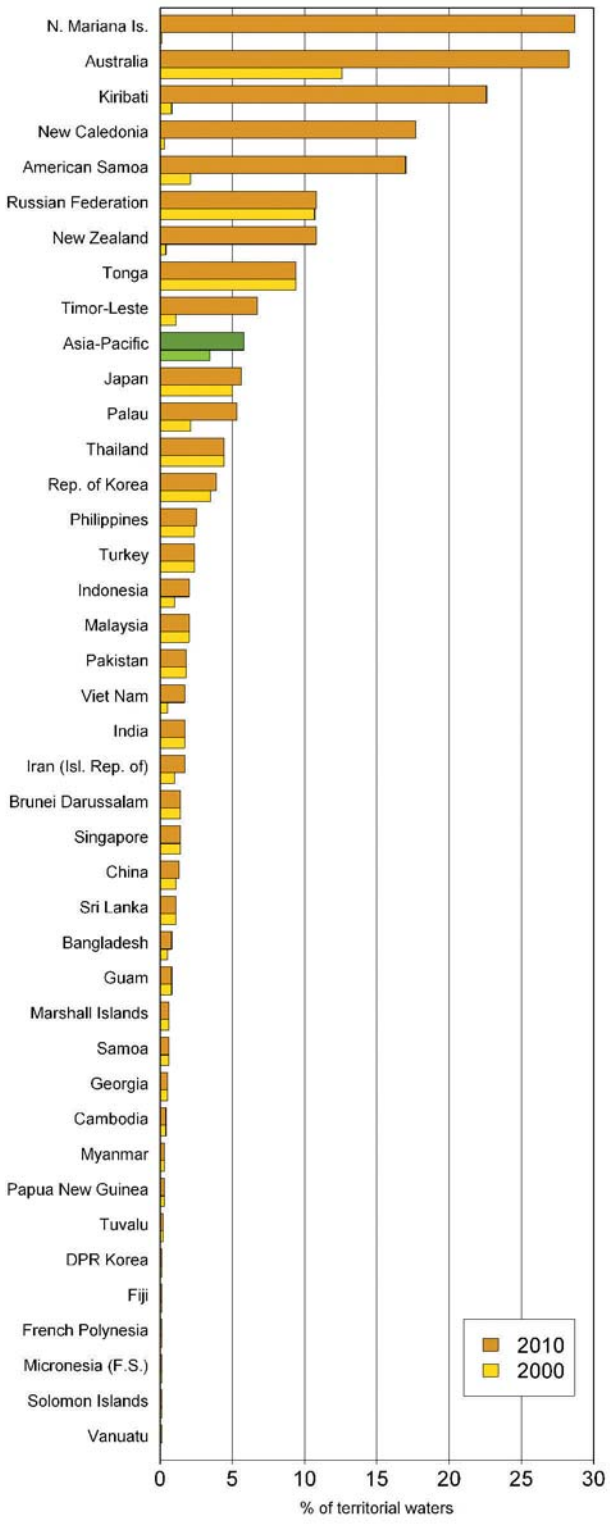
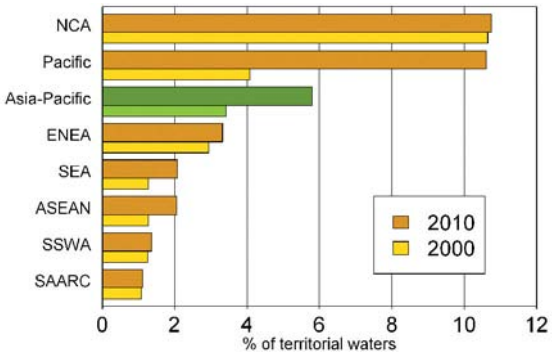


Figure F.4-3
Protected marine areas as a percentage of territorial waters, Asian and Pacific subregions and other groupings, 2000 and 2010



The share of protected terrestrial areas in the Asian and Pacific region, at 10.3 per cent in 2010, is significantly short of the 17 per cent target for 2020 set by the Convention. However, with new national investments, the 2020 target may be achievable.

The Asian and Pacific region increased its share of protected terrestrial area as a percentage of its total surface area by less than 1 percentage point, compared with a global increase in share of 1.3 percentage points. The establishment of protected areas has stagnated in the SAARC grouping and in almost one third of countries in the Asian and Pacific region since 2000, with marginal increases in several countries facing challenges related to biodiversity protection, in particular those in South-East Asia.

East and North-East Asia, however, has protected almost 16.0 per cent of its terrestrial area, and ASEAN countries 13.8 per cent. The Central Asian grouping, on the other hand, has protected only 3.0 per cent of its terrestrial area, reflecting in large part the geography, low population densities and the importance of extractive industries. The share of protected terrestrial areas in the world as a whole (12.4 per cent) is higher than that in Asia and the Pacific.

Since 2000, the largest growth in protected terrestrial areas has been observed mostly in Cambodia and in Pacific island countries and

territories. Cambodia, Kiribati, New Caledonia, Northern Mariana Islands and Tonga have recorded the largest proportional increases in protected terrestrial areas (see figures F.4-4 and F.4-5).

Figure F.4-4
Protected terrestrial areas as a percentage of surface area, Asia and the Pacific, 2000 and 2010

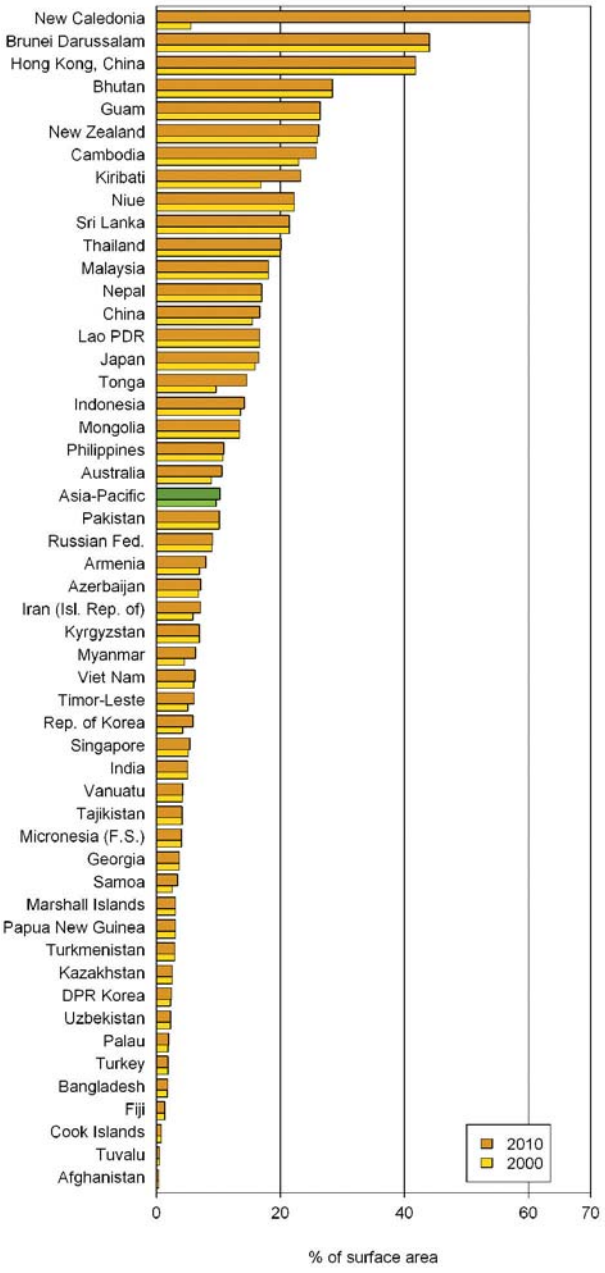
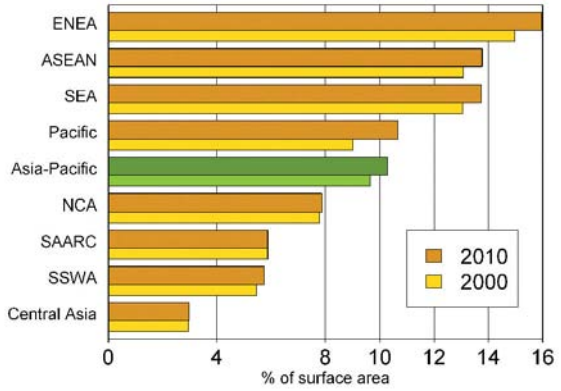


Figure F.4-5
Protected terrestrial areas, Asian and Pacific subregions and other groupings, 2000 and 2010



In the period 2005-2011, total forest cover in the Asian and Pacific region increased slightly, while it slightly decreased in the world as a whole.

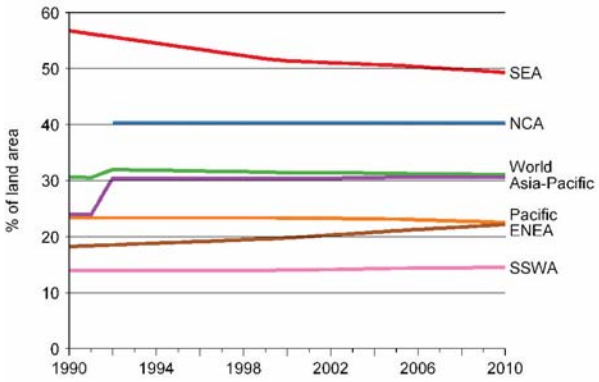
The region increased the share of total forest cover as a percentage of land area by 0.1 percentage points from 2005 to 2011, rising to 30.6 per cent. In the same period, the world as a whole lost 0.2 percentage points of its forests share, declining to 31.0 per cent.

Within the region, South-East Asia and North and Central Asia have the highest proportions of forest cover (49.1 per cent and 40.3 per cent, respectively), with the Pacific having relatively low proportions of forest cover (22.4 per cent). However, since 1990, the proportion of forest cover in South-East Asia has been declining, reflecting losses in Cambodia, Indonesia, Myanmar and Timor-Leste.

During 2005-2010, regional forest cover trends were strongly influenced by afforestation (the planting of new forests in areas not previously forested) and reforestation (replacement of lost forests) in large countries such as China, India and the Russian Federation.

Other countries and areas in the region reporting increases in forest cover include Bhutan, Fiji, French Polynesia, the Philippines, Turkey and Viet Nam. Upper-middle-income economies as

Figure F.4-6
Forest cover as a percentage of land area, Asia and the Pacific and world, 1990-2010



a group have increased forest cover, which is not the case for the other income groupings. Decreases in forest cover have been recorded in low-income economies (1.2 percentage points); however, despite these losses, the overall forest cover percentage has not yet reached the low levels of high-income economies. Between 2005 and 2011, the countries that lost the largest proportions of forest cover include most South-East Asian countries, the Pacific island countries and territories of Niue, Northern Mariana Islands and Papua New Guinea, and the Democratic People's Republic of Korea.

Box F.4-1
Assessing resource use

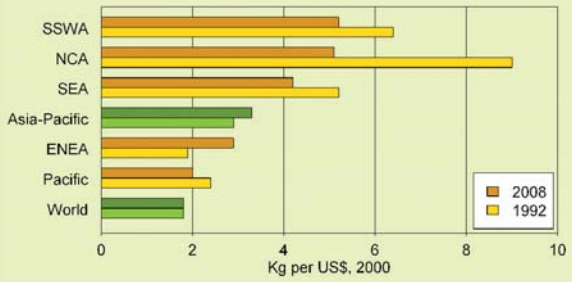
Forest areas in Asia and the Pacific are continuously under pressure from demand for resources, not only forest resources such as timber, but also other types of resources that require land. In a context of high and volatile energy and commodity costs and increasingly evident resource constraints, a resource-intensive growth pattern also translates to an economy with a higher exposure to risk due to rising resource costs and disruptions in supply, especially for the most vulnerable in society.

Transforming resources into products in markets is also an energy-intensive activity; energy is needed to extract resources, to transport resources to factories and to process them for final use. Carbon dioxide emissions are therefore strongly correlated with domestic material consumption, so action to track and to reduce resource use can be considered climate action.

Reducing environmental pressures and bringing rates of resource use to within sustainable limits require the economy to become more efficient with respect to its use of resources. Resource use can be assessed using statistics on the physical flows of materials, following the newly revised System of Environmental-Economic Accounting Central Framework.[a]

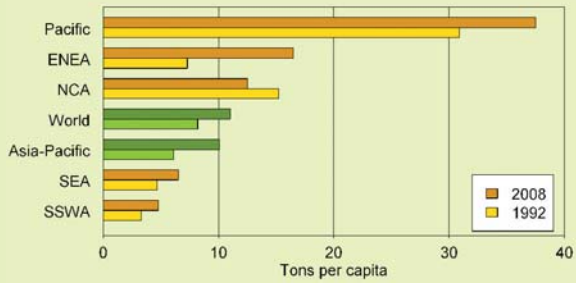
The Commonwealth Scientific and Industrial Research Organization (CSIRO), which is Australia's national science agency, and the United Nations Environment Programme (UNEP) have established the Asia-Pacific Material Flows Online Database.[b] The data show that, in 2008, the Asian and Pacific region[c] as a whole used almost twice the input of resources as the global economy for creating each unit of GDP. This is partly due to the large investments that have been made in meeting basic infrastructure needs and in raising the standards of living of many of those in poverty, but it is also related to the economic growth strategies employed, as well as prevailing consumption patterns.

Domestic material consumption intensity, Asia and the Pacific, its subregions and the world, 1992 and 2008 (kg per United States dollar, 2000)



In addition, while the economies of other regions of the world are becoming less resource-intensive over time, the Asian and Pacific economy required more resources to produce one dollar of GDP in 2008 than it did in 1992. The chart below shows that, while the per capita domestic material consumption of the region is still below the global figure, the gap narrowed significantly between 1992 and 2008.

Per capita domestic material consumption, Asia and the Pacific, its subregions and the world, 1992 and 2008 (tons per capita)



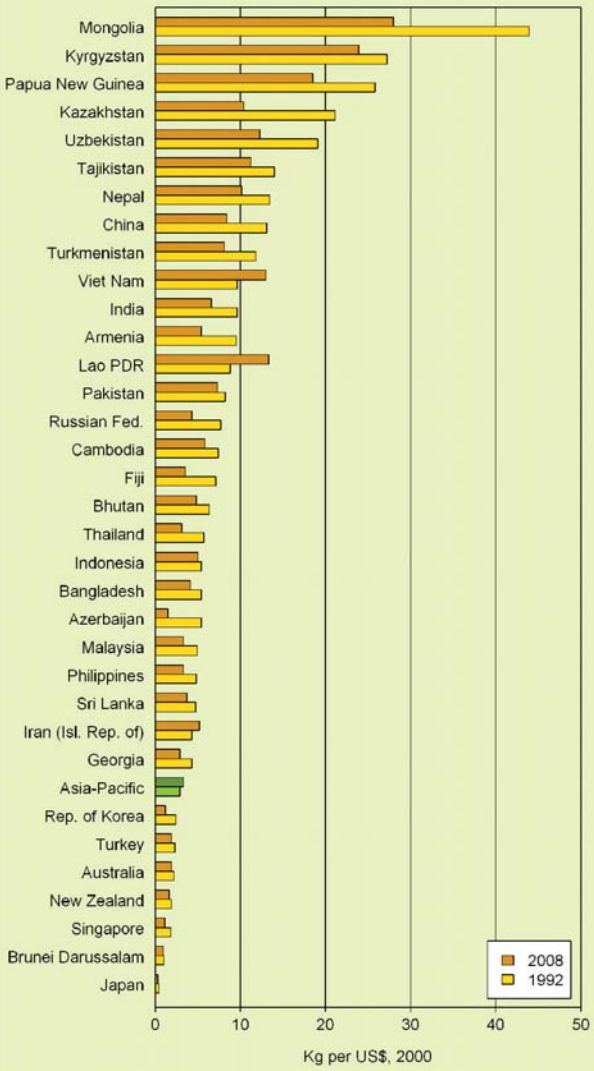
The CSIRO and UNEP Asia-Pacific Material Flows Online Database covers four material categories: biomass, fossil fuels, metal ores and industrial minerals, and construction minerals. Further analysis of the data shows that construction minerals accounted for approximately 70 per cent of the region's resource use, measured in terms of mass, as of 2005, and is the fastest growing category of material use.

Biomass accounts for a diminishing proportion of resource use overall, but total resource extraction increased by a factor of three from 1970 to 2005. This trend has been primarily influenced by changing lifestyles and changing consumption patterns, including an increased consumption of animal protein.

Resource efficiency is increasingly becoming an economic risk-management strategy on both economic and social fronts. While there is a need to continue to elevate the standard of living, this must be achieved based on resource-efficient, rather than resource-intensive, growth strategies. This is acknowledged in national development strategies in the Asian and Pacific region and beyond.

In 2013, the International Resource Panel[d] launched a process and review of material flow databases globally, with a view to the long-term consolidation of global data on material use.

Domestic material consumption intensity, Asia and the Pacific, 1992 and 2008



Source: Commonwealth Scientific and Industrial Research Organization and United Nations Environment Programme, CSIRO and UNEP Asia-Pacific Material Flows Online Database.

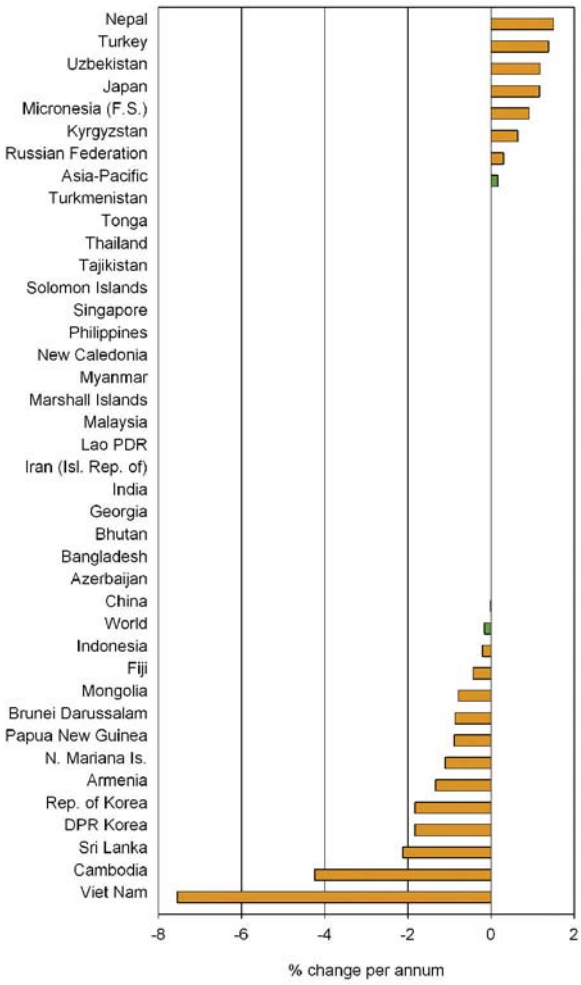
[a] Available from http://unstats.un.org/unsd/envaccounting/White_cover.pdf.
[b] See www.csiro.au/AsiaPacificMaterialFlows. Data are prepared using Eurostat methodology. Available from http://epp.eurostat.ec.europa.eu/portal/page/portal/euroindicators/national_accounts/methodology.
[c] The figures cover the ESCAP region and are based on data prepared for ESCAP by the Commonwealth Scientific and Industrial Research Organization. The CSIRO and UNEP Asia-Pacific Material Flows Online Database covers the UNEP-defined Asian and Pacific region.
[d] The International Resource Panel was established in 2007 by the United Nations Environment Programme as an independent scientific body and leading authority on global resource use, in response to the need for scientific information on resource use as a basis for more effective policy action.

The loss of primary forests (in general, forests that are largely undisturbed by human activity, compared with planted forests) remains a special concern.

There is an increasing awareness of the multiple benefits primary forests provide in terms of food security, rural livelihood support, biodiversity, and cultural and aesthetic values. Between 2005 and 2010, the annual average rates of loss of primary forests were the highest in the Democratic People's Republic of Korea, Northern Mariana Islands, Papua New Guinea and the Republic of Korea, and the losses occurred at faster rates than those in the period 2000 to 2005.

While South-East Asia and South and South-West Asia historically have had dramatic losses in primary forest cover – Cambodia, Indonesia, Nepal, Sri Lanka and Viet Nam are among the countries with the highest rates of primary forest loss in 2000-2005 – the subregions managed to slow the rates of primary forest loss significantly in the second half of the decade.

Figure F.4-8
Percentages of annual change in primary forests, Asia and the Pacific, 1990-2010



Box F.4-2
Building statistical capacity for measuring sustainable development

In 2012, the United Nations Conference on Sustainable Development (Rio+20) resulted in renewed international commitments to sustainable development, which is defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs."[a]

The need for better statistical capacity to support effective action on sustainable development in all of its dimensions was recognized at the Rio+20 Conference. While data needs exist in all domains, it is clear that capacity-building is required to improve the availability and quality of environmental statistics. There is now growing global and regional impetus on this issue.

One important approach to measuring environmental sustainability is to measure and monitor the stocks of natural capital in countries. A nation's capital (or stock of assets) is the source of inputs into an economy or, ultimately, into the improvement of the welfare of a society. Measures for natural capital stocks include, for example, primary forest area. The System of Environmental-Economic Accounting Central Framework, endorsed by the United Nations Statistical Commission in 2012 as the initial standard for environmental-economic accounting, has defined environmental assets as the "naturally occurring living and non-living components of the Earth, together comprising the bio-physical environment, that may provide benefits to humanity." Further, the System of Environmental-Economic Accounting Guidelines for Experimental Ecosystem Accounts expands the concept of environmental assets to include the various qualities of ecosystems that lead to benefits via ecosystem services, such as the carbon cycle and biodiversity.

Other major research and methodological developments related to the measurement of sustainability have

emerged from the Organisation for Economic Co-operation and Development,[b] the United Nations Economic Commission for Europe and the Statistical Office of the European Communities.[c] The time is ripe for the Asian and Pacific region to begin building capacities to implement and further contribute to these and other international developments towards better measures of sustainable development.

[a] See General Assembly resolution 42/187 of 11 December 1987.
[b] Organisation for Economic Co-operation and Development, *Measuring Capital: OECD Manual – Measurement of Capital Stocks, Consumption of Fixed Capital and Capital Services* (Paris, 2011). Available from www.oecd.org/std/na/1876369.pdf.
[c] United Nations Economic Commission for Europe, *Measuring Sustainable Development* (United Nations, New York and Geneva, 2009). Available from http://unstats.un.org/unsd/broaderprogress/pdf/Measuring_sustainable_development%20(UNECE,OECD,Eurostat).pdf.

Further reading

ESCAP, Asian Development Bank and United Nations Environment Programme. *Green Growth, Resources and Resilience: Environmental Sustainability in Asia and the Pacific*. Bangkok: United Nations and Asian Development Bank, 2012.

Food and Agriculture Organization of the United Nations. *State of the World's Forests*. Rome, 2012. Available from www.fao.org/forestry/sofo/en/.

United Nations Environment Programme and Commonwealth Scientific and Industrial Research Organization. *Resource Efficiency: Economics and Outlook for Asia and the Pacific*. Bangkok: United Nations Environment Programme, 2011.

Technical notes

Glossary

Marine areas protected (as adopted by IUCN): All areas of intertidal or subtidal terrain are covered, together with their overlying water and associated flora, fauna and historical and cultural features, that have been reserved by law or other effective means to protect part of, or the entire, enclosed environment. Only protected areas that are nationally designated are included in the indicators.

Terrestrial areas protected: Refers to the total land area dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means. Only protected areas that are nationally designated are included in this indicator. This indicator is expressed as a percentage of the surface area.

Forest: The two criteria for a forest area are: (1) an area that spans more than half a hectare, with trees higher than 5 m; and (2) a canopy cover of more than 10 per cent, or trees able to reach that threshold in situ.

Primary forest: Refers to forest or other wooded land of native species where there are no clearly visible indications of human activities and the ecological processes are not significantly disturbed. Includes areas where collection of non-wood forest products occurs, provided that the human impact is small. Some trees may have been removed.

Threatened species: Species listed by IUCN as critically endangered, endangered or vulnerable. IUCN classification uses quantitative criteria, based on population size, rate of decline and area of distribution, to assign species to the above categories. Listing in a higher extinction risk category implies a higher expectation of extinction; and, over the specified time frames,

more species listed in a higher category are expected to become extinct than those in a lower one (without effective conservation action).

Indicators

Marine areas protected (km², percentage of territorial water)

The overall surface of protected marine areas in km² and as a percentage of territorial water. **Aggregate calculations:** Sum of individual country values (km²); weighted averages using total territorial water area as weight (percentage of territorial water). Missing data are not imputed.

Terrestrial areas protected (km², percentage of surface area)

The terrestrial areas protected, expressed in km² and as a percentage of surface area. **Aggregate calculations:** Sum of individual country values (km²); weighted averages using total surface area as weight (percentage of surface area). Missing data are not imputed.

Forest area (km², percentage of land area, percentage change per annum)

Total forest area in km², as a percentage of total land area, as percentage change in total forest area in a period of 10 years. **Aggregate calculations:** Sum of individual country values (km²); weighted averages using total land area as weight; average annual growth of aggregate values (percentage of land area, percentage change per annum). Missing data are not imputed.

Primary forest (percentage of forest area, percentage change per annum)

Primary forest, expressed as a share of primary forest of the total forest area, as percentage change per annum of primary forest in a period of 10 years. **Aggregate calculations:** Weighted averages using forest area as weight (percentage of forest area); average annual growth of aggregate values (percentage change per annum). Missing data are not imputed.

Threatened species, total by taxonomic group (number of species)

The number of threatened species on the IUCN Red List of Threatened Species. Data are presented for each country by taxonomic group: mammals, birds, reptiles, amphibians, fishes, molluscs, other invertebrates and plants.

Sources

Source of forest data: Food and Agriculture Organization of the United Nations (FAO), FAOSTAT. Global Forest Resources Assessment 2010 is the main source of forest area data in FAOSTAT. Data were provided by countries for the years 1990, 2000, 2005 and 2010. Data for intermediate years were estimated by FAO using linear interpolation and tabulation. **Data obtained:** 16 April 2013.

Source of primary forest data: FAO Global Forest Resources Assessment (FRA 2010). Countries provide FAO with data in response to a common questionnaire. **Data obtained:** 7 January 2011.

Source of marine and terrestrial areas protected data: Millennium Indicators Database. The data source is the World Database on Protected Areas, the most comprehensive global data set on protected marine and terrestrial areas available. It is a joint product of UNEP and IUCN, prepared by the UNEP World Conservation Monitoring Centre and the IUCN World Commission on Protected Areas, working with Governments, the secretariats of multilateral environmental agreements and collaborating non-governmental organizations. Data are reported by countries to the World Database on Protected Areas. Quality control criteria are applied to ensure consistency and comparability of World Database on Protected Areas data. New data are validated at the World Conservation Monitoring Centre through a number of tools and translated into the standard World Database on Protected Areas data structure. Discrepancies between World Database on Protected Areas data and new data are resolved in communication with data providers. Processed data are fully integrated into the published World Database on Protected Areas. **Data obtained:** 26 February 2013.

Source of threatened species data: IUCN Red List of Threatened Species, version 2012.2: table 5. The numbers of species listed in each category in the Red List change each time it is updated. Factors that determine such changes

include species being assessed and added to the IUCN Red List for the first time, and species being reassessed and moved into a different category of threat. Summaries of the numbers of species in each Red List category by taxonomic group and by country are provided for the current IUCN Red List. Figures represent species only and do not include subspecies, varieties or geographically isolated subpopulations or stocks.
Data obtained: 28 February 2013.

F.4.1 Protected areas

	Marine areas protected						Terrestrial areas protected					
	Km²			% of territorial water			Km²			% of surface area		
	1990	2000	2010	1990	2000	2010	1990	2000	2010	1990	2000	2010
East and North-East Asia	**11 846**	**26 175**	**29 385**	**1.3**	**2.9**	**3.3**	**1 388 983**	**1 724 581**	**1 837 953**	**12.1**	**15.0**	**16.0**
China	1 412	4 120	4 826	0.4	1.1	1.3	1 267 366	1 447 885	1 557 431	13.5	15.5	16.6
DPR Korea	59	59	60	0.1	0.1	0.1	2 650	2 762	2 931	2.2	2.3	2.4
Hong Kong, China	0	0	0	0.0	0.0	0.0	453	460	460	41.1	41.8	41.8
Japan	7 704	19 296	21 534	2.0	5.0	5.6	50 021	59 591	61 641	13.4	15.9	16.5
Macao, China	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
Mongolia	0	0	0	0.0	0.0	0.0	64 243	209 610	209 610	4.1	13.4	13.4
Republic of Korea	2 671	2 700	2 965	3.5	3.5	3.9	4 249	4 273	5 879	4.3	4.3	5.9
South-East Asia	**26 475**	**59 583**	**94 989**	**0.6**	**1.3**	**2.1**	**392 007**	**587 215**	**618 534**	**8.7**	**13.1**	**13.7**
Brunei Darussalam	44	44	44	1.4	1.4	1.4	2 188	2 623	2 623	36.7	44.0	44.0
Cambodia	0	78	84	0.0	0.4	0.4	60	41 770	47 034	0.0	22.9	25.8
Indonesia	16 010	34 019	65 975	0.5	1.0	2.0	191 254	258 342	269 774	10.0	13.6	14.2
Lao PDR	0	0	0	0.0	0.0	0.0	3 441	38 433	38 433	1.5	16.6	16.6
Malaysia	1 940	2 555	2 555	1.5	2.0	2.0	56 688	59 978	60 045	17.1	18.1	18.1
Myanmar	432	476	476	0.3	0.3	0.3	21 121	30 082	42 639	3.1	4.5	6.3
Philippines	3 062	16 453	16 754	0.5	2.4	2.5	26 087	32 136	32 454	8.7	10.8	10.9
Singapore	0	9	9	0.0	1.4	1.4	30	31	32	5.0	5.2	5.4
Thailand	4 395	4 804	4 804	4.0	4.4	4.4	76 193	103 155	104 024	14.7	19.9	20.1
Timor-Leste	0	171	1 007	0.0	1.1	6.7	0	767	908	0.0	5.1	6.1
Viet Nam	592	974	3 281	0.3	0.5	1.7	14 944	19 898	20 568	4.5	6.0	6.2
South and South-West Asia	**6 380**	**6 979**	**7 586**	**1.2**	**1.3**	**1.4**	**358 205**	**400 614**	**420 279**	**4.9**	**5.5**	**5.7**
Afghanistan	0	0	0	0.0	0.0	0.0	2 359	2 359	2 359	0.4	0.4	0.4
Bangladesh	155	205	323	0.4	0.5	0.8	2 391	2 479	2 536	1.7	1.8	1.8
Bhutan	0	0	0	0.0	0.0	0.0	5 689	11 320	11 320	14.3	28.4	28.4
India	3 056	3 302	3 302	1.6	1.7	1.7	143 405	153 787	153 826	4.7	5.0	5.0
Iran (Islamic Rep. of)	627	627	1 116	1.0	1.0	1.7	85 251	95 676	115 218	5.2	5.9	7.1
Maldives	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
Nepal	0	0	0	0.0	0.0	0.0	11 360	25 108	25 108	7.7	17.0	17.0
Pakistan	578	578	578	1.8	1.8	1.8	80 814	80 814	80 814	10.1	10.1	10.1
Sri Lanka	29	332	332	0.1	1.1	1.1	13 495	14 302	14 302	20.3	21.5	21.5
Turkey	1 935	1 935	1 935	2.4	2.4	2.4	13 442	14 770	14 797	1.7	1.9	1.9
North and Central Asia	**28 442**	**139 437**	**140 334**	**2.2**	**10.7**	**10.8**	**954 332**	**1 635 256**	**1 654 581**		**7.8**	**7.9**
Armenia	0	0	0	0.0	0.0	0.0	2 058	2 058	2 372	6.9	6.9	8.0
Azerbaijan	0	0	0	0.0	0.0	0.0	5 352	5 835	6 176	6.2	6.8	7.2
Georgia	10	28	28	0.2	0.5	0.5	1 933	2 556	2 556	2.8	3.7	3.7
Kazakhstan	0	0	0	0.0	0.0	0.0	64 738	67 957	67 957	2.4	2.5	2.5
Kyrgyzstan	0	0	0	0.0	0.0	0.0	12 710	13 880	13 880	6.4	6.9	6.9
Russian Federation	28 432	139 409	140 306	2.2	10.7	10.8	841 189	1 512 924	1 531 593	5.0	9.0	9.1
Tajikistan	0	0	0	0.0	0.0	0.0	2 754	5 884	5 884	1.9	4.1	4.1
Turkmenistan	0	0	0	0.0	0.0	0.0	14 613	14 613	14 613	3.0	3.0	3.0
Uzbekistan	0	0	0	0.0	0.0	0.0	8 984	9 549	9 549	2.1	2.3	2.3
Pacific	**105 699**	**132 213**	**342 411**	**3.3**	**4.1**	**10.6**	**656 662**	**769 399**	**912 853**	**7.7**	**9.0**	**10.7**
American Samoa	203	203	1 672	2.1	2.1	17.0	1	1	1	0.3	0.3	0.3
Australia	101 580	117 905	264 333	10.9	12.6	28.3	577 175	682 663	814 699	7.5	8.8	10.6
Cook Islands	1	13	13	0.0	0.0	0.0	0	2	2	0.1	0.8	0.8
Fiji	112	117	117	0.1	0.1	0.1	205	256	256	1.1	1.3	1.3
French Polynesia	28	148	148	0.0	0.1	0.1	8	13	13	0.2	0.4	0.4
Guam	26	35	35	0.6	0.8	0.8	143	148	148	25.5	26.4	26.4
Kiribati	216	618	17 503	0.3	0.8	22.6	52	173	240	5.0	16.8	23.2
Marshall Islands	0	692	692	0.0	0.6	0.6	0	9	9	0.0	3.1	3.1
Micronesia (F.S.)	39	56	56	0.0	0.1	0.1	22	33	33	2.7	4.0	4.0
Nauru	0	0	0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
New Caledonia	322	381	19 646	0.3	0.3	17.7	1 059	1 060	11 521	5.5	5.5	60.2
New Zealand	644	751	19 451	0.4	0.4	10.8	68 428	69 943	70 660	25.4	25.9	26.2
Niue	0	1	1	0.0	0.0	0.0	0	60	60	0.0	22.2	22.2
Northern Mariana Islands	5	12	7 336	0.0	0.1	28.7	4	5	64	0.8	0.9	12.8
Palau	14	62	156	0.5	2.1	5.3	1	9	10	0.3	1.9	2.0
Papua New Guinea	2 402	2 403	2 403	0.3	0.3	0.3	9 000	14 320	14 366	1.9	3.1	3.1
Samoa	53	55	55	0.5	0.6	0.6	69	73	99	2.4	2.5	3.4
Solomon Islands	0	264	264	0.0	0.1	0.1	16	27	27	0.1	0.1	0.1
Tonga	31	8 423	8 435	0.0	9.4	9.4	11	74	111	1.4	9.6	14.5
Tuvalu	0	36	36	0.0	0.2	0.2	0	0	0	0.0	0.4	0.4
Vanuatu	23	38	59	0.0	0.0	0.1	469	530	535	3.7	4.2	4.3
Asia and the Pacific	**178 842**	**364 387**	**614 705**	**1.7**	**3.4**	**5.8**	**3 750 189**	**5 117 066**	**5 444 201**	**8.8**	**9.7**	**10.3**
Developed countries	109 928	137 952	305 318	7.3	9.2	20.3	695 624	812 197	947 000	8.3	9.7	11.3
Developing countries	68 914	226 435	309 387	0.8	2.5	3.4	3 054 565	4 304 868	4 497 201	8.9	9.6	10.1
LLDC	0	0	0				198 301	406 606	407 262	3.3	6.0	6.0
LDC	879	1 941	19 807	0.1	0.3	3.0	47 028	153 122	171 237	2.3	7.2	8.0
ASEAN	26 475	59 412	93 982	0.6	1.3	2.1	392 007	586 448	617 626	8.7	13.1	13.8
ECO	3 140	3 140	3 629	1.8	1.8	2.0	291 017	311 338	331 248	4.7	4.0	4.2
SAARC	3 818	4 417	4 535	0.9	1.1	1.1	259 513	290 168	290 264	5.3	5.9	5.9
Central Asia	10	28	28	0.2	0.5	0.5	113 143	122 332	122 988		3.0	3.0
Pacific island dev. econ.	3 475	13 557	58 627	0.2	0.6	2.8	11 059	16 793	27 495	2.0	3.0	4.9
Low income econ.	646	818	943	0.3	0.3	0.3	55 406	124 323	142 371	2.1	5.5	6.3
Lower middle income econ.	26 213	68 523	120 841	0.4	1.1	2.0	566 190	849 067	862 163	6.2	9.0	9.1
Upper middle income econ.	38 958	153 751	157 406	1.8	7.0	7.1	2 424 834	3 322 804	3 471 864	11.8	10.1	10.6
High income econ.	113 024	141 281	335 501	5.8	7.2	17.1	703 759	820 810	967 742	8.3	9.7	11.4
Africa	**19 131**	**35 340**	**45 478**	**1.7**	**3.2**	**4.1**	**2 878 536**	**2 962 232**	**3 083 598**	**9.7**	**10.3**	**10.7**
Europe	**39 347**	**56 383**	**101 499**	**3.0**	**4.3**	**7.7**	**530 874**	**710 133**	**828 787**	**10.2**	**12.1**	**14.0**
Latin America and Carib.	**59 318**	**197 628**	**240 918**	**2.7**	**8.9**	**10.8**	**1 995 537**	**3 151 036**	**4 164 246**	**9.7**	**15.3**	**20.3**
North America	**283 917**	**332 802**	**362 213**	**7.6**	**8.9**	**9.7**	**2 483 357**	**2 604 598**	**2 769 530**	**9.0**	**9.7**	**10.5**
World	**581 260**	**991 960**	**1 370 958**	**3.0**	**5.1**	**7.1**	**11 790 540**	**15 192 275**	**16 941 990**	**9.1**	**11.0**	**12.4**

F.4.2 Forest areas

	Forest area								Primary forest				
	Km²			% of land area			% change per annum		% of forest area			% change per annum	
	1990	2005	2011	1990	2005	2011	90-00	00-10	2000	2005	2010	90-00	00-10
East and North-East Asia	**2 091 976**	**2 418 409**	**2 571 825**	**18.2**	**21.1**	**22.4**	**0.8**	**1.2**	**11.7**	**10.7**	**9.9**	**-0.2**	**-0.5**
China	1 571 406	1 930 439	2 096 239	16.8	20.7	22.5	1.2	1.6	6.6	6.0	5.6	0.0	0.0
DPR Korea	82 010	62 990	55 394	68.1	52.3	46.0	-1.7	-2.0	13.8	13.8	13.8	-1.7	-2.0
Hong Kong, China													
Japan	249 500	249 350	249 878	68.4	68.4	68.6	0.0	0.0	16.3	17.8	19.0	0.7	1.6
Macao, China													
Mongolia	125 360	113 080	108 160	8.1	7.3	7.0	-0.7	-0.7	47.3	47.3	47.3	-0.9	-0.7
Republic of Korea	63 700	62 550	62 154	64.5	64.6	64.0	-0.1	-0.1	68.0	57.8	47.5	0.0	-3.6
South-East Asia	**2 472 603**	**2 194 963**	**2 129 779**	**56.8**	**50.6**	**49.1**	**-1.0**	**-0.4**	**29.8**	**29.5**	**30.0**	**-0.1**	**-0.4**
Brunei Darussalam	4 130	3 890	3 782	78.4	73.8	71.8	-0.4	-0.4	72.5	70.7	69.2	-0.8	-0.9
Cambodia	129 440	107 310	99 666	73.3	60.8	56.5	-1.1	-1.3	3.9	3.0	3.2	-5.1	-3.4
Indonesia	1 185 450	978 570	937 470	65.4	54.0	51.7	-1.7	-0.5	49.6	48.8	50.0	0.0	-0.4
Lao PDR	173 140	161 420	156 728	75.0	69.9	67.9	-0.5	-0.5	9.0	9.2	9.5	0.0	0.0
Malaysia	223 760	208 900	203 692	68.1	63.6	62.0	-0.4	-0.5	17.7	18.3	18.7	0.0	0.0
Myanmar	392 180	333 210	314 634	60.0	51.0	48.2	-1.2	-0.9	9.2	9.6	10.0	0.0	0.0
Philippines	65 700	73 910	77 198	22.0	24.8	25.9	0.8	0.7	12.1	11.6	11.2	0.0	0.0
Singapore	23	23	23	3.4	3.3	3.3	0.0	-1.4	87.0	87.0	87.0	0.0	0.0
Thailand	195 490	188 980	189 868	38.3	37.0	37.2	-0.3	0.0	35.4	35.6	35.5	0.0	0.0
Timor-Leste	9 660	7 980	7 308	65.0	53.7	49.1	-1.2	-1.4					
Viet Nam	93 630	130 770	139 410	28.8	42.2	45.0	2.3	1.6	1.6	0.6	0.6	-6.9	-8.1
South and South-West Asia	**1 002 679**	**1 029 959**	**1 042 823**	**14.0**	**14.4**	**14.5**	**0.0**	**0.3**	**18.9**	**18.4**	**18.2**	**0.1**	**0.0**
Afghanistan	13 500	13 500	13 500	2.1	2.1	2.1	0.0	0.0					
Bangladesh	14 940	14 550	14 394	11.5	11.2	11.1	-0.2	-0.2	29.7	30.0	30.2	0.0	0.0
Bhutan	30 350	31 950	32 598	64.6	83.2	84.9	0.3	0.3	13.1	12.9	12.7	0.0	0.0
India	639 390	677 090	685 790	21.5	22.8	23.1	0.2	0.5	24.0	23.2	22.9	0.0	0.0
Iran (Islamic Rep. of)	110 750	110 750	110 750	6.8	6.8	6.8	0.0	0.0	1.8	1.8	1.8	0.0	0.0
Maldives	9	9	9	3.0	3.0	3.0	0.0	1.1					
Nepal	48 170	36 360	36 360	33.7	25.4	25.4	-2.1	-0.7	14.1	14.5	14.5	3.4	-0.4
Pakistan	25 270	19 020	16 440	3.3	2.5	2.1	-1.8	-2.2					
Sri Lanka	23 500	19 330	18 454	37.5	30.8	29.4	-1.2	-1.1	9.5	8.6	9.0	-2.6	-1.6
Turkey	96 800	107 400	114 528	12.6	14.0	14.9	0.5	1.1	8.8	8.6	8.6	2.0	0.8
North and Central Asia		**8 248 024**	**8 251 662**		**40.3**	**40.3**	**0.0**	**0.0**	**31.6**	**31.3**	**31.4**	**0.7**	**-0.1**
Armenia		2 830	2 578		9.9	9.1	-1.3	-1.5	4.9	4.9	5.0	-1.2	-1.4
Azerbaijan		9 360	9 360		11.3	11.3	0.0	0.0	42.7	42.7	42.7	0.0	0.0
Georgia		27 551	27 397		39.6	39.4	0.0	-0.1	18.1	18.1	18.2	0.0	0.0
Kazakhstan		33 370	33 034		1.2	1.2	-0.2	-0.2					
Kyrgyzstan		8 693	9 707		4.5	5.1	0.3	1.1	28.0	27.7	28.2	0.1	1.1
Russian Federation		8 087 900	8 091 500		49.4	49.4	0.0	0.0	31.9	31.6	31.7	0.7	-0.1
Tajikistan		4 100	4 100		2.9	2.9	0.0	0.0	72.4	72.4	72.4	0.0	0.0
Turkmenistan		41 270	41 270		8.8	8.8	0.0	0.0	2.5	2.5	2.5	0.0	0.0
Uzbekistan		32 950	32 716		7.7	7.7	0.5	0.2	1.8	1.7	2.2	0.0	2.4
Pacific	**1 985 858**	**1 967 348**	**1 903 022**	**23.4**	**23.2**	**22.4**	**0.0**	**-0.4**		**19.3**	**18.6**		
American Samoa	184	179	177	92.0	89.4	88.4	-0.2	0.0					
Australia	1 545 000	1 539 200	1 483 760	20.1	20.0	19.3	0.0	-0.4		3.4	3.4		
Cook Islands	149	155	155	62.1	64.6	64.6	0.4	0.3					
Fiji	9 529	9 973	10 174	52.2	54.6	55.7	0.3	0.3	45.4	44.9	44.3	-1.0	0.1
French Polynesia	550	1 300	1 600	15.0	35.5	43.7	6.7	4.0		30.8	25.8		
Guam	259	259	259	47.9	47.9	47.9	0.0	0.0					
Kiribati	122	122	122	15.0	15.0	15.0	0.0	-0.1					
Marshall Islands		126	126		70.2	70.2	0.0	0.3	63.3	63.3	63.3	0.0	0.0
Micronesia (F.S.)		640	642		91.4	91.7	0.0	0.0	68.9	71.9	74.8	1.0	0.9
Nauru													
New Caledonia	8 390	8 390	8 390	45.9	45.9	45.9	0.0	0.0	51.4	51.4	51.4	0.0	0.0
New Zealand	77 200	83 110	82 606	29.3	31.6	31.4	0.7	0.0		25.8	25.9		
Niue	206	191	185	79.2	73.5	71.2	-0.5	-0.3			32.3		
Northern Mariana Islands		311	302		67.7	65.5	-0.6	-0.6	28.2	28.9	26.4	-1.0	-1.2
Palau		403	403		87.6	87.6	0.4	0.1					
Papua New Guinea	315 230	294 370	285 838	69.6	65.0	63.1	-0.4	-0.5	98.0	96.3	91.2	-0.6	-1.2
Samoa	1 300	1 710	1 710	45.9	60.4	60.4	2.8	0.0					
Solomon Islands	23 240	22 410	22 074	83.0	80.1	78.9	-0.2	-0.2	48.7	49.3	49.9	0.0	0.0
Tonga	90	90	90	12.5	12.5	12.5	0.0	0.0	44.4	44.4	44.4	0.0	0.0
Tuvalu	10	10	10	33.3	33.3	33.3	0.0	0.0					
Vanuatu	4 400	4 400	4 400	36.1	36.1	36.1	0.0	0.0					
Asia and the Pacific	**16 047 432**	**15 858 703**	**15 899 111**	**24.0**	**30.5**	**30.6**	**0.0**	**0.1**	**28.7**	**25.6**	**25.4**	**0.4**	**0.0**
Developed countries	1 871 700	1 871 660	1 816 244	22.5	22.5	21.9	0.0	-0.3	16.3	6.3	6.5	0.7	11.4
Developing countries	5 681 416	13 987 043	14 082 867	24.5	32.1	32.3	-0.1	0.1	28.9	28.2	27.8	0.3	-0.2
LLDC		488 883	480 111		7.3	7.2	-0.5	-0.3	20.2	20.1	20.1	-0.4	-0.4
LDC	840 452	734 932	703 504	40.2	35.3	33.8	-0.9	-0.8	10.4	10.6	11.0	-0.2	-0.2
ASEAN	2 462 943	2 186 983	2 122 471	56.7	50.6	49.1	-1.0	-0.4	29.8	29.5	30.0	-0.1	-0.4
ECO	246 320	380 413	385 405	6.4	4.9	4.9	0.1	0.2					
SAARC	795 129	811 809	817 545	16.6	17.0	17.1	0.0	0.3	22.8	22.1	21.9	0.1	0.0
Central Asia		160 124	160 162		3.9	3.9	0.1	0.0	12.8	12.7	13.0	0.0	0.3
Pacific island dev. econ.	363 658	345 038	336 656	67.5	63.8	62.3	-0.4	-0.4	92.0	90.1	85.6	-0.6	-1.1
Low income econ.	680 240	580 713	547 755	36.3	26.3	24.8	-1.2	-1.0	10.2	10.4	10.8	-0.5	-0.5
Lower middle income econ.	2 725 361	2 610 291	2 567 423	31.7	28.7	28.2	-0.7	-0.1	41.0	39.7	39.1	-0.2	-0.6
Upper middle income econ.	2 198 409	10 718 970	10 890 840	17.5	33.3	33.8	0.2	0.3	26.8	26.1	25.9	0.6	-0.1
High income econ.	1 948 752	1 948 383	1 892 753	23.1	23.1	22.4	0.0	-0.3	27.9	8.3	8.2	0.3	5.6
Africa	**7 492 385**	**6 914 681**	**6 709 986**	**25.3**	**23.3**	**22.0**	**-0.6**	**-0.5**					
Europe	**1 561 016**	**1 925 324**	**1 967 941**	**33.0**	**33.7**	**34.5**	**1.9**	**0.4**					
Latin America and Carib.	**10 483 626**	**9 753 077**	**9 516 376**	**51.8**	**48.2**	**47.0**	**-0.5**	**-0.4**	**74.4**	**73.8**	**73.7**	**-0.3**	**-0.4**
North America	**6 064 736**	**6 122 462**	**6 145 429**	**32.6**	**32.8**	**32.9**	**0.1**	**0.1**	**39.0**	**39.1**	**39.2**	**0.1**	**0.1**
World	**41 682 516**	**40 609 648**	**40 274 668**	**30.6**	**31.2**	**31.0**	**-0.2**	**-0.1**	**42.4**	**40.0**	**39.7**	**-0.1**	**-0.2**

F.4.3 Threatened species

	Total	Mammals	Birds	Reptiles	Amphibians	Fishes	Molluscs	Other inverts
	Number of species							
	2012	2012	2012	2012	2012	2012	2012	2012
East and North-East Asia								
China	911	75	87	39	87	120	15	27
DPR Korea	60	9	25	1	1	14	0	2
Hong Kong, China	56	2	20	4	5	13	1	5
Japan	345	27	40	12	19	67	33	131
Macao, China	9	0	4	0	0	5	0	0
Mongolia	36	11	20	0	0	2	0	3
Republic of Korea	69	9	29	1	2	19	0	3
South-East Asia								
Brunei Darussalam	174	34	24	6	3	7	0	1
Cambodia	225	37	26	18	3	40	1	67
Indonesia	1 154	184	122	32	32	143	6	242
Lao PDR	195	45	24	16	5	54	16	5
Malaysia	1 196	70	45	28	47	68	32	211
Myanmar	271	46	44	28	0	41	3	63
Philippines	708	38	74	38	48	73	3	210
Singapore	275	11	15	5	0	25	0	162
Thailand	557	57	47	27	4	96	14	186
Timor-Leste	19	4	7	2	0	5	0	0
Viet Nam	512	54	45	41	16	73	17	97
South and South-West Asia								
Afghanistan	36	11	14	1	1	5	0	1
Bangladesh	124	34	31	22	1	17	0	2
Bhutan	61	27	18	2	1	3	0	1
India	935	94	80	31	74	212	6	117
Iran (Islamic Rep. of)	108	16	22	13	4	30	2	19
Maldives	62	2	0	3	0	18	0	39
Nepal	95	31	33	9	3	7	1	2
Pakistan	116	23	29	10	0	35	0	15
Sri Lanka	561	29	15	11	56	44	0	120
Turkey	179	17	16	20	11	70	18	18
North and Central Asia								
Armenia	40	9	13	7	0	3	1	6
Azerbaijan	48	7	15	9	1	10	2	4
Georgia	50	10	11	7	1	9	3	9
Kazakhstan	78	16	22	1	1	15	2	4
Kyrgyzstan	40	6	12	2	0	3	0	3
Russian Federation	201	31	83	8	0	36	8	24
Tajikistan	42	8	12	2	0	5	0	2
Turkmenistan	48	9	16	2	0	11	1	5
Uzbekistan	54	10	16	2	0	7	1	1
Pacific								
American Samoa	80	1	8	4	0	9	5	52
Australia	869	55	51	43	47	104	169	314
Cook Islands	55	1	15	2	0	11	0	25
Fiji	262	6	14	8	1	13	68	87
French Polynesia	169	1	33	1	0	27	34	26
Guam	37	2	14	2	0	9	6	0
Kiribati	92	1	6	1	0	11	1	72
Marshall Islands	87	2	4	2	0	12	1	66
Micronesia (F.S.)	155	7	10	5	0	20	4	104
Nauru	74	1	2	0	0	9	0	62
New Caledonia	477	9	15	53	0	30	27	86
New Zealand	154	9	70	13	4	23	5	10
Niue	44	2	8	3	0	8	0	23
Northern Mariana Islands	89	5	15	1	0	12	4	47
Palau	166	4	4	2	0	15	40	97
Papua New Guinea	457	39	37	11	11	45	2	169
Samoa	79	2	6	3	0	13	1	52
Solomon Islands	223	20	20	6	2	18	2	139
Tonga	62	2	5	2	0	12	4	33
Tuvalu	86	2	1	2	0	10	1	70
Vanuatu	127	8	9	3	0	15	4	78
Asia and the Pacific								
Developed countries								
Developing countries								
LLDC								
LDC								
ASEAN								
ECO								
SAARC								
Central Asia								
Pacific island dev. econ.								
Low income econ.								
Lower middle income econ.								
Upper middle income econ.								
High income econ.								
Africa								
Europe								
Latin America and Carib.								
North America								
World								

F.5. Natural disasters

In recent years, the Asian and Pacific region has been hit by a series of shocks. These include natural disasters, such as earthquakes, droughts or floods, while others are related to economic crises or rocketing food and energy prices, the result of a complex combination of shocks. Governments across the region can no longer afford to consider such events individually; they need a more comprehensive and systemic approach to building resilience. Resilience in this sense means the capacity of countries to withstand, adapt to and recover from natural disasters and major crises so that populations can continue to lead the lives they value. In this context, preparedness will save both lives and costs in the future.

Asia and the Pacific is the world's most disaster-prone region, registering the largest number of people affected, as well as the largest number of people killed, by disasters between 2002 and 2011.

Over the past three decades, the frequency of natural disasters has increased globally but the sharpest increase has been in the Asian and Pacific region (see figure F.5-1) partly as a result of better reporting, but also because of increasing exposure and vulnerability. Exposure to hazards has multiplied with the growth of unplanned urbanization and the concentration of people and economic activities in hazard-prone areas. In the past decade, a person living in Asia and the Pacific was 3.2 times more likely to be affected by a natural disaster than a person living in Africa, 5.5 times more likely than a person in Latin America and the Caribbean, almost 9 times more likely than a person living in North America and 67 times more likely than a person in Europe (see figure F.5-2). In the past decade (2002-2011), about 2.2 billion people in the Asian and Pacific region were affected by disasters and almost 750,000 were killed (see figure F.5-3). These last two numbers are the largest among the world's regions and represent almost 90 per cent and 65 per cent, respectively, of the global totals. The number of deaths in the region during this period is almost four times the number of deaths for the previous decade (1992-2001).

Figure F.5-1
Number of reported natural disasters, world regions, 1980-2011

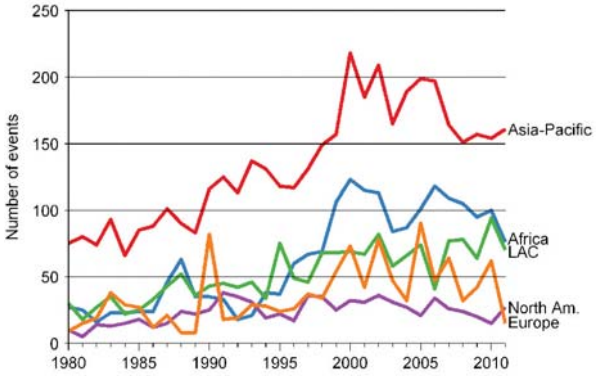
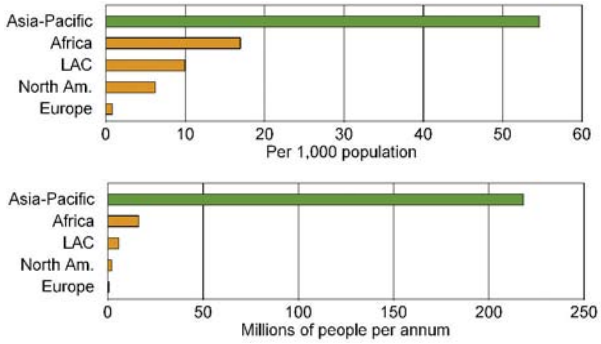


Figure F.5-2
People affected by natural disasters, world regions, 2002-2011



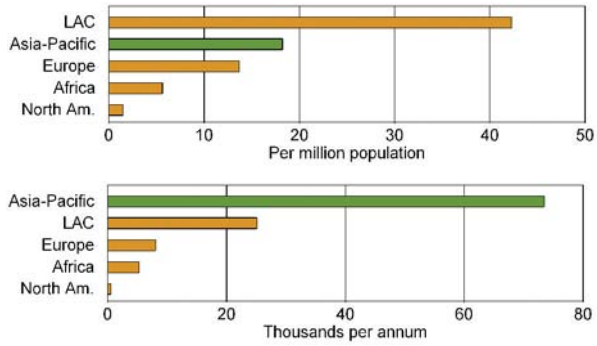
In the region, the highest percentage of deaths was observed in South-East Asia, at 47 per cent, followed by 28 per cent in South and South-West Asia. These two percentages changed greatly from the previous to the most recent decade; between 1992 and 2001, only 14 per cent of the region's total deaths were observed in South-East Asia, whereas 64 per cent of the deaths for that period were registered in South and South-West Asia.

According to the Emergency Events Database (EM-DAT) [1], the most frequently occurring hazards in the region are hydro-meteorological and they affect the largest number of people. Since 2000, more than 1.2 billion people have

[1] Centre for Research on the Epidemiology of Disasters, Emergency Events Database. Available from www.emdat.be (accessed 16 May 2013).

been exposed to 1,215 hydro-meteorological hazards alone, compared with the 355 million people exposed to 394 climatological, biological and geophysical disaster events during the same period. A study by the Intergovernmental Panel on Climate Change concluded that, while typhoons and other climate-related disasters are not increasing in number, more of them are stronger, making the region more susceptible to greater potential losses.[2] Furthermore, people and assets are increasingly concentrated in hazardous areas, with many cities located on earthquake fault lines and river deltas.

Figure F.5-3
People killed by natural disasters, world regions, 2002-2011

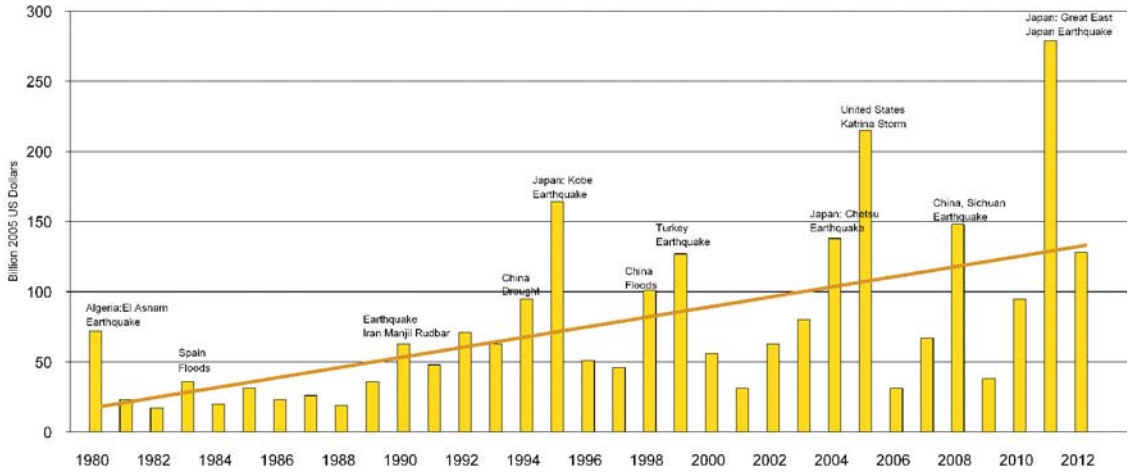


While losses and damage have been rising, low-income economies have been much harder hit in relative terms.

Globally, over the past 20 years, the pattern of losses has been dominated by the increasing frequency of disasters (see figure F.5-4). At the same time, disasters have been causing greater economic damage.[3] Even the most prepared countries are vulnerable to disasters, as was seen in the earthquake in Japan in 2011. In absolute terms, disasters may cause greater economic damage in high-income economies, which tend to have more developed infrastructure; however, in relative terms, low-income economies are much harder hit.

For example, in terms of income classification, between 2002 and 2011, the average annual impact of disasters as a percentage of GDP was more than twice as high in low-income economies than it was in lower-middle-income, upper-middle-income and high-income economies (see figure F.5-5). In the Asian and Pacific region, Bangladesh, Cambodia, Papua New Guinea, the Philippines, Solomon Islands, Tonga and Vanuatu are among the countries the

Figure F.5-4
Rising global economic losses and damage, 1980-2012

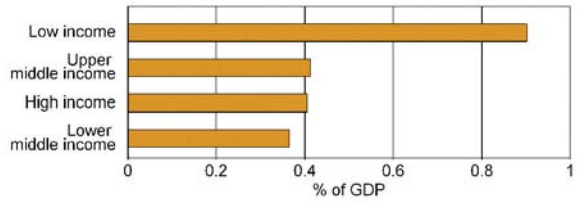


Notes: Labels in the figure show major disasters that contributed to significant damage and loss in selected years.

[2] Intergovernmental Panel on Climate Change, *Climate Change 2007: Synthesis Report* (Geneva, 2007).

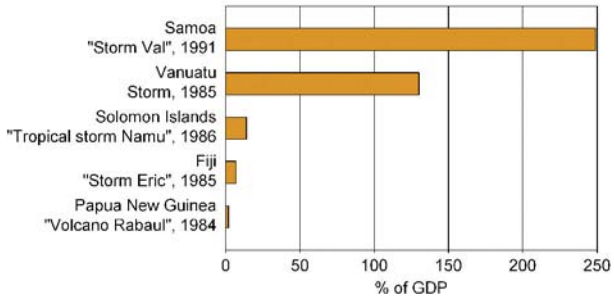
[3] ESCAP, *Building Resilience to Natural Disasters and Economic Crises,* (ST/ESCAP/2655) Theme study for the sixty-ninth ESCAP Commission session (Bangkok, 2013).

Figure F.5-5
Asian and Pacific average annual impact of disasters by income classification, 2002-2011



most at risk to natural disasters due to their high exposure and vulnerability to damage. The impact can be particularly severe in Pacific island developing economies, in many cases causing damage and losses that represent multiples of the country's total annual output (see figure F.5-6).

Figure F.5-6
Economic damage as a percentage of GDP in selected Pacific island developing economies



However, not all countries are equally vulnerable to disasters, and experiences have shown that money spent on reducing the risk of natural hazards is a sound investment. Because they are at a relatively high risk, countries such as Bangladesh, Indonesia, Japan and the Philippines have taken positive steps to mitigate the risks, which has resulted in lower human and economic losses from disasters. Studies by the United Nations Development Programme provide further evidence for such claims, showing that every dollar invested in preparedness saves seven dollars in the aftermath of a disaster.[4] In the United States of America, one dollar spent on mitigation generates four dollars in future saving. Furthermore, spending between 1993 and 2003 to mitigate the effects of floods, hurricanes, tornados and earthquakes is expected to save more than 220 lives and prevent almost 4,700 injuries over approximately 50 years. Yet only 1 per cent of international aid is spent on minimizing the impacts of such disasters. Investing in disaster risk reduction reaps direct benefits in financial and non-financial ways, and building resilience is key to achieving sustainable development.[5]

In an era of globalization, with ever-closer links between countries in the region, disasters caused by natural hazards can reverberate across national boundaries. Disasters therefore demand transnational solutions, enabled through an effective framework for regional cooperation by pooling resources for better preparedness and by the strengthening of early warning systems.

Box F.5-1
The pressing need to improve disaster databases, technical standards and methodologies

If Governments and their partners are to prepare effectively for disasters and respond rapidly, they need timely and reliable data. Currently, the lack of disaster databases presents a critical challenge that hinders evidence-based policymaking. This stems from data collection not being a priority after disasters due to (a) the presence of many stakeholders, (b) a lack of training among national disaster-management agency staff, and (c) the fact that, even though national statistical office staff have the skills, they may not be involved in collecting disaster-related data. Governments should therefore prepare in advance the systems and protocols for collecting data during emergencies, aiming to ensure consistency in reporting and methodology. The shortage of disaster data in many countries makes it challenging to document the cost-effectiveness of investments in preparedness and to integrate disaster risk reduction measures into national development plans.

Inconsistencies between global disaster data found on EM-DAT and those found on government-owned databases are another reason behind the need for reliable

[4] See www.dk.undp.org/content/undp/en/home/ourwork/get_involved/ActNow/.

[5] Multihazard Mitigation Council, *Natural Hazard Mitigation Saves: An Independent Study to Assess the Future Savings from Mitigation Activities* (Washington, DC, National Institute of Building Sciences, 2005).

data. For example, in Indonesia, the total number of deaths from disasters in 2011 was 129 according to EM-DAT, while the figure stated on the national online government-owned database was 360. Similarly, in Sri Lanka, the total deaths from disasters recorded in 2011 was 254 based on EM-DAT, compared with 130 deaths recorded on the national online government-owned database. Such discrepancies may be the result of using secondary sources of data for EM-DAT. Since countries form policies based on the data they themselves collect, there is an urgent need to build the capacity of countries to collect and compile disaster data.

Without reliable baseline data, effective disaster monitoring and poverty maps, it is difficult to locate and assist the poor and most vulnerable when disasters hit. A full vulnerability assessment and the establishment of baseline data, including poverty levels at the subnational level, is a good starting point. Until recently, both Governments and development partners would have been daunted by this task, feeling they lacked the necessary resources or skills. Nowadays, however, they can take advantage of new and innovative technology. A number of Governments, including those of Indonesia and the Philippines, have been using satellite data and geographic information systems to produce multi-hazard maps showing where the poor are at greatest risk. Indonesia has been using such techniques as the basis for one of its main anti-poverty, community empowerment programmes. Data are fed into an information management system that keeps track of all poverty programmes, resources and beneficiaries across the country. As a result, the Government has a clearer picture of the gaps and can design the necessary interventions.

Source: United Nations International Strategy for Disaster Reduction, from Desinventar Project Team, Disaster Information System Database. Available from www.desinventar.net/DesInventar/profiletab.jsp?countrycode=or (accessed 20 May 2012).

Box F.5-2
Drought and food scarcity – the creeping disaster

Though people often associate natural disasters with sudden-onset events such as floods, typhoons and tsunamis, slow-onset, chronic disasters such as droughts can be just as, if not more, devastating. Between 1982 and 2012, 1.3 billion people in China and India were affected by drought, and countries (mostly Australia, China and the Islamic Republic of Iran) suffered almost $27 million worth of damage. Droughts, combined with land and water stress, can result in declining agricultural productivity, which impacts the availability of food. Spikes in food prices will also hurt the poor, driving them into further hardship.

Many countries in the Asian and Pacific region still base much of their food security and economies on agriculture, highlighting the fact that drought is of particular concern for the region. Almost 90 per cent of water withdrawal in Asia and the Pacific is for agricultural purposes, though this varies significantly by country, with Malaysia and the Russian Federation withdrawing about 20 per cent for agriculture, and countries such as Afghanistan, Cambodia, India, Pakistan, Thailand and Uzbekistan withdrawing about 90 per cent or more. Water scarcity is already a great concern for the region with almost 380 million people without access to clean water, despite the fact that domestic consumption accounts for only 6 to 9 per cent of the total water withdrawal (for a further discussion, refer to topic F.3 on water availability and use).

The use and management of land can also affect the water cycle. Deforestation reduces cloud-forming evapotranspiration and thus decreases rainfall, resulting in a drier local climate and accelerated ecosystem changes. The use and management of land may not only affect agricultural production but also reduce the capacity of the soil to absorb rainfall, potentially making flooding worse (for a further discussion on forest cover in the region, refer to topic F.4 on biodiversity, protected areas and forests). Land degradation and desertification is a serious problem that affects the availability of agricultural land. For example, in South Asia and South-East Asia, 74 per cent of agricultural land has been severely affected by wind or water erosion or has been polluted to the extent that it is no longer productive.[a] Desertification affects about 1.4 billion hectares of land in Asia, with millions of people relying on it for survival.

Climate change risks worsen all of these problems, and increased water stress and drought, as well as decreased agricultural productivity, are forecasted for some areas. Such risks add further pressure on countries, which may also face more frequent and severe hydro-meteorological events such as storms and floods. Managing the resources that the region has left in a sustainable manner is the first step required to build resilience to these impending disasters.

[a] ESCAP, *Sustainable Agriculture and Food Security in Asia and the Pacific* (United Nations publication, Sales No. E.09.II.F.12).

Further reading

ESCAP. *Building Resilience to Natural Disasters and Major Economic Crises* (ST/ESCAP/2655) Theme study for the sixty-ninth ESCAP Commission session. Bangkok, 2013.

ESCAP and United Nations International Strategy for Disaster Reduction. *Asia Pacific Disaster Report 2012: Reducing Vulnerability and Exposure to Disasters* (ST/ESCAP/2639). Bangkok, 2012.

United Nations International Strategy for Disaster Reduction. *Global Assessment Report on Disaster Risk Reduction.* Geneva, 2013.

Technical notes

Glossary

Natural disaster event: According to the EM-DAT definition, a natural disaster event is a disruptive natural event that overwhelms local capacities to restore order, necessitating a request to the national or international level for external assistance. It is an unforeseen and often sudden event that causes great damage, destruction and human suffering. Though often caused by nature, disasters also have human origins. Wars and civil disturbances that destroy homelands and displace people are included among causes of disasters. Other causes are structural collapse, blizzards, drought, epidemics, earthquakes, explosions, fire, floods, hazardous material or transportation incidents (such as a chemical spill), hurricanes, nuclear incidents, tornados or volcanoes.

Types and hazards of natural disasters

Drought: Triggered by a lack of precipitation, an extended period characterized by a deficiency in water supply that is the result of constantly below-average precipitation. A drought can lead to agricultural losses, affect inland navigation and hydropower plants, and cause a lack of drinking water and famine.

Earthquake: Shaking and displacement of ground due to seismic waves; that is, the earthquake itself without secondary effects. Earthquakes are the result of a sudden release of stored energy in the Earth's crust that creates seismic waves. They can be of tectonic or volcanic origin. At the Earth's surface they are felt as a shaking or displacement of the ground. The energy released in the hypocentre can be measured in different frequency ranges. Different scales are thus used in measuring the magnitude of an earthquake according to a certain frequency range. They are surface wave magnitude, body wave magnitude, local magnitude and moment magnitude.

Flood: A significant rise of the water level in a stream, lake, reservoir or coastal region.

Storm: Any disturbed state of the atmosphere of an astronomical body, especially one that affects its surface and strongly implies severe weather. It may be marked by strong wind, thunder and lightning (a thunderstorm), heavy precipitation such as ice (an ice storm) or wind that carries some substance through the atmosphere (as in a dust storm, snowstorm or hailstorm).

Volcano: All volcanic activity such as rock fall, ash fall, lava streams and gases. Volcanic activity includes both the transport of magma or gases or both to the Earth's surface, which can be accompanied by tremors and eruptions, and the interaction of magma and water (for example, groundwater or crater lakes) underneath the Earth's surface, which can result in phreatic eruptions. Depending on the composition of the magma, eruptions can be explosive and effusive and result in variations of rock fall, ash fall, lava streams, pyroclastic flows or the emission of gases.

Wildfire: A fire burning uncontrolled, usually in wild lands, that can cause damage to forestry, agriculture, infrastructure and buildings.

Indicators

Mortalities from natural disasters (number per annum, per million population)

The number of recorded deaths from natural disasters, expressed as a number in a year or the average number over a period of years. **Indicator calculations:** Per million population figures are based on population figures (WPP2012). **Aggregate calculations:** Sum of individual country values (number per annum); sum of deaths divided by total population (per million population). Missing data are not imputed.

People affected by natural disasters (thousands per annum, per 1,000 population)

Affected people are those requiring immediate assistance, including food, water, shelter, sanitation and immediate medical assistance, during an emergency. The definition includes cases of infectious disease introduced in a region or a population that is normally free from that disease. **Indicator calculations:** Per 1,000 population figures are based on population figures (WPP2012). **Aggregate calculations:** Sum of individual country values (thousands per annum); sum of affected people divided by sum of population (per 1,000 population). Missing data are not imputed.

Economic damage from natural disasters (million 2005 United States dollars per annum, percentage of GDP)

Economic consequences of a disaster, usually direct (for example, damage to infrastructure, crops and housing) and indirect (for example, loss of revenues, unemployment and market destabilization). In each case, the registered figure represents the value of damage at the moment of the event; that is, the figures are true for the year of the event. **Indicator calculations:** Data are converted from millions of United States dollars to millions of 2005 United States dollars using implicit price deflators (NAMAD). The proportion of GDP is based on million United States dollar values from EM-DAT divided by GDP in current United States dollars. **Aggregate calculations:** Sum of individual country values (million 2005 United States dollars per annum); sum of the economic damage in million United States dollars divided by the sum of GDP in million United States dollars (percentage of GDP). Missing data are not imputed.

Source

Source of natural disaster data: EM-DAT. The database is based on various sources, including United Nations agencies, non-governmental organizations, insurance companies, research institutes and press agencies. **Data obtained:** 14 August 2013.

F.5.1 Natural disasters: mortalities and affected populations

	Mortalities from natural disasters						People affected by natural disasters					
	Number per annum			Per million population			Thousands per annum			Per 1,000 population		
	92-01	02-11	2012	92-01	02-11	2012	92-01	02-11	2012	92-01	02-11	2012
East and North-East Asia	**3 139**	**12 817**	**1 144**	**2.2**	**8.2**	**0.7**	**101 522**	**142 022**	**47 725**	**70.0**	**92.5**	**30.0**
China	2 373	10 500	802	1.9	7.8	0.6	100 218	141 592	44 519	80.2	106.7	32.3
DPR Korea	45	121	147	2.0	5.0	5.9	966	121	3 104	44.1	5.0	125.3
Hong Kong, China	10	31		1.6	4.4		1	2		0.1	0.3	
Japan	601	2 094	173	4.8	16.5	1.4	115	136	100	0.9	1.1	0.8
Macao, China	0	0		0.0	0.0		0	0		0.3	0.0	
Mongolia	13	10		5.3	3.9		181	145		75.5	56.7	
Republic of Korea	98	62	22	2.2	1.3	0.4	41	26	3	0.9	0.5	0.1
South-East Asia	**2 665**	**34 459**	**2 648**	**5.4**	**60.7**	**4.3**	**10 180**	**14 101**	**12 994**	**20.2**	**24.3**	**21.2**
Brunei Darussalam	0			0.0			0			0.0		
Cambodia	160	52	14	14.2	3.7	0.9	1 278	462	72	113.3	34.2	4.8
Indonesia	795	18 021	107	4.1	81.2	0.4	717	960	48	3.7	4.2	0.2
Lao PDR	83	8		17.5	1.3		241	95		47.9	15.2	
Malaysia	69	26		3.2	1.0		10	39		0.5	1.5	
Myanmar	21	13 917	40	0.5	272.0	0.8	19	315	86	0.4	6.2	1.6
Philippines	581	1 114	2 415	8.1	12.5	25.0	3 569	5 485	12 493	48.9	60.5	129.2
Singapore	0	3		0.1	0.8		0	0		0.1	0.0	
Thailand	119	1 025	0	2.0	15.7	0.0	2 130	5 105	236	35.2	77.5	3.5
Timor-Leste	0	3		0.1	2.6		0	1		0.3	1.1	
Viet Nam	837	291	72	10.7	3.4	0.8	2 216	1 639	59	27.9	19.0	0.7
South and South-West Asia	**12 142**	**20 261**	**2 504**	**8.4**	**12.4**	**1.4**	**55 718**	**61 254**	**17 293**	**39.3**	**38.1**	**9.6**
Afghanistan	1 022	737	378	54.0	30.8	12.7	312	491	48	15.3	18.4	1.6
Bangladesh	726	932	336	5.9	6.5	2.2	6 279	7 133	5 603	51.7	49.6	36.2
Bhutan	24	2		43.1	3.4		7	2		12.9	2.7	
India	6 842	3 806	599	6.8	3.4	0.5	42 515	49 017	4 281	43.3	44.7	3.5
Iran (Islamic Rep. of)	467	2 809	319	7.5	40.9	4.2	3 908	104	66	60.3	1.5	0.9
Maldives		11			36.1			1			5.0	
Nepal	473	244	135	22.7	9.6	4.9	87	306	0	4.3	11.9	0.0
Pakistan	613	7 945	671	4.8	50.1	3.7	1 903	3 685	5 048	15.3	21.8	28.2
Sri Lanka	16	3 648	53	0.9	184.7	2.5	276	453	2 247	14.8	22.6	106.5
Turkey	1 960	129	13	31.7	1.8	0.2	432	63	0	7.1	0.9	0.0
North and Central Asia	**690**	**5 723**	**444**	**3.2**	**25.8**	**2.0**	**1 075**	**712**	**186**	**4.9**	**3.2**	**0.8**
Armenia	0	0		0.1	0.0		32	0		10.4	0.0	
Azerbaijan	6	0	5	0.7	0.0	0.5	228	11	16	29.1	1.2	1.7
Georgia	1	1	5	0.2	0.3	1.1	70	3	100	14.7	0.7	22.9
Kazakhstan	13	10	0	0.9	0.6	0.0	65	11	14	4.3	0.7	0.9
Kyrgyzstan	25	17	16	5.6	3.3	2.9	15	203	11	3.4	38.6	2.0
Russian Federation	444	5 668	415	3.0	39.5	2.9	266	154	37	1.8	1.1	0.3
Tajikistan	191	26	3	34.1	3.6	0.4	334	330	8	54.4	45.9	1.0
Turkmenistan	1			0.2			0			0.0		
Uzbekistan	7	1		0.3	0.0		65	0		2.6	0.0	
Pacific	**293**	**183**	**101**	**9.7**	**5.2**	**2.7**	**1 708**	**143**	**262**	**60.3**	**4.0**	**6.9**
American Samoa		4			70.6			2			38.2	
Australia	14	63	4	0.8	2.9	0.2	1 564	27	16	88.2	1.2	0.7
Cook Islands	2	0		105.0	0.0		0	0		8.7	20.1	
Fiji	6	7	17	8.2	8.1	19.4	42	9	28	53.5	10.8	31.9
French Polynesia	1	0		5.7	0.4		0	0		0.2	1.3	
Guam	0	0		0.7	1.3		0	1		0.9	6.6	
Kiribati	0	0		0.0	0.0		8	0		103.2	0.0	
Marshall Islands	1	0		11.5	0.0		0	0		0.4	1.1	
Micronesia (F.S.)	2	5		17.7	44.9		3	1		29.8	6.8	
Nauru												
New Caledonia	0	0		0.0	0.9		0	0		0.0	0.2	
New Zealand	0	19	3	0.1	4.3	0.7	0	61	0	0.1	13.8	0.1
Niue	0	0		51.2	57.9		0	0		15.2	11.6	
Northern Mariana Islands		0			4.5			0			0.3	
Palau												
Papua New Guinea	251	61	65	49.4	9.7	9.1	77	31	200	15.9	4.8	27.9
Samoa	0	15	12	0.0	83.0	63.5	0	1	13	0.0	2.9	67.3
Solomon Islands	0	8	0	1.2	15.0	0.0	9	3	5	26.2	5.2	8.8
Tonga	0	1		0.0	8.7		2	0		20.4	0.5	
Tuvalu	0	0		0.0	0.0		0	0		0.0	0.0	
Vanuatu	15	0		86.3	1.0		3	7		14.5	35.5	
Asia and the Pacific	**18 928**	**73 443**	**6 841**	**5.2**	**18.2**	**1.6**	**170 204**	**218 232**	**78 460**	**47.1**	**54.6**	**18.4**
Developed countries	615	2 176	180	4.2	14.1	1.2	1 680	224	116	11.6	1.5	0.8
Developing countries	18 313	71 267	6 661	5.2	18.4	1.6	168 524	218 008	78 344	48.6	56.7	19.1
LLDC	1 858	1 055	537	16.7	8.2	3.7	1 566	1 594	97	13.6	12.0	0.7
LDC	2 525	15 917	915	11.1	58.1	3.2	8 242	8 816	5 827	36.6	33.0	20.1
ASEAN	2 665	34 457	2 648	5.4	60.8	4.3	10 180	14 100	12 994	20.3	24.3	21.3
ECO	4 306	11 672	1 405	12.7	30.3	3.3	7 262	4 897	5 211	21.3	12.0	12.1
SAARC	9 715	17 324	2 172	7.4	11.6	1.3	51 378	61 088	17 227	39.8	41.5	10.4
Central Asia	245	55	29	3.6	0.7	0.4	809	558	149	11.5	7.3	1.9
Pacific island dev. econ.	279	101	94	36.2	11.0	9.2	144	55	245	19.4	6.0	23.9
Low income econ.	2 663	16 044	1 069	10.5	53.2	3.4	9 290	9 362	8 932	37.0	31.7	28.1
Lower middle income econ.	10 086	34 946	4 016	6.5	20.1	2.1	51 934	61 536	24 521	34.0	35.6	12.7
Upper middle income econ.	5 452	20 180	1 554	3.3	11.5	0.9	107 258	147 081	44 887	65.8	84.9	25.0
High income econ.	725	2 273	202	3.6	10.5	0.9	1 722	253	119	8.6	1.2	0.5
Africa	**7 391**	**5 280**	**2 648**	**9.8**	**5.6**	**2.4**	**10 074**	**16 111**	**26 510**	**13.2**	**16.9**	**24.5**
Europe	**365**	**8 041**	**803**	**0.6**	**13.7**	**1.3**	**1 118**	**481**	**512**	**1.9**	**0.8**	**0.9**
Latin America and Carib.	**6 456**	**25 109**	**936**	**12.6**	**42.3**	**1.5**	**4 196**	**5 787**	**4 818**	**8.3**	**10.0**	**7.9**
North America	**367**	**494**	**318**	**1.2**	**1.5**	**0.9**	**473**	**2 095**	**93**	**1.5**	**6.2**	**0.3**
World	**33 870**	**112 562**	**11 589**	**5.7**	**16.9**	**1.6**	**186 286**	**243 085**	**110 431**	**31.8**	**37.0**	**15.6**

F.5.2 Natural disasters: economic damage

	Economic damage from natural disasters								Natural disasters events			
	Million 2005 US dollars per annum				% of GDP				Number of events			
	92-01	02-11	2011	2012	92-01	02-11	2011	2012	92-01	02-11	2011	2012
East and North-East Asia	**29 908**	**41 287**	**173 816**	**13 769**	**0.4**	**0.5**	**1.6**	**0.1**	**330**	**392**	**33**	**42**
China	14 546	16 748	7 086	11 666	1.4	0.6	0.2	0.3	210	271	20	29
DPR Korea	4 639	29	0	12	38.8	0.2	0.0		12	16	3	3
Hong Kong, China	53	0			0.0	0.0			14	9		
Japan	10 022	23 244	166 680	1 335	0.2	0.5	3.6	0.0	52	61	7	7
Macao, China	0	0			0.0	0.0			4	1		
Mongolia	213	4			12.9	0.1			10	8		
Republic of Korea	435	1 262	49	756	0.1	0.2	0.0	0.1	28	26	3	3
South-East Asia	**2 227**	**4 961**	**25 581**	**1 328**	**0.3**	**0.4**	**1.9**	**0.1**	**369**	**524**	**66**	**45**
Brunei Darussalam	0				0.0				1			
Cambodia	29	47	378	0	0.9	0.6	4.1	0.0	15	15	1	1
Indonesia	1 280	1 088	3	0	0.5	0.4	0.0	0.0	86	151	12	15
Lao PDR	33	7	0		2.6	0.2	0.0		16	7	2	
Malaysia	35	136	0		0.0	0.1	0.0		27	28	2	
Myanmar	4	312	2	0	0.1	2.0	0.0	0.0	7	17	2	2
Philippines	203	223	442	1 089	0.3	0.2	0.3	0.8	115	172	36	22
Singapore	0	0			0.0	0.0			2	1		
Thailand	267	2 686	24 617	0	0.2	1.2	10.9	0.0	45	50	6	1
Timor-Leste	0	0			0.0	0.0			1	7		
Viet Nam	375	462	139	237	1.3	0.8	0.2	0.3	54	76	5	4
South and South-West Asia	**7 973**	**4 977**	**4 829**	**2 107**	**0.7**	**0.3**	**0.2**	**0.1**	**468**	**547**	**42**	**42**
Afghanistan	3	10	82	0	0.1	0.1	0.7	0.0	41	80	4	11
Bangladesh	591	515	0	0	1.5	0.9	0.0	0.0	97	73	5	5
Bhutan	0	0	0		0.1	0.0	0.0		5	4	1	
India	2 582	2 231	1 417	170	0.5	0.3	0.1	0.0	135	173	13	10
Iran (Islamic Rep. of)	1 129	130		256	0.8	0.1		0.1	57	47		4
Maldives		47	0			4.4	0.0			3	1	
Nepal	31	5	0	1	0.6	0.0	0.0	0.0	28	32	7	3
Pakistan	184	1 602	1 646	1 646	0.3	1.3	1.2	1.2	47	65	2	5
Sri Lanka	34	187	304	35	0.3	0.8	0.8	0.1	22	25	5	3
Turkey	3 418	249	1 380	0	1.0	0.0	0.2	0.0	36	45	4	1
North and Central Asia	**539**	**712**	**42**	**954**	**0.1**	**0.1**	**0.0**	**0.1**	**156**	**119**	**9**	**20**
Armenia	20	0			0.8	0.0			4	1		
Azerbaijan	21	7		0	0.3	0.1		0.0	9	3		3
Georgia	33	52	0	58	0.7	1.0	0.0	0.6	7	7	1	2
Kazakhstan	6	12	30	0	0.0	0.0	0.0	0.0	10	7	1	2
Kyrgyzstan	22	0	0	0	1.0	0.0	0.0	0.0	9	15	1	2
Russian Federation	313	566	12	896	0.1	0.1	0.0	0.1	89	53	3	8
Tajikistan	77	74	0	0	3.7	2.8	0.0	0.0	21	31	2	3
Turkmenistan	42				0.4				2			
Uzbekistan	4	0	0		0.0	0.0	0.0		5	2	1	
Pacific	**1 090**	**3 752**	**14 813**	**538**	**0.2**	**0.4**	**1.2**	**0.0**	**133**	**164**	**11**	**10**
American Samoa										4		
Australia	975	1 809	1 507	347	0.2	0.2	0.2	0.0	60	59	3	2
Cook Islands	0	0			0.0	0.0			3	3		
Fiji	17	17		79	0.8	0.6		2.5	7	14		3
French Polynesia	0	1			0.0	0.0			2	1		
Guam									3	4		
Kiribati	0	0			0.0	0.0			1	1		
Marshall Islands	0	0			0.0	0.0			1	1		
Micronesia (F.S.)	0	0			0.0	0.0			2	5		
Nauru												
New Caledonia	0	5			0.0	0.1			1	2		
New Zealand	74	1 907	13 304	7	0.1	1.6	11.1	0.0	13	12	2	1
Niue									1	1		
Northern Mariana Islands										2		
Palau												
Papua New Guinea	15	0	0	15	0.4	0.0	0.0	0.2	18	27	1	2
Samoa	0	13		90	0.1	2.9		19.7	1	3		1
Solomon Islands	0	0	0	0	0.0	0.0	0.0	0.0	4	10	1	1
Tonga	7	1	2		3.1	0.4	0.7		4	3	1	
Tuvalu	0	0	0		0.0	0.0	0.0		1	1	1	
Vanuatu	1	0	0		0.3	0.0	0.0		11	11	2	
Asia and the Pacific	**41 736**	**55 689**	**219 081**	**18 696**	**0.4**	**0.4**	**1.2**	**0.1**	**1 456**	**1 746**	**161**	**159**
Developed countries	11 071	26 959	181 492	1 689	0.2	0.5	3.1	0.0	125	132	12	10
Developing countries	30 665	28 729	37 590	17 007	0.7	0.4	0.4	0.2	1 331	1 614	149	149
LLDC	473	121	112	1	0.6	0.1	0.1	0.0	160	190	19	24
LDC	693	909	462	91	1.2	0.9	0.3	0.1	228	261	26	24
ASEAN	2 227	4 961	25 581	1 328	0.3	0.4	1.9	0.1	368	517	66	45
ECO	4 907	2 086	3 138	1 902	0.8	0.2	0.2	0.2	237	295	15	31
SAARC	3 426	4 598	3 449	1 852	0.6	0.4	0.2	0.1	375	455	38	37
Central Asia	226	146	30	58	0.3	0.1	0.0	0.0	67	66	6	12
Pacific island dev. econ.	41	36	2	184	0.7	0.4	0.0	1.2	60	93	6	7
Low income econ.	5 397	993	462	13	4.5	0.9	0.3	0.0	230	279	25	30
Lower middle income econ.	5 002	5 886	3 953	3 420	0.5	0.4	0.2	0.1	556	773	83	68
Upper middle income econ.	19 778	20 583	33 125	12 817	0.9	0.4	0.5	0.2	486	512	38	48
High income econ.	11 560	28 226	181 541	2 445	0.2	0.4	2.5	0.0	180	178	15	13
Africa	**526**	**1 077**	**647**	**638**	**0.1**	**0.1**	**0.1**	**0.0**	**654**	**988**	**76**	**68**
Europe	**11 856**	**10 959**	**987**	**18 231**	**0.1**	**0.1**	**0.0**	**0.1**	**366**	**509**	**15**	**56**
Latin America and Carib.	**5 214**	**7 862**	**3 753**	**2 366**	**0.2**	**0.2**	**0.1**	**0.1**	**564**	**704**	**70**	**57**
North America	**20 499**	**39 280**	**54 067**	**87 643**	**0.2**	**0.3**	**0.4**	**0.6**	**283**	**261**	**27**	**28**
World	**80 194**	**115 422**	**278 732**	**127 574**	**0.2**	**0.2**	**0.5**	**0.2**	**3 380**	**4 296**	**352**	**375**

G.1. Economic growth

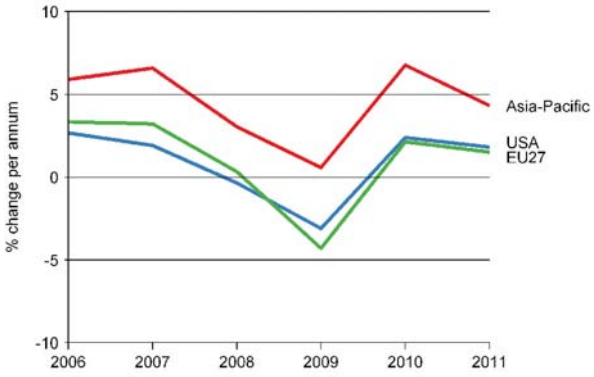
After the onset of the global financial crisis of 2008/09, a rapid recovery was seen in the Asian and Pacific region in 2010, but this recovery decelerated in 2011 because the global economy had entered a second phase of the crisis, as major developed economies of the globe pulled back on spending due to public debt concerns coming to the fore coupled with poor growth records. The region's growth was thus curtailed as it had to contend with constrained demand for its exports from major markets in developed economies. Growth in Asia and the Pacific was further impacted by the return of high food and energy prices, as well as the effects of a host of natural disasters.

There was an initial dramatic recovery from the crisis in 2010 due to fiscal stimulus and intraregional trade.

In 2010, the region initially experienced a strong recovery from the global financial crisis of 2008/09. Economies that are more oriented towards domestic demand survived the initial part of the crisis in 2009 with only relatively small reductions in growth. More export-oriented economies, however, bore the brunt of the growth contraction in the region. This dichotomy between countries meant that the region as a whole experienced lower but still positive growth in 2009. The year 2010 saw export-oriented economies recover strongly, while domestic-demand oriented economies continued to perform robustly, contributing to the overall recovery of growth in the region. Some of the recovery of export-oriented economies was due to strong support from intraregional trade with China, buttressed by renewed growth in exports to major markets in the developed world. Investment was also a strong driver of growth in 2010, with significant fiscal stimulus policies implemented in a number of economies in the region, as well as investment in the mining sector particularly in North and Central Asia.

The growth rate in developing economies in the Asian and Pacific region in 2011 was substantially lower than that in 2010, showing a decrease from 8.4 to 6.8 per cent. The 2010 growth rate had been particularly high due to a recovery from the low growth in 2009 that was a result of the initial impact of the global financial crisis. Apart from the base effect, the 2011 growth slowdown also reflected the withdrawal of fiscal stimulus policies, tighter monetary policies adopted in some countries to meet the challenge of rising inflation, and in general the sluggish recovery in the developed economies of the world. The slower growth in exports, which slowed economic growth in developing economies, began to be seen during the course of 2010 and this trend continued during 2011.

Figure G.1-1
Annual real GDP growth rates, Asia and the Pacific, United States of America and European Union, 2006-2011



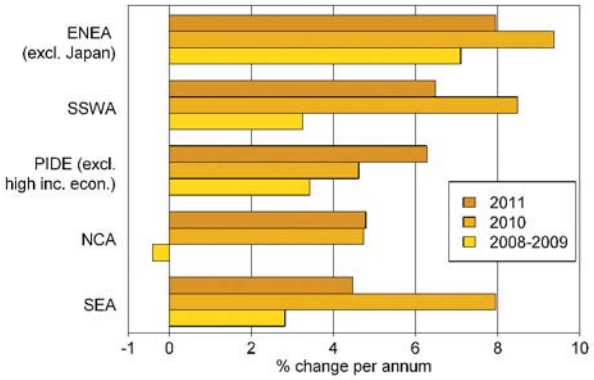
Note: The 27 member countries of the European Union: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, and the United Kingdom of Great Britain and Northern Ireland.

The slowdown in growth in 2011 particularly affected the subregions where exports play a major role.

The impact of the sluggish recovery in developed economies was felt in those subregions where exports are a key driver of growth. Hence, South-East Asia experienced the greatest slowdown in the growth rate, with a fall from 8.0 per cent in 2010 to 4.5 per cent in 2011. The economic growth rate of developing economies in East and North-East Asia also slowed, from 9.4 per cent in 2010 to 8.0 per cent in 2011. The subregions where domestic demand is important also displayed a reduced growth performance in 2011,

as tighter monetary policies in some countries constrained spending. Thus, the South and South-West Asian subregion saw growth decelerate from an annual rate of 8.5 per cent in 2010 to 6.5 per cent in 2011. The subregions where commodities play a significant role displayed robust growth in 2011. Hence, North and Central Asia had a fairly stable growth rate, at 4.8 per cent in 2011. Pacific island developing economies also saw relatively strong growth, at 6.3 per cent in 2011 after having grown by 4.6 per cent in 2010.

Figure G.1-2
GDP growth rates, Asian and Pacific subregions, average 2008/09, 2010 and 2011

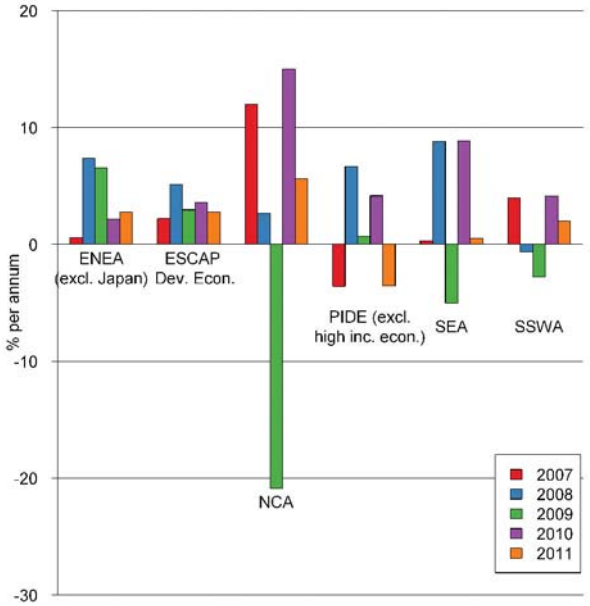


Growth in major developing economies where domestic demand is particularly important declined less in 2011 compared with growth in a number of more open economies. Some of these major economies nevertheless experienced a slowdown in 2011 stemming in significant part from the effects of tighter monetary policies. China and India grew by 9.2 per cent and 6.9 per cent, respectively, in 2011, compared with 10.3 per cent and 9.6 per cent in 2010. The global environment also affected sales from the large export sector of China and financing from abroad for Indian enterprises. Indonesia maintained its strong growth performance, with the economy expanding by 6.5 per cent in 2011 compared with 6.2 per cent in the previous year.

Growth in investment and industrial production slowed in 2011.

One of the drivers of the slowdown in growth in developing economies of the region in 2011 was the slowdown in investment growth in many developing economies. Investment growth declined in 2011 compared with that in the previous year for all developing economies except those in East and North-East Asia. While some of this decline was due to the base effect of particularly high investment growth in 2010, factors such as the easing of fiscal stimulus in the region and tighter monetary policies also had a role to play. Apart from the Pacific island developing economies that witnessed a decline in investment growth in 2011, the greatest proportional decline in investment growth between 2010 and 2011 was seen in South-East Asia.

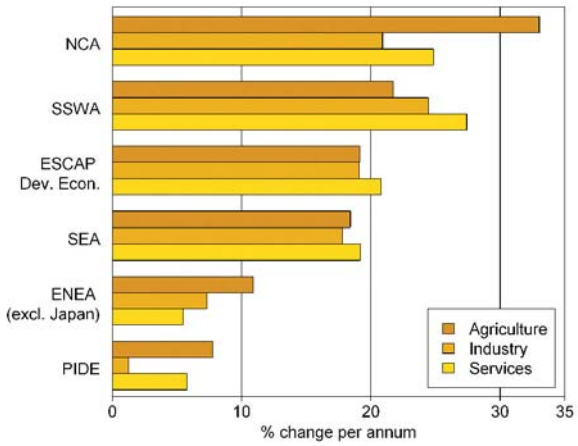
Figure G.1-3
Gross domestic investment growth rates, Asia and the Pacific, 2007-2011



Data on the components of production also reflect the slowdown of economic growth in the region in 2011. The growth rate of the contribution of industry to value-added declined in 2011 compared with that in 2010 in all developing economies in the region, apart from those in South-East Asia. This partly reflected the slowdown in demand from developed world economies for industrial exports from the region, as well as domestic pressure on industrial production in some countries resulting from reduced fiscal stimulus and tighter monetary policies. However, economic growth was

supported somewhat in nearly all subregions by increasing growth in the contribution to value-added of the agricultural and services sectors of the economies in the region.

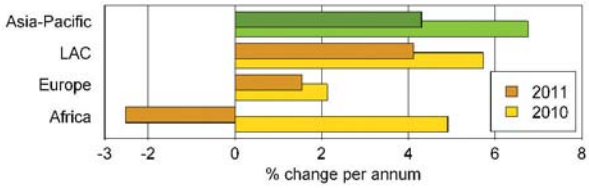
Figure G.1-4
Value added by sector growth, Asia and the Pacific, 2011



Despite the slowdown, Asia and the Pacific remained the most dynamic region globally.

Despite the deceleration in growth in 2011, Asia and the Pacific remained by far the most dynamic region in the world in terms of economic growth. As in 2010, the region was the engine of global growth, growing nearly 20 per cent faster than the next-fastest-growing developing region of the world, that is, Latin America and the Caribbean. This brought into focus the role of Asia and the Pacific as the engine for global recovery. The region serves as a source of demand for the goods and, even more so, the commodities of other regions, which has led to growth worldwide.

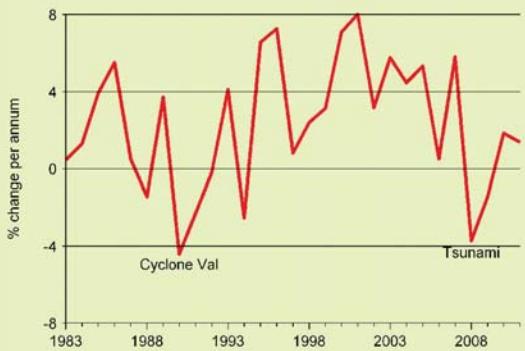
Figure G.1-5
GDP growth rates, Asia and the Pacific and selected world regions, 2010 and 2011



Box G.1-1
Multiple shocks make growth volatile and can lead to permanent economic loss

Developing economies, the smaller ones in particular, are vulnerable to natural and other disasters due to structural weaknesses, among other causes. They do not often have diverse exports and they can be highly dependent on primary commodities. Developing economies can also be quite remote and have high levels of poverty. As a result, they have less capacity to absorb shocks and their economic growth is likely to be more volatile. This is evident in Samoa, which was hit by Cyclone Val in 1991 and by a tsunami in 2009, both of which caused significant losses in output (see figure below).

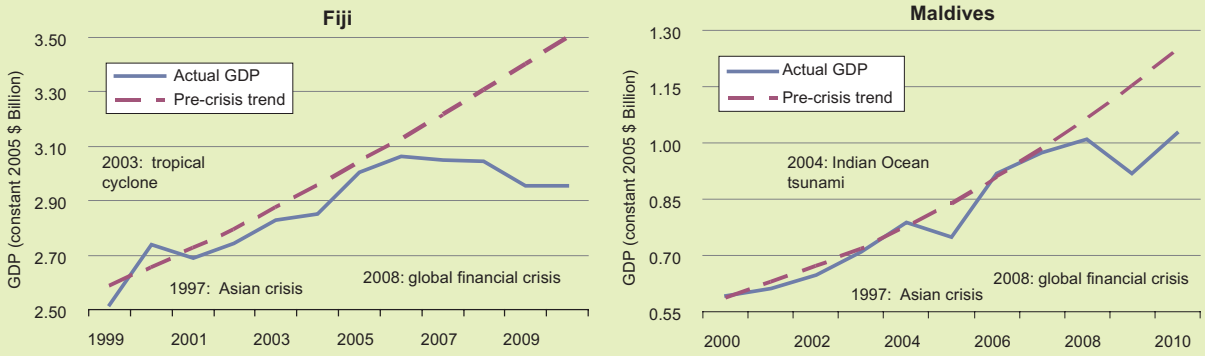
Samoa, real GDP growth, 1983-2011



Severe shocks can also knock countries off their growth trajectories and lead to a permanent loss in output. In low-income economies, droughts, floods, storms and extreme temperature events can lead to declines in real per capita GDP of about 2 per cent.[a] A major disaster causes suffering and loss of life, but in a poor country it also damages the limited stock of capital goods and can lead to a long-term decline in productive capacity. As economic activity declines, fiscal revenues also shrink. The sudden and large demand for cash and foreign currency adds to the macroeconomic challenges. All this distress can easily set back the economy and, as a result, economic growth declines.

If a country suffers a series of shocks there can be a cumulative effect, as illustrated by Cyclone Ami in Fiji in 2003 and the Indian Ocean tsunami in Maldives in 2004, both of which were coupled with the 2008 global financial crisis (see figure below). In addition to resulting in permanent losses in output, large shocks also affect the achievement of the Millennium Development Goals. In Pakistan, for example, the 2005 earthquake, the 2007 cyclone and the 2010 floods affected net primary school enrolment. These events damaged education facilities, reducing the quantity and quality of education.

Persistent losses caused by shocks, Fiji and Maldives



Source: ESCAP, based on data from United Nations Statistics Division.
Note: For more details, see Luc Laeven and Fabian Valencia, "Systemic banking crises: a new database", IMF Working Paper, No. WP/08/224 (International Monetary Fund, 2008).

[a] Claudio Raddatz, "Are external shocks responsible for the instability of output in low-income countries?", *Journal of Development Economics,* vol. 84, No. 1 (September 2007), pp. 155-187; and Stefan Hochrainer, "Assessing the macroeconomic impacts of natural disasters", World Bank Policy Research Working Paper, No. 4968 (Washington, DC, World Bank, 2009).

Further reading

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Technical notes

Gross domestic product (GDP)

The total market value of all final goods and services produced within national borders in a given period of time.

Purchasing power parity (PPP)

PPP gives the number of units of a country's currency required to buy the same amount of goods and services in the domestic market as a United States dollar would buy in the United States. Costs in local currency units are converted to international dollars using PPP exchange rates. An international dollar has the same purchasing power as the United States dollar has in the United States. An international dollar is therefore a hypothetical currency that is used as a means of translating and comparing costs from one country to the other using a common reference point, the United States dollar.

Indicators

GDP in constant prices (billion 2005 United States dollars, percentage change per annum, 2005 United States dollars per capita, percentage change per capita per annum)

GDP expressed in billions of constant 2005 United States dollars; also known as real GDP. **Indicator calculations:** Per capita figures are based on population figures (WPP2012). **Aggregate calculations:** Sum of individual country values (billion 2005 United States dollars); weighted averages using total population (WPP2012) as weight (2005 United States dollars per capita, percentage change per capita per annum); average annual growth of aggregate values (percentage change per annum, percentage change per capita per annum) over several years are calculated using the geometric growth model. Missing data are not imputed.

GDP (2005 PPP dollars per capita)

GDP per capita is calculated as the aggregate of production (GDP) divided by the population size based on WPP2012 and expressed in constant 2005 PPP dollars per capita. **Aggregate calculations:** Weighted averages using total population (WPP2012) as weight. Missing data are not imputed.

GDP in current prices (billion United States dollars, United States dollars per capita)

GDP expressed in the prices of the current reporting period; also known as nominal GDP. **Indicator calculations:** Per capita figures are based on population figures (WPP2012). **Aggregate calculations:** Sum of individual country values (billion United States dollars); weighted averages using total population (WPP2012) as weight (United States dollars per capita). Missing data are not imputed.

Gross domestic investment rate in current prices (percentage of GDP, percentage change per annum)

The sum of gross fixed capital formation and changes in stocks divided by the total GDP in national currencies. **Indicator calculations:** Percentages of GDP are based on national accounts data in national currencies (NAMAD). **Aggregate calculations:** Weighted averages using GDP in current United States dollars as weight (percentage of GDP); average annual growth of aggregate values (percentage change per annum). Missing data are not imputed.

Gross national income in current prices (billion United States dollars, United States dollars per capita)

GDP less net taxes on production and imports, less compensation of employees and property income payable to the rest of the world, plus the corresponding items receivable from the rest of the world (that is, GDP less primary incomes payable to non-resident units, plus primary incomes receivable from non-resident units). **Indicator calculations:** Per capita figures are based on population figures (WPP2012). **Aggregate calculations:** Sum of individual country values (billion United States dollars); weighted averages using population (WPP2012) as weight (United States dollars per capita). Missing data are not imputed.

Value added by sector in constant prices: agriculture, industry and services (percentage of value added, percentage change per annum)

Generation of gross value added by the International Standard Industrial Classification of economic activity. Agriculture includes

agriculture, hunting, forestry and fishing. Industry includes construction, mining, manufacturing and utilities. Services include transport, storage and communication, wholesale, retail, restaurants, hotels, and other types of enterprises. **Indicator calculations:** Percentages of total value-added figures are based on national accounts data in national currencies (NAMAD); percentage change per annum is based on value added components in the national currency. **Aggregate calculations:** Weighted averages using GDP in constant 2005 United States dollars as weight (percentage of GDP); average annual growth of aggregate values (percentage change per annum).

Sources

United Nations Statistics Division, NAMAD. Individual country data are collected from national statistical offices of countries through the United Nations Statistics Division National Accounts Questionnaire; data on countries and years that are missing from the questionnaire are estimated by the United Nations Statistics Division. **PPP:** World Development Indicators, World Bank. National accounts data are compiled by the World Bank, International Comparison Program database. The World Bank makes some adjustments to the data. **Data obtained:** 11 January 2013, except average annual GDP per capita (2005 United States dollars), growth rate (percentage change per capita per annum) and GDP (2005 PPP dollars per capita) obtained on 29 January 2013; gross national income in current prices obtained on 12 February 2013; and gross domestic investment rate in current prices obtained on 23 January 2013.

G.1.1 Real GDP

	Gross domestic product													
	Billion 2005 US dollars				% change per annum			2005 PPP dollars per capita		2005 US dollars per capita		% change 2005 US dollars per capita per annum		
	1990	2000	2010	2011	91-01	01-11	2011	2005	2011	2005	2011	91-01	01-11	2011
East and North-East Asia	**4 864**	**6 586**	**9 791**	**10 166**	**2.9**	**4.2**	**3.8**	**7 073**	**10 049**	**5 181**	**6 436**	**2.1**	**3.6**	**3.2**
China	532	1 434	3 880	4 237	10.3	10.6	9.2	4 069	7 286	1 732	3 096	9.4	9.9	8.5
DPR Korea	15	12	13	13	-1.9	0.8	-0.1			547	526	-3.1	0.1	-0.6
Hong Kong, China	99	145	216	227	3.4	4.5	5.0	35 999	44 484	25 776	31 921	1.7	4.2	4.3
Japan	3 851	4 308	4 639	4 604	0.8	0.6	-0.7	30 632	30 780	36 005	36 162	0.6	0.5	-0.7
Macao, China	5	7	21	25	2.6	13.5	20.7	38 290	69 244	25 186	45 547	0.9	11.1	18.2
Mongolia	2	2	3	4	1.2	7.9	17.3	2 885	4 257	999	1 471	0.4	6.5	15.5
Republic of Korea	360	678	1 019	1 056	6.0	4.1	3.6	23 319	28 133	17 963	21 672	5.3	3.6	3.0
South-East Asia	**444**	**726**	**1 204**	**1 258**	**4.6**	**5.4**	**4.5**	**4 192**	**5 227**	**1 658**	**2 082**	**2.9**	**4.1**	**3.2**
Brunei Darussalam	7	9	10	10	2.2	1.3	2.2	47 760	46 643	25 914	24 765	-0.3	-0.5	0.7
Cambodia	2	4	9	9	6.9	7.9	7.1	1 508	2 040	471	637	3.9	6.2	5.3
Indonesia	150	227	378	402	3.7	5.5	6.5	3 141	4 069	1 273	1 650	2.1	4.0	5.1
Lao PDR	1	2	4	4	6.3	7.4	8.0	1 684	2 376	469	661	4.0	5.5	6.0
Malaysia	57	114	178	187	6.2	5.0	5.1	12 131	14 223	5 554	6 512	3.6	3.1	3.3
Myanmar	3	7	20	21	8.3	11.5	5.5			238	410	6.8	10.7	4.6
Philippines	62	82	131	136	3.2	4.8	3.7	3 041	3 630	1 201	1 431	0.9	3.0	2.0
Singapore	50	99	172	180	6.4	6.2	4.9	43 055	53 504	27 901	34 671	3.6	3.6	2.6
Thailand	93	145	226	226	4.1	4.2	0.1	6 791	7 972	2 877	3 391	3.0	3.6	-0.2
Timor-Leste	0	0	3	3	2.6	20.8	10.6	972	1 494	1 822	2 986	1.4	18.0	8.9
Viet Nam	18	37	74	79	7.7	7.2	5.9	2 096	2 943	623	875	6.1	6.1	4.9
South and South-West Asia	**835**	**1 302**	**2 333**	**2 484**	**4.4**	**6.5**	**6.5**	**2 789**	**3 415**	**1 059**	**1 398**	**2.5**	**5.0**	**5.1**
Afghanistan	6	3	10	11	-4.3	12.8	5.7	828	1 221	266	378	-9.2	9.4	3.2
Bangladesh	28	44	78	83	4.9	6.0	6.7	1 144	1 545	403	543	2.8	4.6	5.5
Bhutan	0	1	1	1	5.9	8.5	5.9	3 528	5 225	1 259	1 870	5.0	6.0	4.0
India	351	598	1 238	1 323	6.0	7.7	6.9	2 234	3 256	743	1 083	4.1	6.2	5.5
Iran (Islamic Rep. of)	106	155	261	267	3.2	5.3	2.0	9 173		2 931	3 535	1.6	4.0	0.7
Maldives	0.4	0.8	1.5	1.6	6.5	7.2	7.5	5 249	7 554	3 335	4 800	4.2	5.3	5.4
Nepal	4	7	10	11	4.9	3.8	3.9	1 029	1 241	327	394	2.4	2.4	2.7
Pakistan	58	86	134	138	3.6	4.6	3.0	2 154	2 432	691	781	1.1	2.8	1.2
Sri Lanka	12	20	33	36	4.6	6.2	8.3	3 496	4 916	1 223	1 720	3.7	5.2	7.4
Turkey	270	387	565	613	3.0	5.3	8.5	11 532	13 575	7 130	8 393	1.4	4.0	7.1
North and Central Asia	**954**	**642**	**1 078**	**1 130**	**-2.8**	**5.2**	**4.8**	**9 133**	**11 538**	**4 037**	**5 077**	**-2.9**	**5.0**	**4.4**
Armenia	4	3	6	6	-1.7	7.6	4.7	4 166	5 347	1 625	2 092	-0.3	8.0	4.7
Azerbaijan	12	7	28	28	-4.2	13.9	0.1	4 406	8 857	1 547	3 079	-5.3	12.5	-1.1
Georgia	12	5	8	9	-6.7	6.4	7.0	3 519	4 949	1 433	2 015	-5.3	7.2	7.3
Kazakhstan	50	35	77	83	-1.2	7.6	7.5	8 747	11 899	3 792	5 140	-0.2	6.6	6.3
Kyrgyzstan	3	2	3	3	-2.7	4.1	5.7	1 762	2 159	488	598	-3.8	3.3	4.3
Russian Federation	844	567	908	947	-2.9	4.7	4.3	11 788	14 665	5 308	6 604	-2.8	4.9	4.5
Tajikistan	4	1	3	3	-7.7	7.9	7.4	1 423	1 832	340	435	-9.1	5.5	4.8
Turkmenistan	14	11	23	26	-1.5	8.8	14.7	4 762	8 316	2 937	5 184	-3.3	7.6	13.2
Uzbekistan	11	11	22	23	0.3	7.4	8.3	2 010	3 026	553	832	-1.4	6.2	6.8
Pacific	**536**	**754**	**1 009**	**1 041**	**3.8**	**2.9**	**3.2**	**24 015**	**25 055**	**26 872**	**28 188**	**2.3**	**1.2**	**1.6**
American Samoa														
Australia	451	640	865	894	3.9	3.0	3.4	32 323	34 214	37 021	39 335	2.7	1.4	1.9
Cook Islands	0.1	0.2	0.2	0.2	2.6	1.0	3.4			9 411	9 037	2.4	-0.3	2.8
Fiji	2	3	3	3	2.8	1.4	2.0	4 324	4 203	3 655	3 548	1.8	0.7	1.1
French Polynesia	4	5	6	6	1.8	1.9	1.6			21 433	22 236	0.0	0.7	0.6
Guam														
Kiribati	0.1	0.1	0.1	0.1	2.7	1.6	3.0	2 304	2 102	1 167	1 131	1.2	-0.1	1.4
Marshall Islands	0.1	0.1	0.1	0.2	1.2	2.8	5.0			2 677	3 000	0.5	2.8	4.9
Micronesia (F.S.)	0.2	0.2	0.2	0.3	1.7	0.1	1.0	3 144	3 249	2 355	2 425	0.9	0.5	1.2
Nauru	0.1	0.0	0.0	0.0	-9.8	-1.0	4.0			2 599	3 104	-10.5	-1.0	4.0
New Caledonia	4	5	7	8	1.4	3.5	3.4			27 266	30 553	-0.8	1.9	2.0
New Zealand	70	94	119	120	3.5	2.1	1.1	25 304	24 381	27 530	27 257	2.2	0.9	0.0
Niue														
Northern Mariana Islands														
Palau	0.1	0.1	0.2	0.2	1.7	1.6	1.8	12 910	12 151	7 267	7 810	-0.6	1.0	1.1
Papua New Guinea	3	4	6	7	3.6	4.9	8.9	1 866	2 364	798	1 008	1.0	2.4	6.5
Samoa	0.3	0.3	0.4	0.5	3.6	2.3	1.4	3 838	3 877	2 419	2 419	2.9	1.6	0.6
Solomon Islands	0.3	0.4	0.5	0.6	0.8	5.4	10.7	2 075	2 650	915	1 067	-2.0	2.9	8.3
Tonga	0.2	0.2	0.3	0.3	2.4	1.4	4.7	4 220	4 313	2 616	2 667	2.1	0.8	4.2
Tuvalu	0.0	0.0	0.0	0.0	4.8	0.4	1.0			2 289	2 521	4.3	0.0	0.8
Vanuatu	0.3	0.4	0.5	0.5	2.0	3.9	4.3	3 530	3 993	1 878	2 178	-0.2	1.3	1.9
Asia and the Pacific	**8 806**	**10 009**	**15 415**	**16 079**	**2.7**	**4.6**	**4.3**	**5 155**	**6 835**	**3 105**	**3 810**	**1.4**	**3.5**	**3.3**
Developed countries	4 372	5 043	5 623	5 619	1.2	1.0	-0.1	30 715	31 103	35 911	36 375	0.8	0.7	-0.3
Developing countries	3 261	4 966	9 793	10 460	4.5	7.3	6.8	4 121	5 877	1 804	2 573	3.1	6.2	5.7
LLDC	111	85	192	205	-1.2	8.3	7.1	2 660	3 849	1 007	1 455	-3.0	6.6	5.5
LDC	46	69	137	146	4.6	7.2	6.3	1 145	1 542	367	512	2.3	5.7	5.0
ASEAN	443	725	1 201	1 255	4.6	5.4	4.5	4 198	5 234	1 658	2 081	2.9	4.0	3.2
ECO	533	698	1 127	1 196	2.4	5.7	6.1	5 294	5 377	2 346	2 810	0.4	4.0	4.5
SAARC	460	760	1 506	1 604	5.5	7.3	6.5	2 096	2 960	697	985	3.5	5.7	5.1
Central Asia	110	74	170	183	-2.0	8.4	7.2	3 950	5 867	1 556	2 308	-2.6	7.3	5.9
Pacific island dev. econ.	15	19	25	27	2.2	3.1	4.4			2 534	2 713	-0.1	1.0	2.3
Low income econ.	65	80	147	155	2.7	6.3	5.7	1 140	1 524	371	494	0.6	4.9	4.4
Lower middle income econ.	688	1 082	2 047	2 177	4.8	6.8	6.3	2 392	3 305	831	1 144	3.0	5.3	4.9
Upper middle income econ.	1 978	2 856	6 148	6 616	4.1	8.2	7.6	5 487	8 372	2 415	3 704	3.3	7.6	6.9
High income econ.	4 902	5 991	7 073	7 130	1.8	1.6	0.8	29 548	31 534	31 349	32 863	1.2	1.2	0.4
Africa	**620**	**782**	**1 330**	**1 296**	**2.6**	**4.7**	**-2.5**	**2 427**	**2 710**	**1 119**	**1 228**	**0.2**	**2.1**	**-1.4**
Europe	**11 148**	**13 346**	**15 421**	**15 660**	**2.2**	**1.4**	**1.6**	**24 224**	**25 606**	**24 930**	**26 152**	**2.1**	**1.1**	**1.4**
Latin America and Carib.	**1 797**	**2 456**	**3 343**	**3 480**	**2.9**	**3.5**	**4.1**	**8 747**	**10 358**	**4 975**	**5 779**	**1.2**	**2.2**	**2.9**
North America	**8 717**	**12 164**	**14 203**	**14 466**	**3.5**	**1.6**	**1.9**	**41 451**	**41 414**	**41 461**	**41 389**	**2.4**	**0.7**	**1.0**
World	**31 588**	**39 504**	**50 864**	**52 203**	**2.8**	**2.6**	**2.6**	**8 862**	**10 121**	**7 047**	**7 487**	**1.4**	**1.4**	**1.5**

G.1.2 Nominal GDP, GNI and GDI

	Gross domestic product in current prices						Gross domestic investment rate						Gross national income	
	Billion US dollars			US dollars per capita			% of GDP			% change per annum			Billion US dollars	US dollars per capita
	1990	2005	2011	1990	2005	2011	2000	2007	2011	91-01	01-11	2011	2011	2011
East and North-East Asia	**3 875**	**7 906**	**14 491**	**2 851**	**5 181**	**9 174**	**27**	**31**	**35**	**-2.5**	**0.2**	**4.2**	**14 835**	**9 392**
China	404	2 284	7 204	347	1 732	5 264	35	42	49	0.5	3.0	2.4	7 330	5 356
DPR Korea	15	13	12	728	547	503							12	503
Hong Kong, China	77	178	243	13 270	25 776	34 285	27	21	23	-0.6	-1.0	-2.4	251	35 314
Japan	3 104	4 572	5 870	25 388	36 005	46 107	25	23	20	-2.8	-2.0	0.6	6 083	47 774
Macao, China	3	12	36	8 824	25 186	66 685	11	37	13	-10.1	3.1	-1.0	33	60 158
Mongolia	2	3	9	690	999	3 111	29	39	58	-3.1	8.8	43.2	8	2 844
Republic of Korea	270	845	1 116	6 293	17 963	22 906	31	29	29	-3.1	0.1	-0.3	1 119	22 968
South-East Asia	**367**	**932**	**2 211**	**828**	**1 658**	**3 659**	**25**	**24**	**27**	**-0.6**	**2.9**	**0.5**	**2 225**	**3 681**
Brunei Darussalam	4	10	16	13 702	25 914	40 244	13	13					16	40 439
Cambodia	2	6	13	187	471	878	18	21	17		-0.9	-1.6	12	821
Indonesia	126	286	847	704	1 273	3 473	22	25	33	-2.4	3.8	0.6	823	3 374
Lao PDR	1	3	8	204	469	1 257		34	31			13.9	8	1 202
Malaysia	48	144	288	2 612	5 554	10 012	30	23	24	-4.1	-1.5	1.9	281	9 762
Myanmar	5	12	55	123	238	1 057	12	15	19	-2.8	5.3	-14.8	55	1 057
Philippines	49	103	225	793	1 201	2 364	18	17	22	-0.5	-0.1	6.2	296	3 110
Singapore	39	125	260	12 875	27 901	50 046	33	22	22	-2.2	-1.7	1.4	254	48 969
Thailand	88	189	370	1 561	2 877	5 553	22	26	25	-5.8	1.0	2.1	357	5 355
Timor-Leste	0	2	6	242	1 822	5 082	33	4	11	1.6	-11.6	-20.0	4	3 510
Viet Nam	6	53	124	94	623	1 375	30	43	33	7.6	0.5	-16.1	119	1 327
South and South-West Asia	**713**	**1 734**	**3 610**	**572**	**1 059**	**2 032**	**24**	**31**	**32**	**-1.1**	**1.8**	**2.0**	**3 601**	**2 027**
Afghanistan	4	7	19	309	266	651							18	622
Bangladesh	28	58	106	262	403	695							115	752
Bhutan	0	1	2	520	1 259	2 364	48	37	54	6.3	-1.1	3.5	2	2 320
India	327	837	1 898	376	743	1 554	24	38	36	-0.3	3.9	-0.8	1 880	1 539
Iran (Islamic Rep. of)	91	206	522	1 615	2 931	6 919	33	31	40	-1.6	1.7	-3.8	517	6 856
Maldives	0	1	2	1 176	3 335	6 176		54	58			1.4	2	5 858
Nepal	4	8	19	209	327	681	23	29	33	1.5	3.8	-15.1	19	685
Pakistan	48	109	209	432	691	1 186	17	23	13	-1.8	-2.6	-16.0	218	1 240
Sri Lanka	8	24	59	474	1 223	2 828	26	27	30	-0.4	2.9	9.2	59	2 797
Turkey	203	483	775	3 751	7 130	10 608	21	21	24	-3.2	4.7	22.0	772	10 571
North and Central Asia	**639**	**879**	**2 216**	**2 979**	**4 037**	**9 956**	**19**	**25**	**25**	**-4.1**	**1.4**	**5.6**	**2 128**	**9 564**
Armenia	2	5	10	609	1 625	3 420	19	38	28	-6.7	3.5	-15.1	10	3 538
Azerbaijan	7	13	63	902	1 547	6 890	21	22	20	20.9	-0.4	10.0	60	6 477
Georgia	8	6	14	1 544	1 433	3 284	27	32	26	0.7	-1.7	18.7	14	3 178
Kazakhstan	30	57	186	1 833	3 792	11 581	18	36	22	1.3	-1.8	-11.8	163	10 149
Kyrgyzstan	3	2	6	593	488	1 095	20	27	25	1.6	3.5	-7.5	6	1 061
Russian Federation	569	764	1 858	3 840	5 308	12 952	19	24	25	-4.9	1.3	9.8	1 798	12 534
Tajikistan	3	2	7	535	340	835	9	25	25	0.0	9.9	4.9	9	1 104
Turkmenistan	3	14	26	836	2 937	5 041	35	19		-2.6			23	4 564
Uzbekistan	15	14	46	715	553	1 618	20			-2.9			46	1 620
Pacific	**381**	**895**	**1 716**	**14 249**	**26 872**	**46 442**	**23**	**28**	**27**	**0.3**	**2.8**	**4.4**	**1 659**	**44 904**
American Samoa														
Australia	324	760	1 515	18 975	37 021	66 642	23	29	28	0.9	1.5	4.8	1 468	64 551
Cook Islands	0	0	0	3 330	9 411	13 481							0	13 481
Fiji	1	3	4	1 855	3 655	4 393	18	15	19	0.1	1.1	1.0	4	4 254
French Polynesia	3	5	7	16 037	21 433	26 572	15	17	17	-0.5	0.7	0.1	7	26 572
Guam														
Kiribati	0	0	0	581	1 167	1 837	33	43	42	-2.1	2.1	-1.2	0	2 195
Marshall Islands	0	0	0	1 666	2 677	3 601							0	4 563
Micronesia (F.S.)	0	0	0	1 639	2 355	3 079	32	32	33	-0.3	0.2	0.6	0	3 227
Nauru	0	0	0	5 377	2 599	7 151	33	43	42	-2.1	2.1	-1.2	0	6 937
New Caledonia	3	6	10	15 008	27 266	39 469	23	38		-0.9			10	39 469
New Zealand	45	114	163	13 240	27 530	36 879	21	24	19	2.9	-1.4	-1.0	155	35 071
Niue														
Northern Mariana Islands														
Palau	0	0	0	5 096	7 267	11 098	29	21	22	-3.1	-1.0	4.5	0	9 792
Papua New Guinea	3	5	13	790	798	1 795	22	16	14	-1.6	-4.5	-3.1	11	1 638
Samoa	0	0	1	688	2 419	3 560	14	9		-4.3			1	3 375
Solomon Islands	0	0	1	667	915	1 558	20	19	21	-1.8	0.7	-44.0	1	1 373
Tonga	0	0	0	1 703	2 616	4 334	21	22	38	3.9	4.4	25.6	0	4 424
Tuvalu	0	0	0	1 059	2 289	3 714							0	5 539
Vanuatu	0	0	1	1 181	1 878	3 218	26	24	34	-1.2	6.5	0.0	1	3 041
Asia and the Pacific	**6 750**	**12 346**	**24 244**	**1 816**	**3 105**	**5 745**	**26**	**30**	**33**	**-1.8**	**2.5**	**3.5**	**24 449**	**5 793**
Developed countries	3 473	5 445	7 549	24 331	35 911	48 867	25	24	21	-2.8	-2.0	2.1	7 705	49 881
Developing countries	2 501	6 900	16 695	795	1 804	4 106	28	33	38	-1.6	2.5	2.8	16 743	4 118
LLDC	72	129	400	733	1 007	2 834	21	31	24	0.0	5.2	-13.6	371	2 630
LDC	44	97	230	227	367	805							235	822
ASEAN	367	930	2 205	829	1 658	3 656	25	24	28	-0.6	2.9	0.5	2 221	3 682
ECO	405	908	1 858	1 393	2 346	4 367	23	25	27	-1.6	1.6	3.3	1 832	4 306
SAARC	419	1 045	2 313	369	697	1 420	23	36	33	-0.1	3.1	-1.8	2 312	1 420
Central Asia	70	115	358	1 055	1 556	4 526	21	31	22	-1.3	1.4	-16.1	331	4 179
Pacific island dev. econ.	11	22	37	1 840	2 534	3 830	20	23	18	-0.6	4.5	-2.4	36	3 698
Low income econ.	63	109	237	287	371	754							246	783
Lower middle income econ.	598	1 456	3 475	443	831	1 826	23	33	32	-0.5	3.0	-1.2	3 504	1 841
Upper middle income econ.	1 442	4 154	11 294	945	2 415	6 322	30	34	41	-1.7	1.7	3.7	11 303	6 327
High income econ.	3 872	6 626	9 238	19 803	31 349	42 577	26	25	22	-2.5	-0.1	1.6	9 396	43 305
Africa	**507**	**1 010**	**1 905**	**799**	**1 119**	**1 805**	**18**	**21**	**22**	**0.3**	**2.8**	**-1.9**	**1 809**	**1 713**
Europe	**8 010**	**14 706**	**19 152**	**13 662**	**24 930**	**31 982**	**23**	**25**	**21**	**0.9**	**3.5**	**1.1**	**19 173**	**32 016**
Latin America and Carib.	**1 123**	**2 795**	**5 792**	**2 524**	**4 975**	**9 621**	**21**	**22**	**22**	**-2.5**	**2.8**	**2.8**	**5 624**	**9 343**
North America	**6 341**	**13 705**	**16 737**	**22 462**	**41 461**	**47 884**	**21**	**20**	**16**	**1.4**	**-1.9**	**1.1**	**16 928**	**48 432**
World	**23 042**	**45 484**	**69 735**	**4 190**	**7 047**	**10 002**	**23**	**24**	**24**	**-1.8**	**2.5**	**3.2**	**69 826**	**10 015**

G.1.3 Economic sectors

	Value added by sector									Average annual growth rate of value added								
	Agriculture			Industry			Services			Agriculture			Industry			Services		
	% of value added									% change per annum								
	1990	2000	2011	1990	2000	2011	1990	2000	2011	91-01	01-11	2011	91-01	01-11	2011	91-01	01-11	2011
East and North-East Asia	**5**	**5**	**5**	**38**	**35**	**36**	**57**	**60**	**59**	**3**	**2**	**9**	**3**	**5**	**5**	**6**	**4**	**3**
China	27	15	10	41	46	47	32	39	43	11	12	18	18	16	18	19	16	17
DPR Korea	33	45	31	67	55	69				-1	50	3	-5	59	-1			
Hong Kong, China	0	0	0	23	13	7	77	87	93	-4	-2	-5	1	-1	7	8	4	8
Japan	2	2	1	38	31	27	60	67	72	-2	-3	-3	-2	-2	-4	2	0	-2
Macao, China				24	15	12	76	85	88				-1	16	116	5	17	28
Mongolia	14	31	19	35	25	35	51	44	46	55	19	54	43	27	22	42	22	30
Republic of Korea	9	5	3	40	39	40	51	57	58	5	2	8	10	7	7	12	7	5
South-East Asia	**15**	**12**	**12**	**37**	**40**	**39**	**48**	**48**	**48**	**17**	**16**	**18**	**22**	**17**	**18**	**19**	**17**	**19**
Brunei Darussalam	1	1	1	62	64	72	37	35	28	6	1	3	5	9	31	4	4	4
Cambodia	50	38	37	12	23	24	38	39	40	22	13	13	34	13	12	24	13	8
Indonesia	18	16	15	39	46	47	43	38	38	19	16	11	21	16	16	18	16	17
Lao PDR	45	43	28	12	19	28	43	38	43	34	11	12	40	20	15	32	17	24
Malaysia	15	8	12	38	45	41	47	46	47	4	14	27	11	8	9	10	9	9
Myanmar	57	57	38	11	10	24	32	33	37	34	24	15	35	40	3	35	31	8
Philippines	19	14	13	38	34	32	43	52	56	7	9	12	10	9	5	13	10	9
Singapore	0	0	0	32	35	27	68	65	73	-4	-2	1	6	6	0	7	8	7
Thailand	10	9	12	37	37	38	53	55	50	6	11	12	7	8	0	8	7	7
Timor-Leste	23	21	5	42	35	82	35	45	13	6	12	37	2	46	36	11	13	26
Viet Nam	39	25	22	23	37	40	39	39	38	14	17	37	26	19	25	21	18	26
South and South-West Asia	**23**	**19**	**15**	**31**	**28**	**28**	**46**	**53**	**57**	**24**	**20**	**22**	**32**	**26**	**24**	**28**	**23**	**27**
Afghanistan	36	57	31	24	23	24	41	20	46	101	11	23	102	16	29	95	27	12
Bangladesh	31	26	18	21	25	29	47	49	53	6	9	12	11	13	14	9	13	14
Bhutan	39	27	18	28	36	44	33	37	38	11	10	18	18	15	11	16	14	11
India	30	23	17	28	26	26	42	50	56	10	11	11	13	15	9	15	16	16
Iran (Islamic Rep. of)	18	13	9	28	36	41	54	50	49	26	20	22	33	26	25	30	23	28
Maldives	8	5	3	9	12	16	83	83	81	11	5	5	16	14	16	13	12	12
Nepal	48	38	37	12	17	15	39	45	48	11	12	20	16	10	13	14	12	11
Pakistan	25	26	22	25	23	25	49	51	53	13	15	24	13	16	19	14	16	22
Sri Lanka	26	18	12	29	30	30	45	53	58	11	14	10	16	17	19	17	19	17
Turkey	13	11	9	39	30	27	48	59	64	72	17	12	70	17	22	80	18	16
North and Central Asia	**19**	**8**	**5**	**48**	**39**	**38**	**32**	**53**	**57**	**147**	**21**	**33**	**143**	**25**	**21**	**160**	**25**	**25**
Armenia	17	25	22	54	38	32	29	37	46	163	10	30	151	11	-3	170	15	13
Azerbaijan	30	17	6	33	45	66	37	38	28	133	13	16	161	30	23	152	22	11
Georgia	31	22	9	36	22	23	32	56	68	250	3	29	238	14	23	280	15	12
Kazakhstan	33	9	5	33	40	40	34	51	54	137	17	43	165	24	19	175	24	25
Kyrgyzstan	34	37	20	38	31	28	28	32	52	95	7	28	90	13	21	99	19	20
Russian Federation	18	7	4	50	39	37	32	54	59	122	14	27	133	19	24	150	20	16
Tajikistan	26	27	22	42	38	28	31	34	51	159	25	20	162	23	20	177	33	22
Turkmenistan	32	23	12	30	42	54	38	35	34	293	15	24	317	27	24	300	24	24
Uzbekistan	33	35	20	36	23	33	30	42	47	203	25	33	189	37	21	216	33	34
Pacific	**4**	**5**	**3**	**30**	**26**	**28**	**66**	**69**	**69**	**6**	**2**	**3**	**4**	**7**	**4**	**5**	**6**	**5**
American Samoa																		
Australia	3	4	3	31	26	28	66	70	69	9	2	-3	5	8	6	6	7	5
Cook Islands	11	10	5	8	8	9	80	81	86	4	-1	4	8	5	6	8	5	3
Fiji	19	16	13	20	19	20	61	65	67	3	5	25	7	5	4	7	6	13
French Polynesia	4	4	2	17	16	14	79	80	83	2	0	3	2	1	3	3	3	3
Guam																		
Kiribati	28	22	26	14	12	9	58	66	66	4	6	14	7	1	15	8	4	14
Marshall Islands	14	10	13	13	19	13	73	71	75	0	7	-9	8	1	8	3	6	11
Micronesia (F.S.)	25	25	27	7	9	6	68	66	67	3	4	10	5	0	-13	3	3	9
Nauru	8	7	5	4	8	42	88	85	53	-5	3	-16	0	29	17	-5	2	-8
New Caledonia	2	2	2	25	26	28	73	72	71	7	2	10	3	9	0	5	6	8
New Zealand	7	8	6	29	25	25	65	66	69	7	1	1	4	5	4	6	5	4
Niue																		
Northern Mariana Islands																		
Palau	26	4	3	15	15	21	59	81	76	-15	4	8	6	9	10	7	6	7
Papua New Guinea	30	35	31	31	41	44	39	24	25	14	10	12	12	12	11	6	11	21
Samoa	21	17	10	29	27	27	51	57	63	8	2	7	12	6	2	14	8	5
Solomon Islands	46	35	29	8	13	10	47	53	61	7	16	20	14	12	21	17	13	16
Tonga	35	22	19	14	21	22	52	57	59	-2	7	14	10	9	21	6	8	5
Tuvalu	26	17	22	15	13	9	60	70	68	4	6	3	6	0	4	9	4	1
Vanuatu	24	25	22	10	12	11	66	62	68	6	5	5	4	7	5	4	7	5
Asia and the Pacific	**11**	**7**	**7**	**38**	**34**	**35**	**51**	**59**	**58**	**16**	**16**	**19**	**14**	**17**	**19**	**13**	**15**	**20**
Developed countries	2	2	1	37	31	27	61	68	71	-2	-3	-3	-2	-2	-4	2	0	-2
Developing countries	19	13	10	39	38	39	42	50	51	17	17	19	20	18	19	18	17	21
LLDC	32	22	13	33	35	42	35	43	46	37	15	23	47	26	18	38	23	28
LDC	37	33	25	19	23	27	44	45	48	25	14	13	30	19	11	24	17	14
ASEAN	15	12	12	37	40	39	48	48	49	17	16	18	22	17	18	19	17	19
ECO	19	14	11	34	31	33	47	55	56	26	20	22	33	26	25	30	23	28
SAARC	30	24	18	27	26	26	44	50	56	10	12	13	13	15	12	15	16	16
Central Asia	32	18	10	35	37	44	34	45	47	164	23	34	163	30	19	181	29	31
Pacific island dev. econ.	13	14	13	22	25	27	65	61	61	5	3	8	3	7	1	4	5	6
Low income econ.	35	34	26	33	28	30	42	44	49	21	16	14	26	19	8	21	17	9
Lower middle income econ.	26	21	17	31	31	31	43	47	52	17	16	19	22	17	18	19	17	19
Upper middle income econ.	20	12	9	43	41	43	37	47	48	25	20	22	32	25	24	29	23	27
High income econ.	3	2	2	37	31	28	60	67	70	2	1	6	3	5	4	6	4	2
Africa	**17**	**14**	**16**	**36**	**37**	**36**	**47**	**49**	**48**	**17**	**12**	**4**	**16**	**17**	**13**	**16**	**13**	**6**
Europe	**4**	**2**	**2**	**33**	**28**	**26**	**62**	**69**	**72**	**19**	**23**	**52**	**16**	**23**	**61**	**14**	**19**	**43**
Latin America and Carib.	**9**	**5**	**5**	**37**	**32**	**33**	**54**	**62**	**61**	**14**	**10**	**10**	**17**	**13**	**18**	**19**	**10**	**9**
North America	**2**	**1**	**1**	**28**	**24**	**21**	**70**	**75**	**78**	**0**	**5**	**3**	**4**	**3**	**5**	**6**	**4**	**4**
World	**6**	**4**	**4**	**33**	**29**	**29**	**61**	**67**	**67**	**16**	**16**	**18**	**15**	**17**	**19**	**13**	**15**	**19**

G.2. Fiscal balance

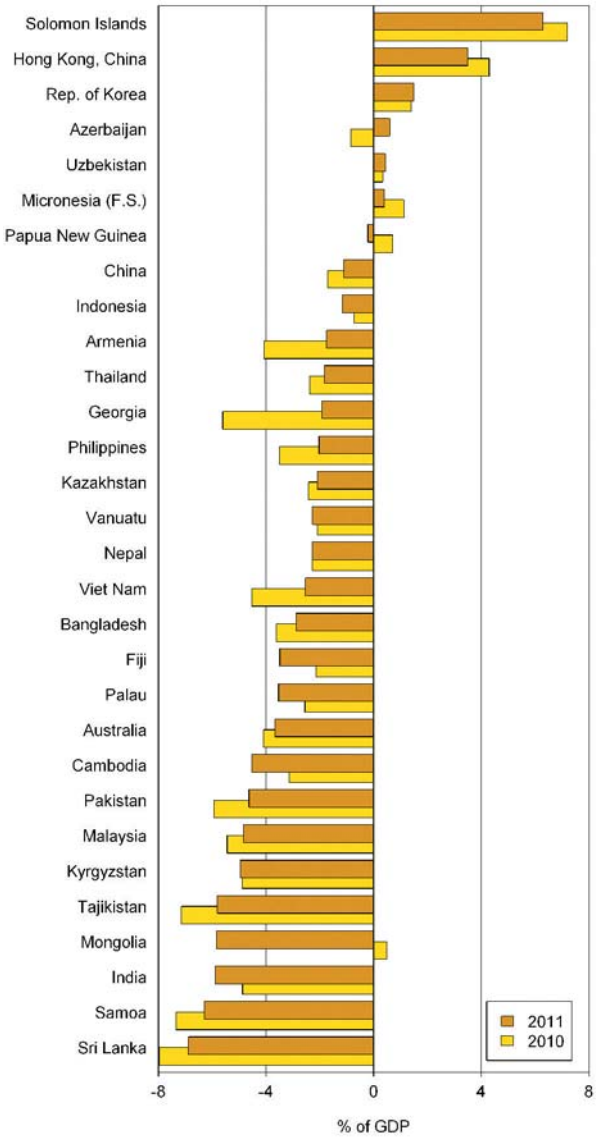
Fiscal balance refers to the difference between government revenues (through taxation and sales of assets) and expenditure. A budget surplus indicates a positive fiscal balance whereas a deficit indicates a negative fiscal balance. Budget deficits can be cyclical or structural; that is, they can remain across business cycles due to excessive government spending compared with revenues. Fiscal policies have a direct effect on the economic performance of a country. The present topic focuses on the fiscal policies adopted by countries in the Asian and Pacific region in an effort to mitigate the effects of the recent financial crisis and to maintain economic growth.

Fiscal positions have deteriorated in most countries in Asia and the Pacific since the global financial crisis began in 2008. This is demonstrated through the increase in fiscal deficits as a percentage of GDP.

The average fiscal deficit in developing economies in the Asian and Pacific region nearly doubled from 1.0 per cent of GDP in the five years prior to the global financial crisis (2003-2007) to 1.9 per cent of GDP during 2008-2011. This was due to an unprecedented scale of fiscal support to revive domestic demand and sluggish economic activities, partly at the expense of tax revenue. The crisis indeed reversed the improving trend in the fiscal performance observed in the pre-crisis period, when the average deficit softened from 2.6 per cent of GDP in 2001 to 0.8 per cent of GDP in 2006 before turning to a small surplus in 2007. If developed economies in the region are included, the overall picture in 2010 would be even less encouraging given a turnaround from fiscal surpluses to deficits in Australia and New Zealand and more pronounced deficits in Japan.

The average fiscal deficit in developing economies in the region stood at 1.7 per cent of GDP in 2011, which was comparable to 1.8 per cent of GDP in 2010. The marginal change in the regional average nonetheless masks a further increase in the already high deficits in countries of the South Asian Association for Regional Cooperation, at close to 6 per cent of GDP in 2011. While South-East Asia and developing economies in the Pacific recorded a slight increase in their fiscal deficits the same year, the fiscal conditions improved in East and North-East Asia, excluding Japan and Central Asia (based on 2010 data). As in the several preceding years, India, Malaysia, Maldives, Myanmar, Pakistan and Sri Lanka experienced sizeable fiscal deficits in 2011. The persistent shortfalls have constrained fiscal space in many of these countries, thereby weakening their ability to

Figure G.2-1
Fiscal balance as a percentage of GDP, Asia and the Pacific, 2010 and 2011



weather adverse demand shocks. On the other hand, Brunei Darussalam, Kiribati, Singapore and Hong Kong, China have consistently enjoyed fiscal surpluses in recent years.

Figure G.2-2
Government expenditure and revenue trends, Asia-Pacific developing economies, 2000-2011 (percentage of GDP)

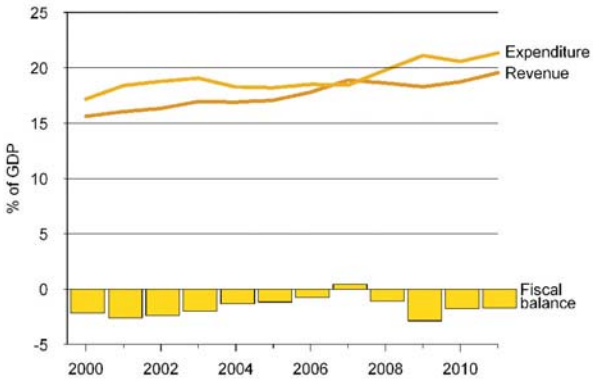
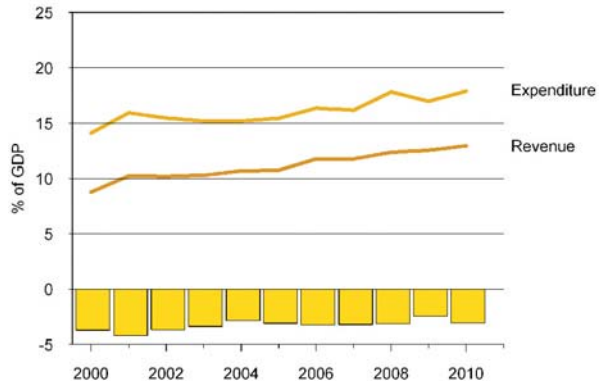


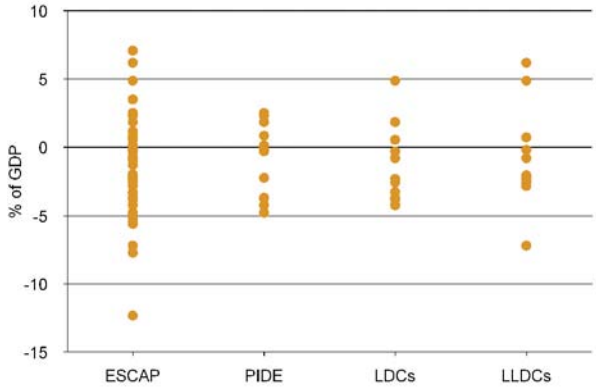
Figure G.2-3
Government expenditure and revenue trends, Least developed countries (LDC), 2000-2011 (percentage of GDP)



Countries with lower income levels faced higher budget deficits in 2010 and 2011.

Most least developed countries have exhibited notable fiscal deficits over recent years. As a group, least developed countries appeared to fare less favourably than landlocked developing countries and Pacific island developing economies. Although the average government revenue-expenditure ratio in least developed countries rose steadily from 62.0 per cent in 2000 to about 72.4 per cent in 2010-2011, the level is still much lower than that of developing economies in the region (at slightly above 90 per cent). The data point to a need to push up the government revenue-GDP ratio in least developed countries from the currently low level of about 10 per cent.

Figure G.2-4
The distribution of fiscal balance-GDP ratio in selected groupings, 2007-2011 average



Note: The chart displays data for 44 countries in the region, 14 least developed countries, 12 landlocked developing countries, and 12 Pacific island developing economies. Brunei Darussalam and Kiribati are excluded from the chart, as their average fiscal balances during 2007-2011 were about 20 per cent of GDP. For the Pacific island developing economies grouping, the data are missing for American Samoa, French Polynesia, Guam, Nauru, New Caledonia, Niue and Northern Mariana Islands.

Box G.2
Fiscal policy in Asia and the Pacific[a]

Some countries in the Asian and Pacific region have implemented measures to improve fiscal conditions and to ensure that public spending achieves inclusive and sustainable development.

Several countries have recently launched measures to enhance fiscal conditions in the aftermath of the financial crisis. On the revenue side, new taxes have been introduced or reintroduced: the value added tax in the Lao People's Democratic Republic in 2010, the 15 per cent withholding tax on interest from bank deposits in the Cook Islands, the net profit tax in the Federated States of Micronesia in late 2012, and the licensing scheme for foreign vessels in Nauru. Efforts to broaden the tax base, simplify the tax structure or modernize the tax administration are seen in Bangladesh, Myanmar, Pakistan, the Philippines and Sri Lanka. On the expenditure side, Turkey rationalized administered prices in 2012 to relieve some fiscal burden, while Malaysia placed greater emphasis on the value-for-money of public spending programmes. Meanwhile, India announced its five-year fiscal consolidation plan.

Examples of the use of government revenues for inclusive development include financial assistance to vulnerable groups such as low-income and elderly citizens in Malaysia and Singapore, higher health insurance subsidies in Viet Nam, a free education policy in Papua New Guinea, and electrification in Myanmar and Timor-Leste. Some countries in Asia and the Pacific have also demonstrated a shift towards programmes that support sustainable development, such as energy-saving technology in China and green growth in the Republic of Korea.

[a] ESCAP, *Economic and Social Survey of Asia and the Pacific 2013: Forward-looking Macroeconomic Policies for Inclusive and Sustainable Development* (United Nations publication, Sales No. E.13.II.F.2).

Further reading

ESCAP. *Economic and Social Survey of Asia and the Pacific 2013: Forward-looking Macroeconomic Policies for Inclusive and Sustainable Development* (United Nations publication, Sales No. E.13.II.F.2). Available from www.unescap.org/pdd/publications/survey2013/index.asp.

International Monetary Fund. *Fiscal Monitor.* Available from www.imf.org/external/ns/cs.aspx?id=262.

Technical notes

Fiscal balance (percentage of GDP)

The difference between total revenues and total expenditures of the central Government expressed as a percentage of GDP. **Aggregate calculations:** Weighted averages using GDP as weight. Missing data are not imputed.

Government revenue (percentage of GDP)

Total current and capital revenues received by the central Government expressed as a percentage of GDP. **Aggregate calculations:** Weighted averages using GDP as weight. Missing data are not imputed.

Government expenditure (percentage of GDP)

The sum of current and capital expenditures of the central Government expressed as a percentage of GDP. **Aggregate calculations:** Weighted averages using GDP as weight. Missing data are not imputed.

Source

Source of fiscal balance data: Asian Development Bank, *Key Indicators for Asia and the Pacific 2012* (Mandaluyong City, Philippines, 2012). Data on government expenditures and revenue are mostly taken from country sources. The coverage of budget data is not standard throughout the region. Data provided by many countries refer only to the central Government, but those provided by other countries refer to provincial and local governments as well. **Data obtained:** 13 February 2013.

G.2.1 Fiscal balance

	Government revenue				Government expenditure				Fiscal balance			
	% of GDP				% of GDP				% of GDP			
	1995	2000	2010	2011	1995	2000	2010	2011	1995	2000	2010	2011
East and North-East Asia	**12.4**	**13.1**	**16.8**	**17.9**	**16.0**	**17.8**	**20.3**	**21.7**	**-3.5**	**-5.0**	**-3.5**	**-3.8**
China	10.3	13.5	20.7	22.3		16.3	22.4	23.4		-2.8	-1.7	-1.1
DPR Korea												
Hong Kong, China	16.1	17.1	21.6	22.9	16.4	17.7	17.4	19.4	-0.3	-0.6	4.3	3.5
Japan	12.0	11.8	11.2	11.3	16.0	18.1	18.0	19.6	-4.0	-6.3	-6.7	-8.3
Macao, China												
Mongolia	24.7	34.0	36.7	38.4	23.3	36.0	33.8	39.7	-1.5	-7.7	0.5	-5.8
Republic of Korea	17.8	22.5	23.1	23.6	15.3	18.1	21.4	22.1	0.3	1.1	1.4	1.5
South-East Asia	**20.9**	**17.9**	**17.9**	**17.9**	**17.0**	**18.3**	**18.9**	**19.8**	**3.5**	**-0.8**	**-1.1**	**-1.8**
Brunei Darussalam	36.5	49.1	54.3	47.7	66.0	40.6	28.5	23.7	15.1	10.9	25.8	24.0
Cambodia	7.6	10.0	13.2	12.7	14.8	14.8	21.3	20.3	-7.2	-2.1	-3.1	-4.5
Indonesia	17.7	14.7	15.8	16.2	14.7	15.8	16.6	17.4	3.0	-1.1	-0.7	-1.2
Lao PDR	11.1	13.1	15.1		26.7	20.8	23.9		-12.9	-4.6	-2.2	
Malaysia	22.9	17.4	20.1	21.0	22.1	22.9	25.5	25.9	0.8	-5.5	-5.4	-4.8
Myanmar	6.5	4.2	14.0		9.8	3.5	18.5		-3.2	0.7	-4.5	
Philippines	18.9	14.3	13.4	14.0	18.2	18.1	16.8	15.8	0.6	-3.7	-3.5	-2.0
Singapore	34.8	29.8	22.4		15.6	18.5	14.7		14.0	9.9	7.7	
Thailand	18.1	14.7	16.7	17.9	15.3	16.9	19.1	19.8	2.6	-2.8	-2.4	-1.8
Timor-Leste			22.0				18.4				3.6	
Viet Nam	21.9	20.1	28.0	26.4	23.8	22.6	30.7	28.0	-1.3	-4.3	-4.5	-2.5
South and South-West Asia												
Afghanistan			10.8				20.6				0.4	
Bangladesh	9.8	8.5	11.5	12.5	14.4	14.5	15.2	15.2	-2.2	-4.5	-3.6	-2.9
Bhutan	19.1	23.2	23.4	22.9	37.2	42.2	38.6	38.7	0.1	-3.9	2.0	19.3
India	9.9	9.8	10.7	9.0	14.1	15.5	15.6	14.9	-4.2	-5.7	-4.9	-5.9
Iran (Islamic Rep. of)												
Maldives	25.8	30.0	24.1	27.8	36.6	37.3	41.4	41.8	-6.4	-4.4	-16.1	-10.2
Nepal	10.4	10.5	15.0	15.2	16.6	16.3	20.4	21.4	-4.5	-4.3	-2.3	-2.3
Pakistan	17.3	13.4	14.0	14.3	23.0	18.9	20.3	19.1	-5.6	-5.4	-5.9	-4.6
Sri Lanka	20.6	16.4	14.6	14.3	29.6	25.0	22.1	20.9	-8.8	-9.3	-8.0	-6.9
Turkey												
North and Central Asia												
Armenia	14.4	15.9	22.3	21.5	24.0	20.1	27.3	24.0	-5.9	-4.9	-4.1	-1.7
Azerbaijan	11.8	14.7	26.8	31.3	20.1	16.2	27.6	30.4	-5.2	-1.0	-0.9	0.6
Georgia		15.5	27.1	29.0		16.3	34.0	30.7		-1.3	-5.6	-1.9
Kazakhstan	19.6	22.9	14.2	15.3	25.7	22.2	22.0	21.5	-4.0	-0.1	-2.4	-2.1
Kyrgyzstan	16.7	14.2	23.1	25.3	27.8	18.0	31.2	33.4	-11.5	-2.2	-4.9	-5.0
Russian Federation												
Tajikistan	10.0	14.1	19.3	21.1	17.4	14.7	25.1	27.4	-7.4	-0.6	-7.1	-5.8
Turkmenistan	20.5	23.5	14.3		20.1	23.9	12.6		0.4	-0.3	1.8	
Uzbekistan	29.7	28.0	21.8	21.9	32.6	28.9	21.5	21.5	-2.9	-1.0	0.3	0.4
Pacific	**24.4**	**26.3**	**23.7**	**22.1**	**26.5**	**24.7**	**28.1**	**25.8**	**-2.1**	**1.8**	**-4.3**	**-3.6**
American Samoa												
Australia	22.1	25.2	22.6	22.0	25.0	23.5	26.7	25.7	-2.9	1.8	-4.1	-3.7
Cook Islands	39.8	27.0	29.9		48.3	31.0	35.6		-2.8	-1.5	3.3	
Fiji	25.5	25.5	25.3	25.1	26.0	28.6	27.4	28.7	-0.3	-3.1	-2.1	-3.5
French Polynesia												
Guam												
Kiribati	79.5	93.4	79.1		86.7	86.5	90.2		15.9	41.8	12.9	
Marshall Islands	29.6	22.0	24.7		93.1	58.6	62.4		-27.2	8.1	4.6	
Micronesia (F.S.)	26.4	22.5	22.3	20.4	77.0	67.2	66.9	61.3	-0.4	-3.5	1.1	0.4
Nauru			39.2				83.6					
New Caledonia												
New Zealand	38.3	34.6	33.8		35.5	32.6	40.8		2.9	2.0	-7.1	
Niue												
Northern Mariana Islands												
Palau		19.5	18.8	18.9	68.5	56.8	45.3	40.6		-12.2	-2.6	-3.5
Papua New Guinea	24.0	25.7	26.1	27.7	28.3	32.9	30.7	31.5	-0.5	-2.0	0.7	-0.2
Samoa	29.3	25.6	25.1	27.4	39.6	31.2	42.1	41.9	-7.0	-0.7	-7.3	-6.3
Solomon Islands	27.7	21.6	32.2	39.8	32.3	31.6	34.6	40.5	-4.6	-0.6	7.2	6.3
Tonga	25.6	21.1	20.6		26.3	22.2	28.4		1.0	-0.3	-4.9	
Tuvalu		216.4	51.9	56.2	53.2	186.9	104.1	93.3		-2.0	-0.1	
Vanuatu	24.2	18.2	18.1	17.7	29.3	25.3	27.0	23.4	-2.7	-6.1	-2.1	-2.3
Asia and the Pacific	**13.7**	**14.1**	**16.9**	**17.4**	**16.8**	**18.1**	**20.4**	**21.2**	**-2.9**	**-4.3**	**-3.5**	**-3.7**
Developed countries	13.0	13.1	13.8	13.5	16.9	18.7	20.1	20.9	-3.9	-5.6	-6.2	-7.3
Developing countries	15.2	15.6	18.7	19.6		17.2	20.6	21.3		-2.2	-1.8	-1.7
LLDC	20.4	21.5	18.0	20.1	26.0	22.9	22.8	24.0	-4.2	-1.4	-1.5	-1.4
LDC	9.7	8.8	13.0		14.8	14.1	17.9		-3.2	-3.7	-3.1	
ASEAN	20.9	17.9	17.9	17.9	17.0	18.3	18.9	19.8	3.5	-0.8	-1.1	-1.8
ECO												
SAARC	11.3	10.4	11.2	9.9	15.9	16.1	16.3	15.5	-4.4	-5.6	-4.9	-5.6
Central Asia	21.7	22.4	18.5	20.3	26.9	22.9	23.2	24.0	-3.9	-0.8	-1.8	-1.3
Pacific island dev. econ.												
Low income econ.	9.5	8.5	12.9		14.4	13.5	17.8		-3.2	-3.7	-3.5	
Lower middle income econ.	14.6	12.5	13.4	12.6	16.5	16.9	17.2	16.7	-1.8	-4.5	-3.8	-4.2
Upper middle income econ.		14.0	20.4	21.9		16.9	22.4	23.3		-2.9	-1.9	-1.3
High income econ.	13.8	14.3	15.4		16.7	18.6	20.0		-3.2	-4.6	-4.6	
Africa												
Europe												
Latin America and Carib.												
North America												
World												

G.3. Monetary measures

Monetary policy is a set of measures or actions implemented by central banks to manage the size and growth of the money supply, usually with the aim of maintaining price stability. It influences investment decisions and expectations about economic activity, inflation,[1] asset prices and exchange rates with other currencies. The present topic sheds light on how countries in the Asian and Pacific region have used monetary measures to mitigate the effects of the world economic crisis that began in 2008.

There was an increasing trend in the inflation rate between 2010 and 2011 as a result of strong demand-pull inflation, coupled with supply-push cost rises, especially for food and fuel.

The Asian and Pacific region saw an increasing trend in the inflation rate between 2010 and 2011, as was the case worldwide, driven by high global food and oil prices, as well as strong domestic demand leading to higher core inflation. Excess liquidity created by loose monetary policy in the developed world in the aftermath of the economic crisis of 2008/09 also contributed to a rise in consumer prices.

Global food prices remained at almost record levels and oil prices increased to levels not seen since the onset of the world economic crisis due to non-demand related factors, such as political instability in major oil producing countries.[2] The impact of inflation on poorer groups would be more marked, as they typically face a higher consumption-income ratio and swifter price increases.

In East and North-East Asia, consumer prices climbed rapidly in 2011. At the country level, consumer prices shot up across the subregion except in Mongolia, where inflation decelerated slightly from 10.1 per cent in 2010 to 9.5 per cent in 2011, while Japan continued to experience deflation of 0.3 per cent in 2011.

In South-East Asia, the inflation rate accelerated in nearly all economies in 2011. In addition to its relatively robust economic outlook and high global commodity prices, persistent inflationary pressures were further fuelled by natural disasters damaging agricultural crops and the depreciation of national currencies, which induced inflation amid renewed global uncertainties.

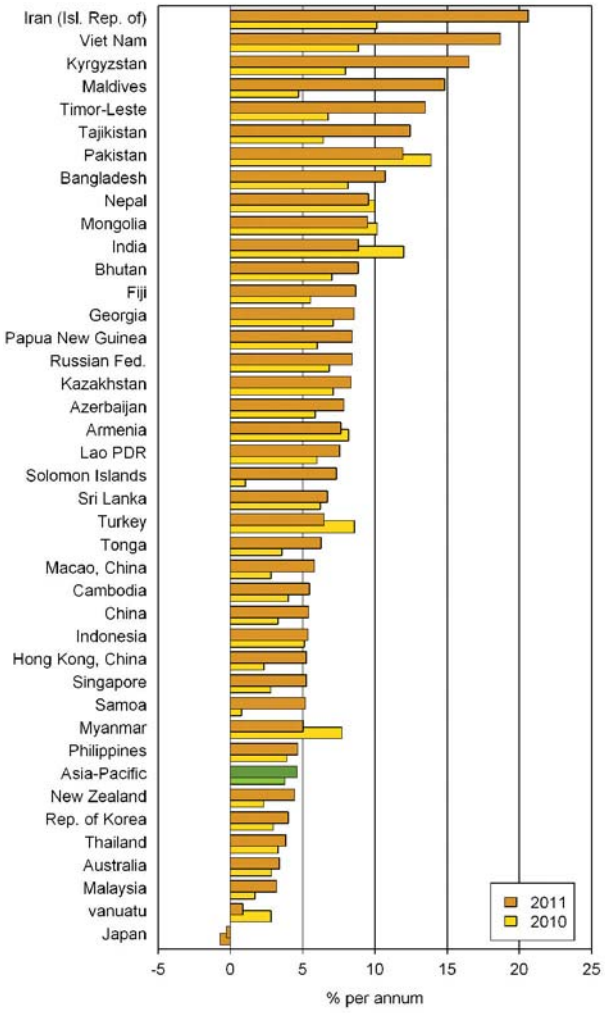
Consumer prices continued to remain stubbornly high in South and South-West Asia despite some signs that the inflation rate was decelerating in a few economies. This was the case in India and Pakistan, where the inflation rate decreased by 3 percentage points and 2 percentage points, respectively. The inflation rate in India turned around in 2012, while Pakistan continued to see a decrease. The rate of increase in global commodity prices slightly eased in 2011, but the levels remained high, especially for crude oil. The large budget deficits and depreciation of domestic currencies in some countries further contributed to inflation through increased prices of imported goods.

In North and Central Asia, inflation rose in all economies except Armenia. The impact of domestic food inflation has been especially drastic, as food comprises about half of the consumption basket in the economies of the subregion, some of which are highly dependent on imported food. The Russian Federation, which has a large impact on other economies in the subregion through trade, investment and remittance channels, experienced a rapid increase in the inflation rate from 6.9 per cent in 2010 to 8.4 per cent in 2011. It then decreased to 5.1 per cent in 2012.

[1] For the present topic, the rate of inflation is the annual percentage change in the consumer price index, referring to the prices of selected goods and services for a given population.

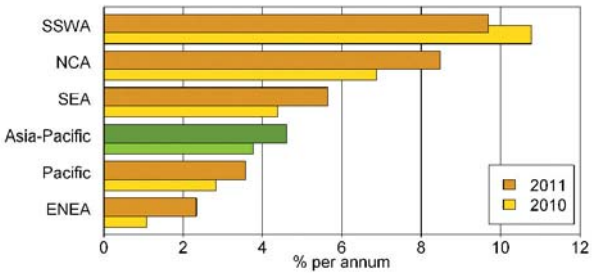
[2] ESCAP estimates that, if oil prices were to increase by about $25 a barrel from their already elevated levels for an extended period, inflation in developing economies in the Asian and Pacific region would increase significantly, by 1.3 percentage points on average. See ESCAP, *Economic and Social Survey of Asia and the Pacific 2012: Pursuing Shared Prosperity in an Era of Turbulence and High Commodity Prices* (United Nations publication, Sales No. E.12.II.F.9). Available from www.unescap.org/pdd/publications/survey2012/download/Survey_2012.pdf.

Figure G.3-1
Inflation rates, Asia and the Pacific, 2010 and 2011



The Pacific subregion experienced a rising inflation rate in 2011, with the exception of Vanuatu. The increasing inflation rate was the case for both developed and developing economies (for which data are available) in this subregion.

Figure G.3-2
Inflation rates by subregion, Asia and the Pacific, 2010 and 2011



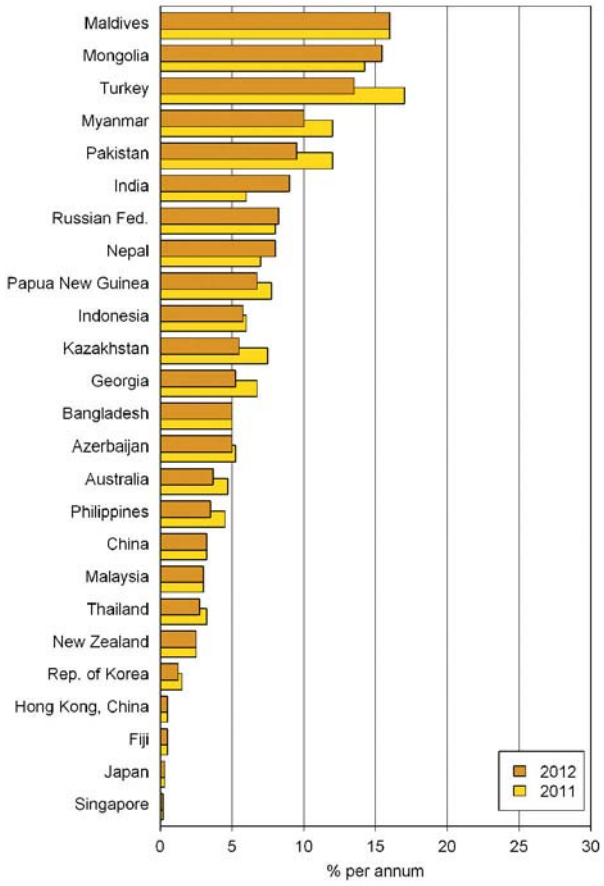
Increased inflationary pressure led central banks in many countries to augment their discount rates, and, in some countries with slowing economic activity, policymakers faced the dilemma of either supporting the domestic economy or fighting inflation.

Discount rates (interest rates charged by central banks on short-term loans to commercial banks and other financial intermediaries) are generally determined to manage the pace of economic growth and the presence of inflationary pressures. Difficult policy trade-offs may be involved in determining discount rates, especially when inflation is driven by external factors. With inflation remaining relatively high in some countries in the region due to domestic factors, and with concerns about global commodity prices, policymakers in the region faced the dilemma of maintaining price stability at a time of slackening growth resulting from the uncertain global economic environment.

The concerns about growth prospects and already high inflation resulted in mixed responses in discount rates in Asia and the Pacific. In 2012, of the 27 countries for which data are available, the central bank discount rate was raised in 12, reduced in 6, and remained unchanged in the other 9. The most significant hikes were in Mongolia (where it continued to increase in 2012), in Turkey (where it took a downturn in 2012, while the inflation rate climbed to nearly 9 per cent) and in Viet Nam. Modest reductions, on the other hand, took place in Pakistan (where the downward trend continued in 2012, in line with the decreasing inflation rate) and in Fiji. Japan has been maintaining its rate of deflation steadily at 0.3 per cent since 2008.

Central banks need to find their preferred inflation-growth combination, taking into account the prevailing sociopolitical situation and accepted levels of inflation. Other factors that may be taken into consideration include the size of the fiscal deficit and the cost of servicing it. Decision makers must consider the time lag related to monetary policy.

Figure G.3-3
Central bank discount rates, Asia and the Pacific, 2011 and 2012

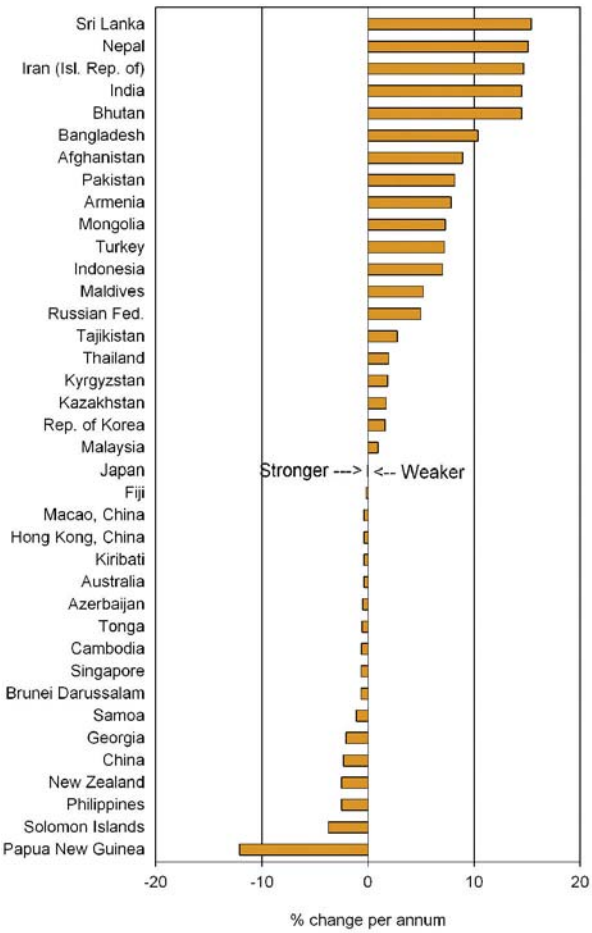


Many countries in Asia experienced currency depreciation in 2012.

Many Asian currencies depreciated against the United States dollar in 2012, as the dollar somewhat rebounded, benefiting from the country's better outlook for growth than that of the eurozone economies, coupled with the currency's continued standing as a safe haven in times of market uncertainty. The sluggish growth prospects of Asia and the Pacific and the deterioration in external balances, especially in South Asia, also contributed to currency depreciation.

The currencies of 19 out of 40 countries for which data are available depreciated by 1 per cent or more against the United States dollar in 2012. The most appreciated currencies in 2012, relative to the period averages of the previous year, include the Papua New Guinean kina, the Solomon Islands dollar and the Philippine peso. Prominent among countries that experienced a depreciation of their exchange rates in 2012 were Bangladesh, Bhutan, India, the Islamic Republic of Iran, Nepal and Sri Lanka, with a depreciation of more than 10 per cent in each, reflecting their deteriorating external balances. All of these countries also sustained a high level of inflation over the period 2010-2012. The average annual exchange rates of Australia, Azerbaijan, Fiji and Kiribati remained unchanged against the United States dollar in 2012. Hong Kong, China and Macao, China maintain quasi-fixed pegs between their currencies and the United States dollar and therefore experienced almost no change. Maldives broke its peg to the United States dollar in 2011, and its currency depreciated by over 14 per cent by the end of that year (the inflation rate rose rapidly from 6.2 per cent in

Figure G.3-4
Change in average exchange rates against the United States dollar, Asia and the Pacific, 2012



2010 to 11.3 per cent in 2011) and then regained its strength, demonstrated by a 5 per cent increase in its average exchange rate in 2012.

The Federated States of Micronesia is the only Asian and Pacific country to use the United States dollar as its national currency.

Further reading

ESCAP. *Economic and Social Survey of Asia and the Pacific 2012: Pursuing Shared Prosperity in an Era of Turbulence and High Commodity Prices* (United Nations publication, Sales No. E.12.II.F.9). Available from www.unescap.org/pdd/publications/survey2012/download/Survey_2012.pdf.

Technical notes

Inflation rate (percentage per annum)

The rate of increase of the level of prices during a given period. It is the percentage change in the consumer price index between two points in time. **Aggregate calculations:** Weighted averages using household consumption expenditure component of the GDP as weight. Missing data are not imputed.

Central bank discount rate (percentage per annum)

The rate at which the central bank lends or discounts eligible paper for deposit money to banks; typically reported on an end-of-period basis.

Average exchange rate (national currency per United States dollar, percentage change per annum)

Units of national currency required to purchase one United States dollar, usually representing the period average. For some countries, midpoint rates, or the average of buying and selling rates, are used. The average annual rate of change in the exchange rate of the national currency against the United States dollar for the period indicated. A positive value means that the national currency has weakened, whereas a negative value indicates a stronger national currency. Rates of change over several years are calculated using the arithmetic growth model.

Sources

Source of inflation data: International Monetary Fund (IMF), International Financial Statistics (available fromhttp://elibrary-data.imf.org/). The data series are compiled from reported versions of national indices. Variation is wide between countries and over time in the selection of base years, depending upon the availability of comprehensive benchmark data that permit an adequate review of weighting patterns. The series are linked by using ratio splicing at the first annual overlap; the linked series are shifted to a common base period 2005=100. **Data obtained:** 7 May 2013.

Source of central bank discount rate data: IMF, International Financial Statistics. Data are reported by countries. **Data obtained:** 7 May 2013.

Source of average exchange rate data: IMF, International Financial Statistics. IMF maintains a database of official exchange rates from countries. IMF is normally provided with rates as currency units per United States dollar by the issuing central bank. Rates are usually reported for members whose currencies are used in IMF financial transactions. **Data obtained:** 7 May 2013.

G.3.1 Inflation, interest and exchange rates

	Inflation rate			Central bank discount rate			Average exchange rate			Average exchange rate		
	% per annum			% per annum			National currency per US dollar			% change per annum		
	1990	2011	2012	1990	2011	2012	1990	2000	2012	90-00	00-10	2012
East and North-East Asia	**3.6**	**2.3**										
China	3.1	5.4	2.7	7.9	3.3	3.3	4.8	8.3	6.3	7.3	-1.8	-2.3
DPR Korea												
Hong Kong, China	10.2	5.3	4.1		0.5	0.5	7.8	7.8	7.8	0.0	0.0	-0.4
Japan	3.0	-0.3	0.0	6.0	0.3	0.3	144.8	107.8	79.8	-2.6	-1.9	0.0
Macao, China	8.0	5.8	6.1				8.0	8.0	8.0	0.0	0.0	-0.4
Mongolia		9.5	15.0		14.3	15.5		1 076.7	1 357.6		2.6	7.3
Republic of Korea	8.6	4.0	2.2	7.0	1.5	1.3	707.8	1 131.0	1 126.5	6.0	0.2	1.6
South-East Asia	**7.4**	**5.6**										
Brunei Darussalam							1.8	1.7	1.2	-0.5	-2.1	-0.7
Cambodia		5.5	2.9				426.3	3 840.8	4 033.0	80.1	0.9	-0.6
Indonesia	7.8	5.4	4.3	18.8	6.0	5.8	1 842.8	8 421.8	9 386.6	35.7	0.8	7.0
Lao PDR	35.6	7.6	4.3				707.7	7 887.6		101.4	0.5	
Malaysia	2.6	3.2	1.7		3.0	3.0	2.7	3.8	3.1	4.0	-1.5	0.9
Myanmar	17.6	5.0	1.5		12.0	10.0	6.3	6.5		0.3	-1.4	
Philippines	12.7	4.6	3.2	14.0	4.5	3.5	24.3	44.2	42.2	8.2	0.2	-2.5
Singapore	3.5	5.3	4.5	4.3	0.2	0.2	1.8	1.7	1.2	-0.5	-2.1	-0.6
Thailand	5.9	3.8	3.0		3.3	2.8	25.6	40.1	31.1	5.7	-2.1	1.9
Timor-Leste		13.5	11.8									
Viet Nam		18.7	9.1		15.0		6 482.8	14 167.8	20 828.0	11.9	3.1	1.6
South and South-West Asia	**23.4**	**9.7**										
Afghanistan		5.7	6.8				490.0	47.4	50.9	-9.0	-0.2	8.9
Bangladesh	6.1	10.7	8.7	9.8	5.0	5.0	34.6	52.1	81.9	5.1	3.4	10.4
Bhutan	10.0	8.8	10.9				17.5	44.9	53.4	15.7	0.2	14.5
India	9.0	8.9	9.3	10.0	6.0	9.0	17.5	44.9	53.4	15.7	0.2	14.5
Iran (Islamic Rep. of)	7.6	20.6	27.3				68.1	1 764.8	12 175.5	249.1	48.1	14.7
Maldives	3.6	14.8	11.3		16.0	16.0	9.6	11.8	15.4	2.3	0.9	5.2
Nepal	8.2	9.5	9.5	11.0	7.0	8.0	29.4	71.1	85.2	14.2	0.3	15.1
Pakistan	9.1	11.9	9.7	10.0	12.0	9.5	21.7	53.6	93.4	14.7	5.9	8.2
Sri Lanka	21.5	6.7	6.8	15.0	15.0		40.1	77.0	127.6	9.2	4.7	15.4
Turkey	60.3	6.5	8.9	45.0	17.0	13.5	0.0	0.6	1.8	2 386.7	14.0	7.2
North and Central Asia		**8.5**										
Armenia		7.7	2.6					539.5	401.8		-3.1	7.9
Azerbaijan		7.8	1.1		5.3	5.0		0.9	0.8		-1.0	-0.5
Georgia		8.5	-0.9		6.8	5.3		2.0	1.7		-1.0	-2.1
Kazakhstan		8.3	5.1		7.5	5.5		142.1	149.1		0.4	1.7
Kyrgyzstan		16.5	2.7					47.7	47.0		-0.4	1.9
Russian Federation		8.4	5.1		8.0	8.3		28.1	30.8		0.8	5.0
Tajikistan		12.4	5.8		23.8	18.0		2.1	4.7		11.1	2.8
Turkmenistan								5 200.0				
Uzbekistan								236.6				
Pacific	**7.1**	**3.6**										
American Samoa												
Australia	7.3	3.4	1.8	15.2	4.7	3.7	1.3	1.7	1.0	3.5	-3.7	-0.4
Cook Islands												
Fiji	8.2	8.7	4.3		0.5	0.5	1.5	2.1	1.8	4.4	-1.0	-0.2
French Polynesia												
Guam												
Kiribati							1.3	1.7	1.0	3.5	-3.7	-0.4
Marshall Islands												
Micronesia (F.S.)							1.0	1.0	1.0	0.0	0.0	0.0
Nauru												
New Caledonia												
New Zealand	6.1	4.4	0.9	13.3	2.5	2.5	1.7	2.2	1.2	3.1	-3.7	-2.5
Niue												
Northern Mariana Islands												
Palau												
Papua New Guinea	7.0	8.4	2.2	9.3	7.8	6.8	1.0	2.8	2.1	19.1	-0.2	-12.1
Samoa	15.2	5.2	2.0				2.3	3.3	2.3	4.2	-2.4	-1.1
Solomon Islands	8.7	7.3	2.6				2.5	5.1	7.4	10.1	5.8	-3.7
Tonga	9.7	6.3	1.2				1.3	1.8	1.7	3.7	0.8	-0.5
Tuvalu												
Vanuatu	4.8	0.9	1.4				117.1	137.6	92.6	1.8	-3.0	3.5
Asia and the Pacific	**7.3**	**4.6**										
Developed countries	3.5	0.5										
Developing countries	14.1	7.0										
LLDC		8.4										
LDC	8.5	8.3										
ASEAN	7.4	5.6										
ECO	39.8	10.5										
SAARC	9.0	9.3										
Central Asia		8.7										
Pacific island dev. econ.												
Low income econ.		8.7										
Lower middle income econ.	9.4	8.3										
Upper middle income econ.		6.8										
High income econ.	4.0	1.1										
Africa	**15.5**	**8.8**										
Europe	**11.2**	**3.1**										
Latin America and Carib.	**1 526.5**	**6.7**										
North America	**5.3**	**3.1**										
World	**30.4**	**4.5**	**3.6**									

G.4. Employment

The Asian and Pacific labour market faced varied employment challenges in 2012. Employment growth decelerated and unemployment among young people remained high. Low job quality persisted. Poor working conditions were pervasive in developing economies in the region, characterized by widespread vulnerability and working poverty. In the context of a fragile global economic recovery, creating more productive jobs, and opportunities for women in particular, is critical throughout the region.

Employment growth in Asia and the Pacific was weak in 2012 and lagged behind pre-crisis trends.

In 2012, employment in the region expanded by only 1.2 per cent, which was notably slower than its annual average increase of 1.6 per cent during the period before the global financial crisis (2002-2007). This trend was heavily influenced by weak employment growth of 0.5 per cent in East and North-East Asia. By contrast, employment growth was stronger, at 2 per cent, in South and South-West Asia. In Afghanistan and Timor-Leste, employment was estimated to increase by more than 4 per cent, driven partly by rapid population growth.

Despite weak overall employment growth, the Asian and Pacific region remained home to nearly 2 billion workers, or about two thirds of the global workforce. Moreover, the three developing economies of China (775.8 million), India (473.1 million) and Indonesia (113.7 million) collectively accounted for nearly 7 out of 10 workers in the region.

Throughout the region, demographic and population pressures highlight the massive policy challenge of fostering strong economic growth that can create jobs of a sufficient quality and opportunities for women in particular. In Asia and the Pacific, the employment-population ratio was 62.1 per cent, but it was significantly lower for women (48.0 per cent) than for men (76.0 per cent). The largest male-female gap was in South and South-West Asia (47.9 percentage points), while the lowest gaps were in the Pacific (11.9 percentage points) and East and North-East Asia (12.3 percentage points). Subregional figures, however, mask significant variations between countries. In East and North-East Asia, for instance, the gender gap was 10.9 percentage points in China but 21.0 percentage points in the Republic of Korea.

Industry and services have become the predominant sectors of employment.

During the past two decades, the concentration of jobs in the region has shifted rapidly from agriculture to industry and services. Together, industry and services employed more than three fifths of all workers in the region in 2012. Services alone accounted for 36.9 per cent of total employment in Asia and the Pacific, up from only 25.5 per cent in 1991. The services sector employed about 70 per cent or more of the workforce in some advanced economies, such as Australia, Japan, New Zealand, the Republic of Korea and Singapore as well as Hong Kong, China and Macao, China. However, in 2012, the overall percentage of service jobs in the region still significantly trailed other world regions, such as Latin America and the Caribbean (62.6 per cent) and North America (80.2 per cent). The industrial sector has absorbed a growing share of workers, albeit at a slower pace than services, and accounted for one quarter of employment in the region in 2012. Specific countries where more than one quarter of the workforce held an industrial job include China, the Islamic Republic of Iran, Japan, Malaysia, the Russian Federation and Turkey.

Despite the significant decline of jobs in agriculture, where productivity and earnings are commonly lower, the sector still employed 38.3 per cent of the region's workers in 2012 compared to 53.6 per cent in 1991. The share of agricultural employment was considerably higher in least developed countries (60.4 per cent), where notable disparities persisted between women (78.9 per cent) and men (47.0 per cent).

Poor job quality remains pervasive in developing economies in the Asian and the Pacific region.

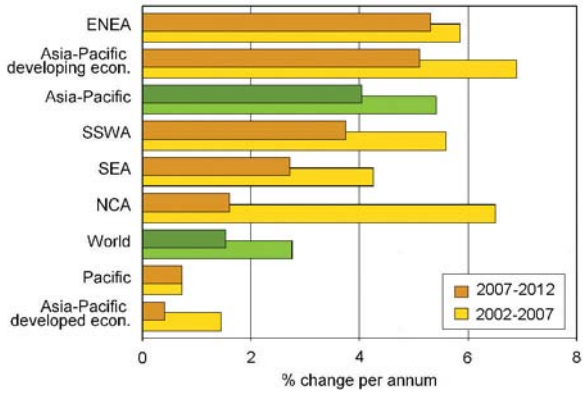
Own-account workers and contributing family workers are often vulnerable due to limited job security and protection. Nearly three in five workers (or approximately 1.1 billion people) in developing economies in Asia and the Pacific were classified as own-account or contributing family workers in 2012, and the region accounted for more than 70 per cent of the world's total. In South and South-West Asia the vulnerable employment rate was 73.7 per cent and exceeded the comparable share in Africa (71.1 per cent). Women are significantly more likely to be employed as own-account or contributing family workers than are men, with the gender gap in the vulnerable employment rate as high as 6.3 percentage points in East and North-East Asia, 6.8 percentage points in South-East Asia, and 7.7 percentage points in South and South-West Asia.

However, some progress has taken place in the past two decades. While the overall share of own-account workers has fluctuated only slightly, the share of contributing family workers in developing economies in the region has fallen by 10.9 percentage points with a concomitant increase of 9.6 percentage points in the share of employees. Moreover, the positive change in the proportion of employees has benefited women in particular. Outside of agriculture, the ratio of women to men in wage employment increased from 47.5 per cent in 1992 to 55.1 per cent in 2012.

Poor job quality is also reflected in the prevalence of low earnings. In this regard, developing economies in the region have made remarkable progress as the working poverty rate at $2 per day at 2005 PPP has declined by 43.4 percentage points since 1991. Nevertheless, in 2012, 612 million workers (32.0 per cent of total employment) still earned too little to lift themselves and their families above the $2 per day poverty line. There were wide subregional variances, which ranged from 6.6 per cent in North and Central Asia, to 32.3 per cent in South-East Asia, to 57.2 per cent in South and South-West Asia.

Boosting labour productivity is critical for improving working conditions and living standards. Since the onset of the global financial crisis, labour productivity growth has decelerated or stagnated across the region (see figure G.4-1). Comparing the five-year period before and after 2007, annual average productivity growth decreased from 5.4 per cent to 4.0 per cent in Asia and the Pacific. By subregion, the largest decline took place in North and Central Asia (4.9 percentage points), followed by South and South-West Asia (1.8 percentage points).

Figure G.4-1
Labour productivity growth rate, Asia and the Pacific, 2002-2007 and 2007-2012



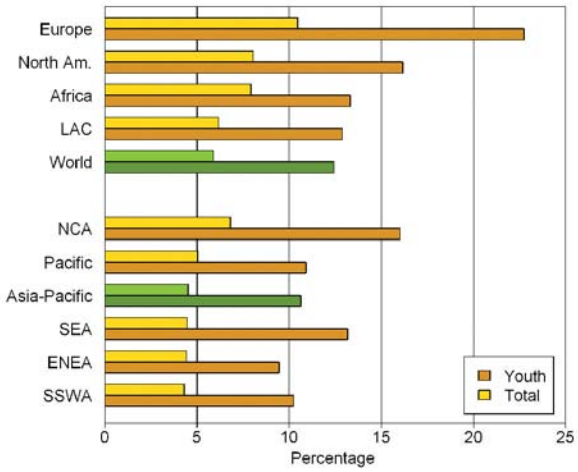
Despite the lower overall unemployment rate in Asia and the Pacific, young people face an alarming jobs deficit.

In 2012, the unemployment rate in the region remained low overall at 4.5 per cent, with marginal differences between women and men. The rate was considerably lower than the global average of 5.9 per cent and rates in other regions such as Africa (7.9 per cent), Europe (10.5 per cent) and North America (8.0 per cent). By subregion, unemployment ranged from 4.3 per cent in South and South-West Asia to 6.8 per cent in North and Central Asia.

By contrast, unemployment among young people aged 15-24 years remained a prominent challenge throughout the region (see figure G.4-2). This is due to various factors, such as the mismatch between education systems, and youth aspirations and employers' requirements, as well as limited

access to business finance. In 2012, the youth unemployment rate in the Asian and Pacific region was 10.6 per cent, more than double the total unemployment rate, and it remained higher than the pre-global financial crisis level of 10.2 per cent in 2007. By subregion, the share of unemployed young people in the labour force was as high as 13.2 per cent in South-East Asia and 16.0 per cent in North and Central Asia. Particular countries where the youth unemployment rate was comparatively elevated include Armenia, Georgia, Indonesia, the Islamic Republic of Iran, New Zealand, the Philippines, Sri Lanka and Turkey.

Figure G.4-2
Total and youth unemployment rates, world regions and Asian and Pacific subregions, 2012 (percentage)



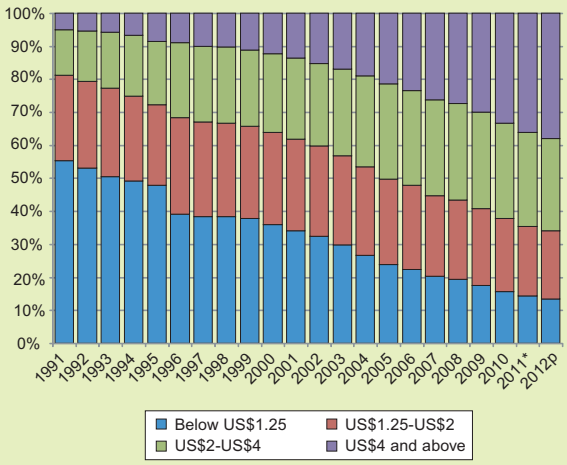
Box G.4-1
New International Labour Organization estimates of employment across economic classes in the developing world

Building on earlier work by the International Labour Organization (ILO) to produce global and regional estimates of the working poor, a new methodology has been developed to produce country-level estimates and projections of employment across five economic classes. This has facilitated the production of the first ever global and regional estimates of workers across economic classes, providing new insights into the evolution of employment in the developing world. The aim of the work is to enhance the body of evidence on trends in employment quality and income distribution in the developing world – a desirable outcome given the relative dearth of information on these issues in comparison with indicators on the quantity of employment, such as labour force participation and unemployment rates.

Kapsos and Bourmpoula define the developing world's middle class as workers living with their families on between $4 and $13 PPP while workers living above $13 are considered either middle class or upper-middle class based on a developed world definition. Growth in employment rates of the middle class in the developing world can provide substantial benefits to workers and their families, with evidence suggesting that the developing world's middle class is able to invest more in health and education and therefore live considerably healthier and more productive lives than the poor and near-poor classes. This, in turn, can benefit societies at large through a virtuous circle of higher productivity employment and more rapid development.

The econometric model developed in the paper utilizes available national household survey-based estimates of the distribution of employment by economic class, augmented by a larger set of estimates of the total population distribution by class together with key labour market, macroeconomic and demographic indicators. The output of the model is a complete panel of national estimates and projections of employment by economic class for 142 developing countries, which serves as the basis for the production of regional aggregates.

Employment by economic class, Asia and the Pacific, 1991-2012 (percentage)



Note: "p" indicates projection. "*" indicates preliminary estimates.

On the basis of this new data set, Huynh and Kapsos have analysed trends in employment across different economic classes in Asia and the Pacific. They have found that, over the past two decades, and particularly since the start of the new millennium, the Asian and

Pacific region has undergone a dramatic shift in the distribution of workers across economic classes (see figure). In 1991, about 55 per cent of the region's workers were living in extreme poverty, with a further 25 per cent living in moderate poverty and nearly 14 per cent in the "near poor" category. More than 80 per cent of the region's workforce was poor, and only 5 per cent of the workforce was living with their families on more than $4 per person per day (in the middle class and above category).

As of 2012, the share of extreme working poor had been slashed to about 13 per cent while the share of moderate working poor declined to just over 20 per cent, for a total of 34 per cent of the workforce living in poverty – a remarkable decline of 46 percentage points over two decades. Over this period, however, the share of near poor rose to about 28 per cent of the workforce. This increase in workers above but near the poverty line is not surprising given that many workers have escaped poverty but have not increased their productivity to an extent great enough to join the middle class. Yet, many workers are now productive enough to have a middle-class standard of living – nearly 38 per cent of the region's workforce was middle class or above in 2012, an increase of 33 percentage points since 1991. Moreover, in every year since 1998, the largest growth in absolute employment in Asia and the Pacific has been middle-class employment. Most new jobs in the region are middle-class jobs, which is a remarkable development given the extremely small base from which the region's middle class has grown.

Sources: International Labour Organization, *Global Employment Trends 2013: Recovering from a Second Jobs Dip* (Geneva, 2013); P. Huynh and S. Kapsos, *Economic Class and Labour Market Inclusion: Poor and Middle Class Workers in Developing Asia* (Bangkok, ILO, 2013); and S. Kapsos and E. Bourmpoula, "Employment and economic class in the developing world", ILO Research Paper, No. 6 (Geneva, ILO, 2013).

Further reading

Cazes, S. and S. Verick, eds. *Perspectives on Labour Economics for Development*. Geneva: International Labour Organization, 2013.

International Labour Organization. *Asia-Pacific Labour Market Update*. Bangkok (April 2013).

_____. *Global Employment Trends 2013: Recovering from a Second Jobs Dip*. Geneva, 2013.

_____. *Guide to the Millennium Development Goals Employment Indicators,* 2nd edition. Geneva, 2013.

Majid, N. How not to count the employed in developing countries. Employment Working Paper, No. 136. Geneva: International Labour Organization, 2013.

Technical notes

Total employment (thousands, percentage change per annum)

All persons above a specified age who, during a specified brief period of either one week or one day, were in paid employment or self-employment. Persons temporarily not at work with or without leave should be considered to be in paid employment provided they had a formal job attachment. For operational purposes, the notion of "some work" may be interpreted as work for at least one hour. **Aggregate calculations:** ILO Employment Trends Unit (thousands); average annual growth of aggregate values (percentage change per annum).

Labour productivity growth rate (percentage change per annum)

The output (measured as value added in 2005 PPP dollars) divided by the total number of employed persons, expressed as the average annual rate of change. **Aggregate calculations:** average annual growth of aggregate values.

Employment-to-population ratio: total, female and male (percentage of total, female or male population aged 15 years or above)

The proportion of the total, female or male working-age population that is employed. For most countries, the working-age population is defined as persons aged 15 years or above, although this may vary slightly from country

to country. **Aggregate calculation:** ILO Employment Trends Unit.

Employment by sector: agriculture, industry and services (percentage of total employment)

Agriculture: Includes employment in agriculture, hunting, forestry and fishing as a percentage of total employment. Industry: Employment in mining and quarrying, manufacturing, construction, electricity and gas, and water as a percentage of total employment. Services: Employment in wholesale and retail trade, restaurants and hotels, transport, storage and communications, finance, insurance, real estate and business services, and community, social and personal services, as a percentage of total employment. **Aggregate calculations:** ILO Employment Trends Unit.

Employment, by status in employment: employees, employers, own account workers and contributing family workers (percentage of total employment)

Employees: All those workers who hold the type of jobs defined as "paid employment jobs," where the incumbents hold explicit (written or oral) or implicit employment contracts that give them a basic remuneration that is not directly dependent upon the revenue of the unit for which they work. **Employers:** Those workers who, working on their own account or with one or a few partners, hold the type of jobs defined as "self-employment jobs" (that is, jobs where the remuneration is directly dependent upon the profits derived from the goods and services produced), and, in this capacity, have engaged on a continuous basis one or more persons to work for them as employee(s). **Own account workers:** Those workers who, working on their own account or with one or more partners, hold the type of jobs defined as "self-employment jobs," and have not engaged on a continuous basis any employees to work for them. Contributing family workers: Those workers who hold "self-employment jobs" as own-account workers in a market-oriented establishment operated by a related person living in the same household. **Aggregate calculations:** ILO Employment Trends Unit.

Unemployment rate: total, female and male (percentage of total, female or male labour force)

Persons, females or males, of working age who, during the reference period, were without work, available for work and seeking work. National definitions and coverage of unemployment may vary. **Aggregate calculations:** ILO Employment Trends Unit.

Youth unemployment rate: total, female and male (percentage of total, female or male labour force aged 15-24 years)

The number of young persons, females or males, aged 15-24 years who, during the reference period, were without work, available for work and seeking work. National definitions and coverage of unemployment may vary. **Aggregate calculations:** ILO Employment Trends Unit.

Share of working poor at $1.25 and $2 per day in 2005 PPP in employment: total, female and male (percentage of total employment, employed females or males)

The national estimates of working poverty or the share of working poor of total, female or male employment is measured as the proportion of total, female or male employed people aged 15 years or above living below the international poverty lines of $1.25 and $2 per day and generated using microdata from national household income and expenditure surveys. Employment status is determined at the individual level. In order to be classified as working poor, a person must be both employed and living in a household with per capita expenditure below the poverty line. For countries and years with poverty estimates available from the World Bank's PovcalNet database but for which no national working poverty estimates are available, working poverty estimates are derived from the ILO econometric model described in chapter 1, section A, part 4 of Key Indicators of the Labour Market (KILM), 7th ed. (available from www.ilo.org/global/publications/ilo-bookstore/order-online/books/WCMS_166348/lang—en/index.htm). It is computed as the number of employed persons living in poor households divided by the total number of

employed multiplied by 100. This definition depends on the availability of household survey data that include poverty and employment variables together.

Sources

Source of status in employment data: ILO, *Key Indicators of the Labour Market (KILM)*, 7th ed. (available from www.ilo.org/empelm/pubs/WCMS_114060/lang—en/index.htm). The ILO Employment Trends Unit has designed and maintains three econometric models that are used in estimating labour market indicators of the countries and years for which no real data exist. Most of the information was gathered from international repositories of labour market data, including the ILO Department of Statistics Yearbook of Labour Statistics (LABORSTA) database, Eurostat, and the Latin America and Caribbean Labour Information System (QUIPUSTAT), with additions from websites of national statistical offices. **Data obtained:** 18 April 2013.

Source of total employment, unemployment rates, youth unemployment rates, employment-population ratio and employment by sector data: ILO, *Key Indicators of the Labour Market (KILM)*, 7th ed. (available from www.ilo.org/empelm/pubs/WCMS_114060/lang—en/index.htm). The ILO Employment Trends Unit has designed and maintains three econometric models that are used in estimating labour market indicators of the countries and years for which no real data exist. Information was derived from a variety of sources, including household and labour force surveys, official estimates and censuses provided by countries to ILO. In a very few cases, information was derived from insurance records and establishment surveys. **Data obtained:** 18 April 2013, except unemployment rates obtained on 10 January 2013 and youth unemployment rates obtained on 20 Feb 2013.

Source of labour productivity data: The Conference Board Total Economy Database (available from www.conference-board.org/data/economydatabase). The output measures in the database represent GDP at market prices, which are obtained from national accounts sources from international organizations and national statistical institutes. United States dollar market prices are converted to PPPs using EKS PPPs[1] unpublished estimates from the Center for International Comparisons at the University of Pennsylvania (available from http://pwt.econ.upenn.edu), which are benchmarked on 2005 PPPs from the International Comparison Program of the World Bank (available from http://siteresources.worldbank.org/ICPEXT/Resources/ICP_2011.html). Some adjustments have been made by the Conference Board. A consistent and comparable measure of employment for all countries does not currently exist. **Data obtained:** 27 February 2013.

Source of share of working poor data: ILO, *Key Indicators of the Labour Market (KILM)*, 7th ed. (available from www.ilo.org/global/publications/ilo-bookstore/order-online/books/WCMS_166348/lang—en/index.htm). The preferred data source is a household survey with variables that can identify both the poverty status of households and provide information on the economic activity of the household's members. Examples include household income and expenditure surveys, living standards measurement surveys with employment modules, or labour force surveys that collect information on household income. More details on concepts or definitions, recommended data sources and interpretation guidelines are available from www.ilo.org/wcmsp5/groups/public/—dgreports/—stat/documents/publication/wcms_183859.pdf, pp. 72 and 73. **Data obtained:** 18 April 2013.

[1] EKS PPPs (developed by O. Elteto, P. Koves and B. Szulc) is used in computing the nth root of the product of all possible Fisher indices between n countries and in obtaining GDP parity. EKS has the properties of base-country invariance and transitivity.

G.4.1 Employment and labour productivity

	Total employment					Labour productivity growth rate		Employment-to-population ratio					
	Thousands			% change per annum		% change per annum		Population aged 15 and above		Females aged 15 and above		Males aged 15 and above	
	2002	2007	2012	02-07	07-12	02-07	07-12	1995	2012	1995	2012	1995	2012
East and North-East Asia	**812 661**	**860 760**	**881 316**	**1.2**	**0.5**	**5.9**	**5.3**	**73.1**	**68.9**	**66.6**	**62.7**	**79.3**	**75.0**
China	710 200	755 574	775 833	1.2	0.5	11.9	8.9	74.9	70.5	69.7	64.9	79.9	75.8
DPR Korea	13 130	13 578	14 124	0.7	0.8			79.3	73.7	73.2	68.7	85.7	79.1
Hong Kong, China	3 259	3 487	3 653	1.4	0.9	4.7	2.0	60.0	57.0	46.1	49.7	74.2	65.4
Japan	62 768	63 637	61 950	0.3	-0.5	1.6	0.2	61.5	56.5	48.4	46.1	75.3	67.5
Macao, China	217	293	348	6.2	3.5			57.7	70.2	46.9	65.8	69.7	75.5
Mongolia	908	1 057	1 224	3.1	3.0			54.0	59.4	49.2	54.1	58.8	65.1
Republic of Korea	22 082	23 134	23 927	0.9	0.7	3.2	2.0	60.4	58.3	47.7	47.9	73.4	68.9
South-East Asia	**246 387**	**270 852**	**298 434**	**1.9**	**2.0**	**4.3**	**2.7**	**68.0**	**67.0**	**56.3**	**55.8**	**80.0**	**78.5**
Brunei Darussalam	156	176	195	2.4	2.1			62.7	63.5	47.1	53.4	76.6	73.5
Cambodia	6 121	7 240	8 170	3.4	2.4	9.2	3.5	80.3	81.4	76.3	77.8	85.1	85.2
Indonesia	93 527	102 434	113 726	1.8	2.1	3.7	3.5	63.5	63.2	47.8	47.2	79.5	79.5
Lao PDR	2 529	2 879	3 285	2.6	2.7			79.0	76.8	78.2	75.4	79.8	78.1
Malaysia	9 980	10 991	12 114	1.9	2.0	3.9	0.7	60.4	58.6	41.2	42.4	79.2	74.5
Myanmar	24 206	26 038	27 903	1.5	1.4			74.0	76.1	70.6	72.6	77.6	79.8
Philippines	29 484	32 966	37 868	2.3	2.8	3.4	1.7	61.0	60.1	44.8	46.4	77.1	74.1
Singapore	1 990	2 381	2 824	3.7	3.5	4.2	0.3	62.9	64.1	48.5	54.4	77.3	73.9
Thailand	35 485	38 359	39 820	1.6	0.8	3.7	1.3	72.9	71.1	64.3	63.4	81.7	79.2
Timor-Leste	255	315	355	4.3	2.4			58.0	54.5	38.1	36.8	77.0	71.6
Viet Nam	43 064	47 504	52 336	2.0	2.0	5.2	3.3	77.7	75.7	73.5	71.7	82.2	79.9
South and South-West Asia	**579 849**	**642 389**	**687 495**	**2.1**	**1.4**	**5.6**	**3.7**	**57.2**	**53.9**	**33.0**	**29.4**	**79.9**	**77.3**
Afghanistan	5 691	6 820	8 191	3.7	3.7			45.4	45.2	12.7	14.0	75.4	74.1
Bangladesh	58 388	65 134	71 976	2.2	2.0	3.4	3.8	71.1	67.5	56.9	54.3	84.6	80.5
Bhutan	256	321	376	4.6	3.2			61.4	69.9	45.4	63.7	77.3	75.2
India	415 065	452 826	473 057	1.8	0.9	6.3	5.1	58.2	53.6	34.0	27.8	80.6	78.0
Iran (Islamic Rep. of)	18 023	21 914	22 980	4.0	1.0	2.7	1.1	38.0	39.3	8.5	13.4	67.8	64.6
Maldives	90	119	141	5.7	3.5			46.2	58.1	22.7	44.5	69.1	72.5
Nepal	12 608	14 362	16 522	2.6	2.8			83.2	81.7	78.9	78.6	87.8	85.0
Pakistan	41 873	52 276	59 972	4.5	2.8	1.8	0.3	46.5	50.7	10.8	20.8	80.0	79.9
Sri Lanka	7 264	8 048	8 341	2.1	0.7	4.8	5.2	48.7	52.3	29.1	32.2	68.4	73.5
Turkey	20 329	21 380	25 420	1.0	3.5	7.5	-0.2	50.4	45.8	28.9	26.4	72.2	65.7
North and Central Asia	**94 870**	**102 226**	**105 961**	**1.5**	**0.7**	**6.5**	**1.6**	**55.5**	**59.4**	**48.1**	**52.5**	**64.1**	**67.4**
Armenia	960	1 010	1 040	1.0	0.6	13.2	-0.1	47.3	42.0	40.3	33.6	55.4	52.3
Azerbaijan	3 571	4 045	4 593	2.5	2.6	19.7	4.4	58.9	61.9	51.9	58.3	66.6	65.8
Georgia	2 050	2 005	1 995	-0.4	-0.1	11.3	4.1	56.9	55.5	51.2	48.8	63.5	63.5
Kazakhstan	7 009	7 631	8 324	1.7	1.8	6.9	3.0	61.8	67.9	54.4	62.5	70.1	74.0
Kyrgyzstan	1 868	2 152	2 358	2.9	1.8	1.4	1.7	59.2	61.7	51.4	51.0	67.5	73.0
Russian Federation	66 753	71 328	71 788	1.3	0.1	6.7	1.8	54.9	59.6	47.9	53.4	63.1	67.0
Tajikistan	2 169	2 362	2 672	1.7	2.5	5.3	6.5	58.6	59.1	51.1	51.6	66.2	67.2
Turkmenistan	1 631	1 807	2 029	2.1	2.3	6.1	8.2	52.9	55.0	41.7	42.1	64.7	68.6
Uzbekistan	8 659	9 767	11 044	2.4	2.5	4.1	5.6	52.1	54.9	41.4	43.0	63.3	67.2
Pacific	**14 073**	**16 066**	**17 447**	**2.7**	**1.7**	**0.7**	**0.7**	**59.9**	**63.5**	**51.6**	**57.6**	**68.3**	**69.5**
American Samoa													
Australia	9 290	10 636	11 534	2.7	1.6	0.8	0.7	58.2	62.1	49.3	55.9	67.5	68.4
Cook Islands													
Fiji	305	332	355	1.7	1.3			55.7	56.9	34.9	37.1	76.1	76.5
French Polynesia													
Guam													
Kiribati													
Marshall Islands													
Micronesia (F.S.)													
Nauru													
New Caledonia													
New Zealand	1 930	2 191	2 250	2.6	0.5	0.5	0.1	60.1	63.3	51.6	57.6	69.1	69.3
Niue													
Northern Mariana Islands													
Palau													
Papua New Guinea	2 366	2 712	3 091	2.8	2.7			67.8	69.9	66.7	68.1	68.9	71.7
Samoa													
Solomon Islands	162	191	223	3.3	3.1			63.2	64.8	50.9	51.6	74.8	77.3
Tonga													
Tuvalu													
Vanuatu													
Asia and the Pacific	**1 747 840**	**1 892 294**	**1 990 653**	**1.6**	**1.0**	**5.4**	**4.0**	**65.4**	**62.1**	**51.9**	**48.0**	**78.6**	**76.0**
Developed countries	73 987	76 464	75 749	0.7	-0.2	1.5	0.4	61.1	57.5	48.6	47.8	74.2	67.7
Developing countries	1 673 853	1 815 830	1 914 904	1.6	1.1	6.9	5.1	65.7	62.3	52.1	48.0	78.8	76.3
LLDC	48 319	54 339	61 804	2.4	2.6	7.8	3.3	61.3	62.2	50.3	51.2	72.9	73.5
LDC	110 062	122 865	136 894	2.2	2.2	5.4	3.9	71.3	69.3	59.7	58.3	82.5	80.4
ASEAN	246 147	270 548	298 100	1.9	2.0	4.3	2.7	68.1	67.0	56.4	55.9	80.1	78.5
ECO	111 043	130 121	147 529	3.2	2.5	3.8	0.8	48.0	48.9	22.0	25.4	73.7	72.3
SAARC	541 497	599 095	639 164	2.0	1.3	6.2	4.8	58.4	55.0	34.3	30.4	80.8	78.5
Central Asia	28 117	30 898	34 163	1.9	2.0	8.8	3.4	57.2	59.1	48.7	50.5	66.4	68.4
Pacific island dev. econ.													
Low income econ.	124 038	137 255	151 818	2.0	2.0	5.6	4.0	71.6	69.3	60.7	58.7	82.4	80.0
Lower middle income econ.	648 945	715 957	768 882	2.0	1.4	5.6	4.5	59.1	56.2	37.4	33.7	79.9	78.0
Upper middle income econ.	873 166	933 147	963 243	1.3	0.6	8.2	6.1	70.5	67.2	63.2	59.8	77.6	74.4
High income econ.	101 691	105 935	106 710	0.8	0.1	2.0	0.9	60.9	57.9	48.3	48.1	74.1	68.1
Africa	**289 437**	**337 555**	**386 301**	**3.1**	**2.7**	**2.6**	**2.0**	**58.9**	**60.3**	**46.7**	**50.2**	**71.3**	**70.5**
Europe	**248 076**	**263 750**	**260 193**	**1.2**	**-0.3**	**1.5**	**0.2**	**51.0**	**51.6**	**41.9**	**45.4**	**60.8**	**58.2**
Latin America and Carib.	**216 903**	**246 105**	**272 923**	**2.6**	**2.1**	**2.1**	**1.0**	**58.2**	**62.2**	**40.9**	**49.6**	**76.2**	**75.3**
North America	**156 435**	**166 644**	**164 185**	**1.3**	**-0.3**	**1.4**	**0.9**	**61.6**	**58.3**	**54.3**	**53.1**	**69.4**	**63.8**
World	**2 696 791**	**2 952 960**	**3 129 216**	**1.8**	**1.2**	**2.8**	**1.5**	**61.9**	**60.3**	**48.9**	**47.9**	**74.9**	**72.7**

G.4.2 Employment by sector and status

	Agriculture employment		Industry employment		Services employment		Employment by status							
							Employees		Employers		Own account workers		Contributing family workers	
	% of total employment						% of total employment							
	1995	2010	1995	2010	1995	2010	1995	2010	1995	2010	1995	2010	1995	2010
East and North-East Asia	**46.3**	**33.0**	**25.0**	**28.8**	**28.7**	**38.1**	**37.3**	**49.7**	**1.8**	**1.8**	**30.7**	**30.0**	**30.2**	**18.6**
China	52.2	36.7	23.0	28.7	24.8	34.6								
DPR Korea														
Hong Kong, China	0.6		27.0		72.4		89.2	90.2	5.4	3.5	4.8	6.0	0.6	0.4
Japan	5.7	3.7	33.6	25.3	60.4	69.7	81.5	87.3	3.0		9.2		6.1	3.0
Macao, China	0.2		32.1		67.6			92.2		3.1		4.1		0.6
Mongolia	46.1		17.9		35.9									
Republic of Korea	12.4	6.6	33.3	17.0	54.3	76.4	62.6	71.2			27.9		9.6	5.3
South-East Asia	**52.1**	**41.5**	**16.2**	**18.6**	**31.7**	**39.9**	**31.0**	**35.9**	**2.5**	**2.3**	**37.7**	**39.8**	**28.8**	**22.0**
Brunei Darussalam														
Cambodia		54.2		16.2		29.6		29.8		0.2		50.4		19.4
Indonesia	44.0	38.3	18.4	19.3	37.6	42.3		35.4		3.0		44.2		17.3
Lao PDR	85.4		3.5		11.1		9.7		0.2		56.6		33.5	
Malaysia	20.0	13.3	32.3	27.6	47.7	59.2	72.6	74.3	2.5	3.9	18.3	17.2	6.6	4.5
Myanmar														
Philippines	44.1	33.2	15.6	15.0	40.3	51.8		54.4		3.9		30.2		11.5
Singapore	0.2		31.0		68.8			85.5		5.3		8.6		0.6
Thailand	52.0	38.2	19.8	20.6	28.3	41.0	35.7	44.4	2.9	2.7	30.2	31.8	31.2	21.0
Timor-Leste														
Viet Nam														
South and South-West Asia	**59.2**	**49.4**	**16.1**	**21.2**	**24.7**	**29.4**	**17.4**	**22.8**	**1.4**	**1.4**	**58.7**	**57.4**	**22.6**	**18.4**
Afghanistan														
Bangladesh														
Bhutan		59.5		6.7		33.8		31.1		0.1		27.3		41.5
India		51.1		22.4		26.6		18.1		1.1		63.9		16.9
Iran (Islamic Rep. of)														
Maldives	22.2		23.9		50.4		36.6		4.8		47.6		6.3	
Nepal														
Pakistan	46.8		18.5		34.6		34.1		1.0		42.3		22.6	
Sri Lanka	37.3	32.7	23.4	24.2	33.6	40.4	59.8	55.5	2.5	2.6	28.3	31.5	9.4	10.4
Turkey	43.4	23.7	22.3	26.2	34.3	50.1	41.5	60.9		5.3	30.0	20.1	28.5	13.6
North and Central Asia	**21.3**	**19.3**	**28.4**	**24.3**	**50.4**	**56.4**	**82.0**	**81.6**	**0.6**	**1.5**	**12.9**	**14.7**	**4.5**	**2.2**
Armenia														
Azerbaijan	30.8	38.2	17.8	13.7	35.8	48.1								
Georgia														
Kazakhstan		28.3		18.7		53.0		66.7		2.0		30.2		0.8
Kyrgyzstan	47.2		16.7		36.1									
Russian Federation	15.7		34.0		50.0		93.2		0.4		1.9		0.2	
Tajikistan														
Turkmenistan														
Uzbekistan	41.2		19.1		34.9									
Pacific	**17.3**	**17.1**	**20.0**	**17.9**	**62.7**	**65.0**	**73.3**	**73.9**	**4.2**	**2.6**	**14.8**	**14.8**	**7.7**	**8.7**
American Samoa														
Australia	5.0		22.8		72.2		84.6	88.4	4.4		10.1		0.9	0.3
Cook Islands														
Fiji														
French Polynesia														
Guam														
Kiribati														
Marshall Islands														
Micronesia (F.S.)														
Nauru														
New Caledonia														
New Zealand	9.7		25.1		65.2		78.8	83.8	8.2		11.7		1.1	1.1
Niue														
Northern Mariana Islands	1.2		15.5		83.7									
Palau														
Papua New Guinea														
Samoa														
Solomon Islands														
Tonga														
Tuvalu														
Vanuatu														
Asia and the Pacific	**49.5**	**39.0**	**21.2**	**24.4**	**29.4**	**36.6**	**33.0**	**40.4**	**1.7**	**1.7**	**39.3**	**39.8**	**26.0**	**18.1**
Developed countries	5.8	4.1	32.3	25.5	61.9	70.5	81.9	87.2	3.3	2.7	9.3	7.5	5.5	2.6
Developing countries	51.7	40.4	20.6	24.4	27.7	35.2	30.6	38.5	1.6	1.7	40.8	41.1	27.0	18.7
LLDC	56.1	50.8	13.8	15.3	30.1	33.9	33.2	42.6	1.3	2.0	48.9	44.2	16.5	11.1
LDC	68.6	59.8	9.7	12.4	21.7	27.8	12.6	16.4	0.6	0.7	54.0	52.7	32.8	30.2
ASEAN	52.1	41.5	16.2	18.7	31.7	39.9	31.0	35.9	2.5	2.3	37.7	39.8	28.8	22.0
ECO	43.0	36.6	20.0	21.8	37.0	41.6	37.2	47.6	3.4	2.4	37.4	32.4	21.9	17.6
SAARC	60.8	51.4	15.5	20.7	23.7	27.9	15.9	20.3	0.9	1.1	60.8	59.7	22.4	18.9
Central Asia	42.8	37.3	17.2	18.9	40.0	43.8	43.5	57.5	0.8	1.5	40.3	34.3	15.3	6.7
Pacific island dev. econ.														
Low income econ.	61.0	54.6	17.4	17.2	21.6	28.2	17.5	21.1	0.9	0.9	50.7	50.1	30.9	27.9
Lower middle income econ.	57.2	47.5	16.2	21.1	26.7	31.4	20.7	25.3	1.4	1.5	54.9	54.8	23.0	18.4
Upper middle income econ.	47.9	33.8	23.7	28.1	28.4	38.1	38.1	50.3	1.7	1.8	30.3	29.8	29.8	18.0
High income econ.	6.9	4.4	32.3	24.8	60.8	70.8	77.4	83.3	4.0	3.5	12.7	10.2	6.0	3.0
Africa	**61.7**	**56.2**	**10.0**	**11.2**	**28.3**	**32.6**	**21.8**	**25.6**	**2.6**	**2.8**	**40.8**	**45.9**	**34.8**	**25.8**
Europe	**12.4**	**6.7**	**30.2**	**25.3**	**57.3**	**68.0**	**81.1**	**82.4**	**4.5**	**4.1**	**11.3**	**11.8**	**3.1**	**1.6**
Latin America and Carib.	**23.2**	**16.2**	**21.3**	**21.8**	**55.5**	**62.0**	**59.0**	**63.4**	**4.3**	**4.6**	**28.4**	**26.2**	**8.3**	**5.8**
North America	**3.0**	**1.7**	**24.1**	**17.2**	**72.8**	**81.1**	**87.2**	**89.1**	**4.0**	**3.2**	**8.7**	**7.6**	**0.2**	**0.1**
World	**41.8**	**33.9**	**21.2**	**22.3**	**36.9**	**43.8**	**42.4**	**47.4**	**2.4**	**2.4**	**33.7**	**34.8**	**21.5**	**15.3**

G.4.3 Unemployment rates

	Unemployment rate						Youth unemployment rate					
	Total % of labour force		Female % of female labour force		Male % of male labour force		% of labour force aged 15-24		% of female labour force aged 15-24		% of male labour force aged 15-24	
	1995	2010	1995	2010	1995	2010	1995	2010	1995	2010	1995	2010
East and North-East Asia	**4.3**	**4.2**	**3.7**	**3.6**	**4.8**	**4.8**	**8.6**	**8.8**	**7.0**	**7.2**	**10.1**	**10.4**
China	2.9											
DPR Korea												
Hong Kong, China	3.2	4.3	2.9	3.5	3.4	5.0	6.9	12.1	5.9	10.3	7.7	14.1
Japan	3.2	5.0	3.3	4.5	3.1	5.4	6.1	9.2	6.1	8.0	6.1	10.4
Macao, China	3.6	2.8	3.0	2.1	4.1	3.6		5.6		3.5		7.7
Mongolia												
Republic of Korea	2.1	3.7	1.7	3.3	2.3	4.0	6.3	9.8	5.3	9.0	7.8	11.2
South-East Asia	**3.8**	**4.9**	**4.1**	**5.3**	**3.5**	**4.5**	**9.5**	**13.9**	**10.0**	**14.7**	**9.2**	**13.2**
Brunei Darussalam												
Cambodia		0.4		0.3		0.4						
Indonesia		7.1										
Lao PDR	2.6		2.6		2.6		5.0		3.9		6.4	
Malaysia	3.1	3.4	3.8	3.6	2.8	3.3		11.3				
Myanmar												
Philippines	8.4	7.3	9.4		7.7		16.1		19.1		14.4	
Singapore	2.2	3.1	2.1	3.4	2.3	3.0		7.4				
Thailand		1.0		1.0		1.1		3.9		4.2		3.7
Timor-Leste												
Viet Nam												
South and South-West Asia	**4.4**	**4.5**	**4.7**	**5.6**	**4.3**	**4.1**	**9.7**	**10.7**	**9.7**	**11.9**	**9.6**	**10.3**
Afghanistan												
Bangladesh												
Bhutan		3.3		4.0		2.7		9.2		11.0		7.1
India	2.2	3.5	1.7	4.3	2.4	3.3		10.2		11.5		9.8
Iran (Islamic Rep. of)												
Maldives	0.8		1.3		0.6		1.9		2.9		1.4	
Nepal												
Pakistan	5.0		14.0		3.7		8.9		18.1		7.6	
Sri Lanka	12.2	4.9	18.7	7.7	9.0	3.5	35.2	19.4		24.7		16.3
Turkey	7.6	11.9	7.3	13.0	7.8	11.4	15.6	21.7	13.1	23.1	16.9	21.0
North and Central Asia	**9.9**	**8.1**	**9.9**	**7.9**	**9.8**	**8.4**	**18.7**	**17.4**	**19.9**	**17.9**	**17.8**	**17.0**
Armenia												
Azerbaijan		5.6		6.9		4.4		14.9		13.4		17.3
Georgia		16.3		14.5		17.9		36.3				
Kazakhstan	11.0	5.8		6.6		4.9		5.2		5.7		4.8
Kyrgyzstan												
Russian Federation	9.4	7.5	9.2	6.9	9.7	8.0	18.8	17.2	20.0	17.5	17.8	16.9
Tajikistan												
Turkmenistan												
Uzbekistan												
Pacific	**7.3**	**5.0**	**7.1**	**5.2**	**7.5**	**4.8**	**13.1**	**11.0**	**12.9**	**10.9**	**13.2**	**11.0**
American Samoa												
Australia	8.5	5.2	8.1	5.4	8.8	5.1	15.4	11.5	14.8	11.1	15.9	11.9
Cook Islands												
Fiji	5.4											
French Polynesia												
Guam												
Kiribati												
Marshall Islands												
Micronesia (F.S.)												
Nauru												
New Caledonia												
New Zealand	6.5	6.5	6.5	6.8	6.4	6.2	12.3	17.1	12.2	17.4	12.3	16.8
Niue												
Northern Mariana Islands												
Palau												
Papua New Guinea												
Samoa												
Solomon Islands												
Tonga												
Tuvalu												
Vanuatu												
Asia and the Pacific	**4.6**	**4.7**	**4.5**	**4.6**	**4.8**	**4.7**	**9.5**	**10.8**	**8.7**	**10.3**	**10.1**	**11.1**
Developed countries	3.9	5.1	4.0	4.7	3.9	5.3	8.0	10.1	7.9	9.2	8.1	11.1
Developing countries	4.7	4.6	4.5	4.6	4.8	4.6	9.6	10.8	8.8	10.3	10.2	11.1
LLDC	7.5	6.8	8.2	6.8	7.0	6.8	11.9	12.5	11.8	11.3	11.9	13.3
LDC	3.3	4.3	3.2	4.5	3.3	4.1	7.7	8.7	7.2	8.5	8.1	8.8
ASEAN	3.8	4.9	4.1	5.3	3.5	4.5	9.5	13.9	10.0	14.7	9.2	13.2
ECO	7.6	8.6	10.9	11.1	6.6	7.7	14.0	15.0	17.4	18.4	12.9	13.8
SAARC	4.1	3.8	4.4	4.8	3.9	3.5	9.0	9.7	9.1	10.6	8.9	9.3
Central Asia	11.0	9.5	11.7	9.8	10.3	9.2	18.8	17.6	19.9	18.3	18.0	17.0
Pacific island dev. econ.												
Low income econ.	3.4	4.6	3.4	4.7	3.5	4.4	7.9	9.2	7.4	9.0	8.3	9.3
Lower middle income econ.	4.4	4.5	5.0	5.7	4.2	4.0	10.0	11.8	10.9	14.0	9.6	10.9
Upper middle income econ.	5.1	4.8	4.4	4.1	5.6	5.3	9.6	10.2	8.0	8.5	11.1	11.6
High income econ.	3.5	4.7	3.4	4.3	3.5	5.0	7.6	10.1	7.2	9.2	8.0	11.1
Africa	**8.8**	**7.7**	**9.8**	**8.9**	**8.0**	**6.9**	**15.1**	**12.9**	**16.0**	**14.2**	**14.3**	**11.9**
Europe	**10.3**	**9.7**	**11.4**	**9.6**	**9.4**	**9.7**	**20.8**	**20.9**	**21.9**	**20.2**	**19.8**	**21.4**
Latin America and Carib.	**8.2**	**6.7**	**10.0**	**8.2**	**7.1**	**5.7**	**14.4**	**14.0**	**17.8**	**17.4**	**12.3**	**11.8**
North America	**6.1**	**9.5**	**6.0**	**8.5**	**6.1**	**10.4**	**12.6**	**18.2**	**12.0**	**15.6**	**13.1**	**20.6**
World	**6.0**	**6.0**	**6.4**	**6.3**	**5.8**	**5.8**	**11.7**	**12.5**	**11.6**	**12.7**	**11.7**	**12.3**

G.4.4 Working poor

	Share of working poor at US$1.25 per day in 2005 PPP in employment				Share of working poor at US$2 per day in 2005 PPP in employment			
	Total		Female	Male	Total		Female	Male
	% of total employment		% of employed females/males		% of total employment		% of employed females/males	
	Earliest	Latest	Latest	Latest	Earliest	Latest	Latest	Latest
East and North-East Asia	**55.2 (91)**	**5.3 (12)**			**76.7 (91)**	**12.8 (12)**		
China								
DPR Korea		30.7 (05)				60.8 (05)		
Hong Kong, China								
Japan								
Macao, China								
Mongolia	14.3 (95)	11.3 (02)	11.4 (02)	11.1 (02)	36.7 (95)	32.0 (02)	31.7 (02)	32.4 (02)
Republic of Korea								
South-East Asia	**46.8 (91)**	**11.5 (12)**			**70.9 (91)**	**32.3 (12)**		
Brunei Darussalam								
Cambodia	50.5 (94)	25.1 (07)	37.2 (04)	36.8 (04)	82.9 (94)	53.1 (07)	66.2 (04)	65.7 (04)
Indonesia	52.6 (93)	19.8 (05)	28.5 (02)	26.7 (02)	83.8 (93)	52.0 (05)	65.5 (02)	65.0 (02)
Lao PDR	57.1 (92)	31.5 (08)			89.1 (92)	64.0 (08)		
Malaysia	1.4 (92)	0.0 (09)			10.0 (92)	1.9 (09)		
Myanmar		31.1 (05)				60.8 (05)		
Philippines	26.8 (91)	19.0 (06)	15.8 (03)	20.5 (03)	51.7 (91)	40.9 (06)	34.2 (03)	43.7 (03)
Singapore								
Thailand	4.4 (92)	0.0 (04)	0.5 (02)	0.6 (02)	23.2 (92)	10.1 (04)	12.9 (02)	13.8 (02)
Timor-Leste		32.6 (07)	44.6 (01)	48.1 (01)		68.2 (07)	70.7 (01)	74.3 (01)
Viet Nam	66.7 (93)	12.0 (08)	20.8 (06)	19.6 (06)	91.7 (93)	37.3 (08)	48.7 (06)	46.7 (06)
South and South-West Asia	**49.0 (91)**	**22.7 (12)**			**78.1 (91)**	**57.2 (12)**		
Afghanistan		38.0 (05)				73.6 (05)		
Bangladesh	55.9 (92)	50.1 (05)	49.2 (05)	50.2 (05)	89.8 (92)	80.1 (05)	75.9 (05)	80.6 (05)
Bhutan		26.9 (03)	28.7 (03)	25.1 (03)		50.8 (03)	54.0 (03)	47.7 (03)
India	49.1 (94)	39.2 (05)	43.9 (05)	37.5 (05)	83.9 (94)	74.5 (05)	78.3 (05)	73.1 (05)
Iran (Islamic Rep. of)	0.9 (94)	0.9 (05)			5.7 (94)	6.2 (05)		
Maldives	26.1 (98)	1.3 (04)			37.5 (98)	11.2 (04)		
Nepal	63.9 (96)	50.4 (03)	50.2 (03)	50.6 (03)	85.7 (96)	74.1 (03)	74.0 (03)	74.2 (03)
Pakistan	57.4 (91)	19.2 (06)	22.0 (05)	18.7 (05)	83.6 (91)	57.0 (06)	62.0 (05)	55.3 (05)
Sri Lanka	13.2 (91)	5.8 (07)	11.1 (02)	11.9 (02)	46.5 (91)	26.0 (07)	35.3 (02)	36.6 (02)
Turkey	1.2 (94)	1.4 (05)	0.9 (02)	1.1 (02)	7.2 (94)	6.4 (05)	7.0 (02)	6.8 (02)
North and Central Asia	**3.6 (91)**	**2.7 (12)**			**9.3 (91)**	**6.6 (12)**		
Armenia	9.7 (96)	0.7 (08)	4.2 (04)	3.6 (04)	29.9 (96)	9.0 (08)	23.7 (04)	24.2 (04)
Azerbaijan	12.5 (95)	0.7 (08)			34.0 (95)	6.1 (08)		
Georgia		10.7 (08)				26.8 (08)		
Kazakhstan	2.7 (93)	0.0 (07)	1.8 (03)	2.0 (03)	13.2 (93)	1.1 (07)	11.9 (03)	13.5 (03)
Kyrgyzstan	14.8 (93)	1.5 (07)			26.5 (93)	25.5 (07)		
Russian Federation	1.0 (93)	0.0 (08)			6.5 (93)	0.0 (08)		
Tajikistan	39.6 (99)	19.5 (04)	32.4 (03)	33.4 (03)	74.8 (99)	48.3 (04)	64.7 (03)	66.2 (03)
Turkmenistan	47.9 (93)				71.5 (93)			
Uzbekistan		35.3 (03)				66.5 (03)		
Pacific	**7.8 (91)**	**5.5 (12)**			**12.3 (91)**	**10.3 (12)**		
American Samoa								
Australia								
Cook Islands								
Fiji		18.5 (05)				49.7 (05)		
French Polynesia								
Guam								
Kiribati								
Marshall Islands								
Micronesia (F.S.)								
Nauru								
New Caledonia								
New Zealand								
Niue								
Northern Mariana Islands								
Palau								
Papua New Guinea	34.0 (96)				56.3 (96)			
Samoa								
Solomon Islands		21.5 (05)				44.2 (05)		
Tonga								
Tuvalu								
Vanuatu								
Asia and the Pacific	**48.6 (91)**	**12.1 (12)**			**71.6 (91)**	**30.7 (12)**		
Developed countries								
Developing countries	51.1 (91)	12.6 (12)			75.3 (91)	32.0 (12)		
LLDC	33.2 (91)	16.7 (12)			51.8 (91)	37.9 (12)		
LDC	71.0 (91)	29.9 (12)			93.3 (91)	63.7 (12)		
ASEAN	46.8 (91)	11.5 (12)			70.9 (91)	32.3 (12)		
ECO	25.3 (91)	10.6 (12)			41.4 (91)	31.9 (12)		
SAARC	52.5 (91)	24.4 (12)			83.3 (91)	61.3 (12)		
Central Asia	12.4 (91)	8.3 (12)			26.1 (91)	20.5 (12)		
Pacific island dev. econ.								
Low income econ.	67.2 (91)	28.2 (12)			89.4 (91)	60.4 (12)		
Lower middle income econ.	50.4 (91)	20.0 (12)			80.7 (91)	53.3 (12)		
Upper middle income econ.	51.2 (91)	4.6 (12)			72.3 (91)	11.5 (12)		
High income econ.					0.3 (91)	0.0 (12)		
Africa	**47.8 (91)**	**34.4 (12)**			**66.6 (91)**	**56.5 (12)**		
Europe	**0.1 (91)**	**0.0 (12)**			**0.3 (91)**	**0.1 (12)**		
Latin America and Carib.	**8.2 (91)**	**3.5 (12)**			**16.5 (91)**	**7.4 (12)**		
North America								
World	**36.9 (91)**	**12.3 (12)**			**54.4 (91)**	**27.3 (12)**		

G.5. International trade

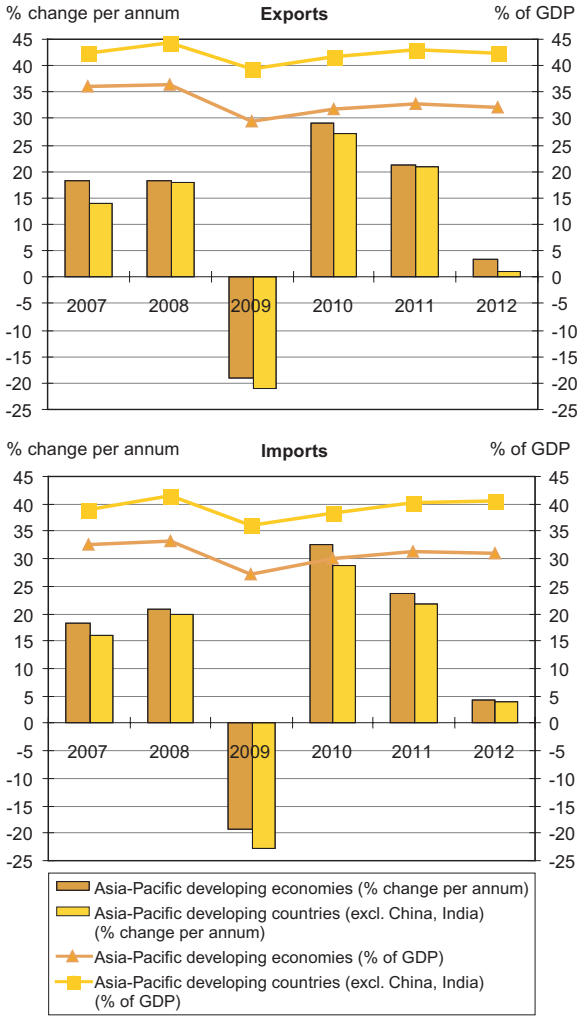
The economic slowdown in developed economies suppressed both global demand and Asian and Pacific trade in 2012, but the Asian and Pacific region still registered a trade growth rate higher than that of overall world trade. The export growth of China and of developing economies in the region continues to be more resilient than that of developed economies and, in addition to domestic demand, the growing intraregional demand should be considered as an important factor in the trade-led growth of the region. However, developments in 2012 reveal that developed economies outside the region remain important markets for Asian and Pacific final goods. The subdued outlook for developed economies continues to raise concerns about the prospects for the economic growth of economies with small domestic markets for which trade remains the major growth engine.

Merchandise trade slowdown is raising concerns about economic growth prospects for the Asian and Pacific region.

The slow growth in developed economies and the uncertainties associated with the European economic crisis continue to suppress global import demand. Asian and Pacific merchandise trade again faced a serious challenge in 2012. The annual growth of merchandise exports in developing economies in the region decreased from 21 per cent in 2011 to a mere 3.3 per cent in 2012 (see figure G.5-1). Excluding China and India, developing economies in the region had export growth of only 1.2 per cent. Imports have also stagnated in developing economies, with the import growth rate dropping from 24 per cent in 2011 to slightly above 4.2 per cent in 2012. For developed economies, exports contracted by 3.4 per cent while imports grew by 4.3 per cent in 2012.

On average, export dependency in developing economies in Asia and the Pacific (excluding the two largest economies, China and India) is just above 40 per cent, with many small economies depending much more on international trade. For example, exports contribute much more than 100 per cent of GDP in Singapore and in Hong Kong, China (which are heavily engaged in re-exports), 88 per cent in Viet Nam, 75 per cent in Malaysia, 60 per cent in Cambodia, and more than 50 per cent in Turkmenistan and Solomon Islands. The recent global and regional trade slowdown adds to existing concerns among small economies that rely heavily on exports as an engine of economic growth.

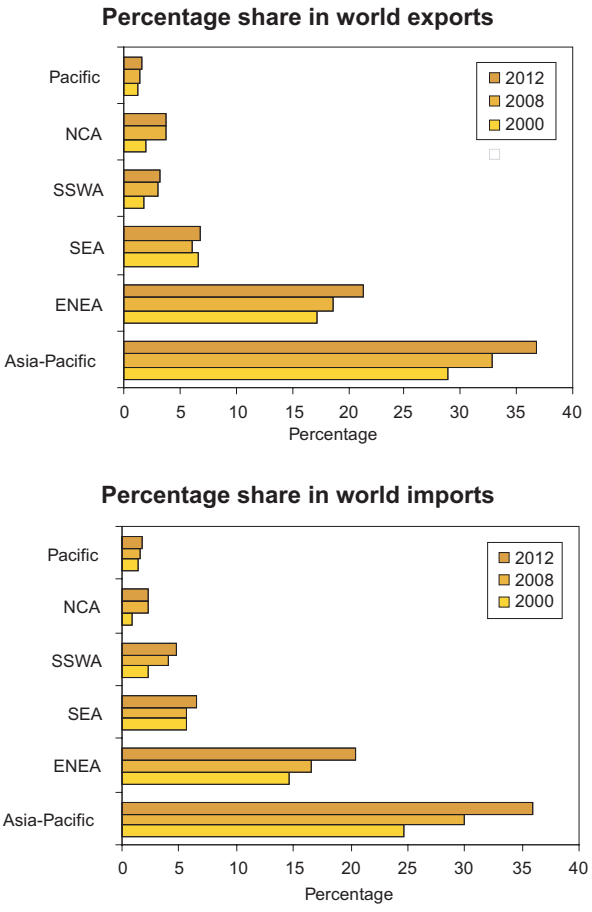
Figure G.5-1
Merchandise trade (annual growth) and trade dependence of developing economies in Asia and the Pacific, 2008 to 2012



Led by East and North-East Asia, the Asian and Pacific region continues to capture an increasing share of world merchandise trade.

Over the past 10 years, Asia and the Pacific has gained a significantly larger share of world merchandise trade. In 2012, the region surpassed Europe to become the world's largest trading region with a share of almost 37 per cent of world exports and 36 per cent of world imports. The region's gains in world trade were driven by the large economies in East and North-East Asia. Since 2004, China has been the largest exporter in the region and it accounted for 11 per cent of world exports in 2012. Japan and the Republic of Korea are the second and third largest exporters, contributing 4 per cent and 3 per cent of world exports, respectively, in 2012. These economies, combined with the rest of East and North-East Asia, accounted for 21 per cent of world exports and imports (see figure G.5-2). South-East Asia's share of world exports and imports was about 7 per cent. North and Central Asia captured approximately 4 per cent of world exports, while this subregion accounted for about 3 per cent of world imports. South and South-West Asia contributed about 3 per cent of world exports and 5 per cent of world imports. The Pacific region, despite including Australia and New Zealand, represents a relatively minor share of regional and global trade. In 2012, the Pacific's contribution to world trade remained less than 2 per cent, with Australia and New Zealand accounting for about 97 per cent of that amount.

Figure G.5-2
Asian and Pacific region's merchandise trade share in global trade, total and by subregion, 2000, 2008 and 2012



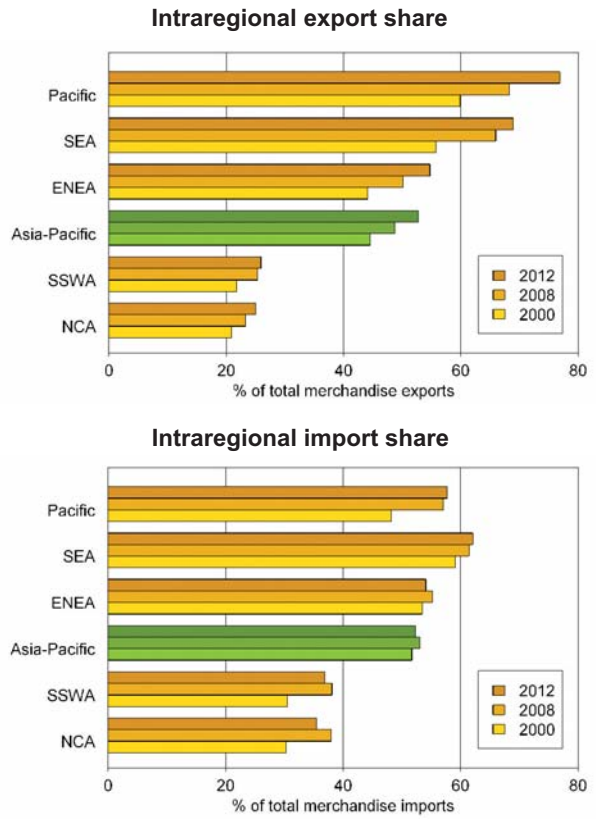
Intraregional merchandise trade in Asia and the Pacific is growing at a faster rate than trade with the rest of the world.

Intraregional trade in Asia and the Pacific has been increasing faster than trade with the rest of the world, especially exports. The share of intraregional exports grew from 45 per cent in 2000 to 53 per cent in 2012. During the same period, total intraregional exports and imports quadrupled, while exports to and imports from the rest of the world increased by just over threefold. The share of intraregional imports remained stable at just over 50 per cent over the same period.

Based on 2012 data, the Pacific, South-East Asia and East and North-East Asia continue to rely heavily on intraregional markets for their exports; their dependence on intraregional exports is higher than 50 per cent (see figure G.5-3). In contrast, about one fourth of exports from South and South-West Asia, and North and Central Asia were directed to Asian and Pacific markets. In 2012, the importance of intraregional sources for imports to the Asian and Pacific subregions ranged from around 35 per cent to just above 62 per cent. The increasing importance of intraregional trade partly reflects the impact of production fragmentation and the related establishment of global and regional value chains, which have contributed to greater regional

integration. In addition, growing intraregional demand has also been supported by the dynamic growth of emerging economies in the region.

Figure G.5-3
Intraregional merchandise trade as a proportion of total merchandise trade in the Asian and Pacific region (percentage), 2000, 2008 and 2012

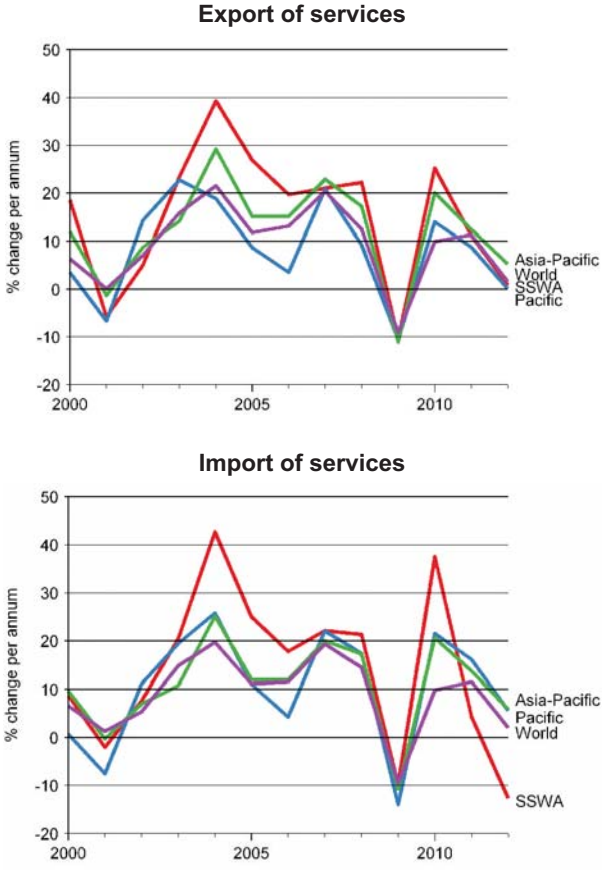


Growth in commercial service trade slowed in 2012.

Globally, in 2012, the export of commercial services grew by only 1.6 per cent and the import of commercial services grew by only 2 per cent. The Asian and the Pacific region registered the highest growth of commercial service exports and imports of all regions, at 5.2 per cent and 5.9 per cent, respectively. This growth was, however, much slower than in 2011, when exports grew at a rate of 12.5 per cent and imports at 13.7 per cent (see figure G.5-4). This slowing down of commercial service exports in 2012 was caused by, among other factors, the overall contraction of import demand in the European Union that year. Despite the slowdown of overall commercial service exports, the Asian and Pacific region increased its share of global exports of several services, such as construction, computer and information services, and personal, cultural and recreational services.

In 2012, the Pacific and South and South-West Asia experienced the lowest growth in commercial service exports (0.1 per cent and 0.8 per cent, respectively) of all Asian and Pacific subregions. Since 2008, the imports of commercial services into South and South-West Asia continued to experience economic uncertainty, and imports contracted by 12.7 per cent in 2012. In contrast, that same year, North and Central Asia recorded the highest growth in commercial service exports and imports of all subregions (see figure G.5-4).

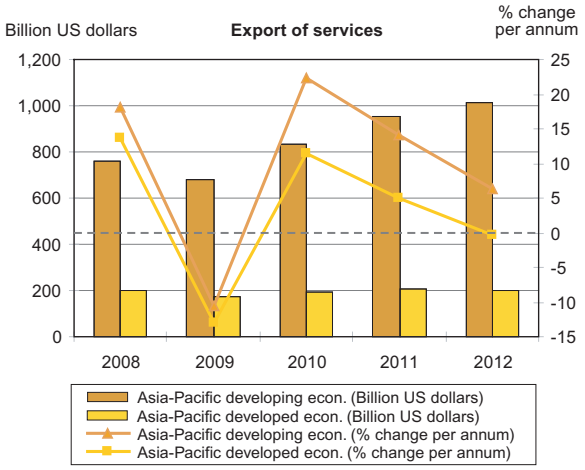
Figure G.5-4
Growth rates of commercial service trade, Asian and Pacific subregions, 2000 to 2012



For commercial service exports, developing economies in the region show greater resilience than developed economies.

While the commercial service export growth of developing economies in the region slowed from 14.2 per cent in 2011 to 6.4 per cent in 2012, developed economies in the region experienced a contraction in 2012 of -0.4 per cent compared with 4.9 per cent growth in 2011. Despite added volatility resulting from global economic uncertainties, commercial service exports from developing economies in Asia and the Pacific recorded an average growth of 7.4 per cent per annum from 2008 to 2012 (see figure G.5-5). In contrast, exports from developed economies in the region, on average, stagnated during the same period. Since the global economic recession began, developing economies in the region have shown more resilient growth in commercial service exports than developed economies. This has been driven mainly by the sectors of computer and information services, communication and travel, as well as a contraction in financial service exports from developed economies.

Figure G.5-5
Export of commercial services and annual growth rates, developing and developed economies in Asia and the Pacific, 2008 to 2012



Box G.5-1
What issues are Pacific island developing economies facing in international trade?

Compared with their Asian counterparts, Pacific island developing economies (PIDEs) are very small. In 2011, merchandise exports in this subregion made up 0.15 per cent of total merchandize exports in the Asian and Pacific region, and the corresponding figure for service exports was 0.23 per cent. Despite their diversity, there are several common factors that prevent these developing economies from reaching their full trading potential.

First, not only are most PIDEs small in terms of population and geography, but they are far from major markets. This means that, in addition to not being able to benefit from specialization in activities associated with economies of scale, they face high transportation costs and their goods spend a long time in transport. For example, Kiribati's nearest market is Hawaii, which is 4,000 km away. Unit costs are high, and small cargo volumes put airline carriers in the position of a monopoly.[a] Service is infrequent and some locations are not served at all. The situation is further exacerbated by the fact that this subregion has a dispersed population scattered across multiple outer islands with infrequent and irregular transportation options. Another hindrance to trade that the developing economies in the Pacific face is their exposure to natural disasters. For example, a 2009 tsunami in Samoa damaged most tourism infrastructure (tourism is the country's major export earner), and the country was hit again three years later by a category 4 cyclone.[b, c] This exposure results in volatility of exports earnings.

Agriculture is an important economic sector of most PIDEs, although the contribution of this sector to the economy is uneven across the subregion.[d] Despite their eligibility for preferential market access in Australia and New Zealand, agricultural exports are significantly hampered by the inability of PIDEs to overcome non-tariff barriers. For example, the rigorous physical quarantine requirement for importing Pacific island taro into Australia drastically reduces its shelf life, resulting in the need for it to be air freighted, and thus reducing its competitiveness.[e] There is also the limited capacity of the developing economies to deal with several sanitary and food safety regulations.[f]

A potential area of comparative advantage is fisheries. However, most PIDEs do not have their own fishing boats, and many resort to flagging foreign vessels in exchange for license fees. Most also do not have sufficient capacity to process or preserve the fish; cold storage is not always available, and the costs of establishing and operating one can be prohibitive. Additionally, while

opportunities for intraregional trade exist with the Melanesian Spearhead Group Trade Agreement, the impact of this agreement is somewhat lessened by the fact that these developing economies produce similar products.[g]

[a] See www.adb.org/sites/default/files/pub/2004/swimming_against_tide.pdf.
[b] See www.mof.gov.ws/Portals/195/tsunami_publication2_wf_blanks.pdf.
[c] See www.ausaid.gov.au/HotTopics/Pages/Display.aspx?QID=936.
[d] In 2011, the total percentage of value added by the agricultural sector in the Pacific (excluding Australia and New Zealand) was 12.7 per cent. It was especially high for such economies as Papua New Guinea (31.1 per cent), Solomon Islands (28.9 per cent), the Federated States of Micronesia (26.6 per cent) and Kiribati (25.8 per cent), but much lower for the Cook Islands (4.9 per cent), Palau (3.2 per cent), French Polynesia (2.4 per cent) and New Caledonia (1.6 per cent).
[e] Andrew M. McGregor, "The export of horticultural and high-value agricultural products from the Pacific islands," *Pacific Economic Bulletin*, vol. 22, No. 3 (October 2007), pp. 81-99.
[f] Ibid. McGregor's paper provides a good country-specific overview.
[g] See www.pacificpolicy.org/wp-content/uploads/2012/05/D03-PiPP.pdf.

Further reading

ESCAP. *Asia-Pacific Trade and Investment Report 2012: Recent Trends and Developments.* Bangkok, 2012. ST/ESCAP/2650.

————. *Asia-Pacific Trade and Investment Report 2013*. Bangkok, forthcoming.

United Nations Conference on Trade and Development. *Trade and Development Report 2013*. Geneva, forthcoming.

World Trade Organization. *International Trade Statistics 2012*. Geneva, 2012.

————. *World Trade Report 2013*. Geneva, forthcoming.

Technical notes

Exports and imports of merchandise (billions of United States dollars, percentage of GDP, percentage change per annum)

This covers all types of outward and inward movements of goods through a country or territory, including movements through customs warehouses and free zones. Goods include all merchandise that either add to or reduce the stock of material resources of a country by entering (imports) or leaving (exports) the country's economic territory. Unless otherwise indicated, exports are valued at transaction value, including the cost of transportation and insurance to bring the merchandise to the frontier of the exporting country or territory ("free on board" valuation). **Aggregate calculations:** Sum of individual country values (millions of United States dollars); aggregate values are validated using GDP in current prices of United States dollars. The GDP figures up to 2011 are sourced from NAMAD. The 2012 figures are estimated by ESCAP by converting the GDP growth rate (percentage) taken from the International Monetary Fund (IMF) World Economic Outlook Database to million United States dollars (available from www.imf.org/external/pubs/ft/weo/2013/01/weodata/index.aspx). Missing data are not imputed.

Exports and imports of services (billions of United States dollars, percentage change per annum)

Exports (credits or receipts) and imports (debits or payments) of commercial services derived from statistics on international service transactions are included in balance of payments statistics, in conformity with the concepts, definitions and classification of the IMF Balance of Payments Manual, 5th ed. (1993). **Aggregate calculations:** Sum of individual country values (millions of United States dollars); aggregate values are validated using GDP in current prices of United

States dollars. The GDP figures up to 2011 are sourced from NAMAD. The 2012 figures are estimated by ESCAP by converting the GDP growth rate (percentage) taken from the World Economic Outlook Database to million United States dollars (available from www.imf.org/external/pubs/ft/weo/2013/01/weodata/index.aspx). Missing data are not imputed.

Asian and Pacific intraregional exports and imports of merchandise (billions of United States dollars, percentage of total merchandise exports/imports, percentage change per annum)

The merchandise exports and imports destined to or sourced from the Asian and Pacific region as a percentage of total merchandise exports and imports. **Aggregate calculations:** Intraregional exports/imports as a percentage of the sum of total exports/imports. Missing data are imputed.

Sources

Source of exports and imports of merchandise data: World Trade Organization. Figures for total merchandise trade are largely derived from the IMF International Financial Statistics Database. The World Trade Organization obtains data on merchandise trade by origin, destination and product from: the Eurostat Comext Database of the European Commission (data available from http://epp.eurostat.ec.europa.eu/newxtweb/mainxtnet.do); World Trade Atlas, the database of Global Trade Information Services (available from www.gtis.com/english/GTIS_WTA.html); COMTRADE, the United Nations Commodity Trade Statistics Database (available from http://comtrade.un.org/db/); and other sources. Some inconsistencies are inevitable between sources in the aggregate export and import data of a particular country or territory. This is due to the use of different systems of recording trade, to the way in which IMF and the United Nations Statistics Division have converted data expressed in national currencies into dollars, and to revisions that can be more readily incorporated in the IMF data. **Data obtained:** 16 April 2013.

Source of imports and exports of services data: World Trade Organization and United Nations Conference on Trade and Development. Figures for imports and exports of services are mainly drawn from IMF Balance of Payments Statistics. For economies that do not report to IMF, data are drawn from national sources. Estimates for missing data are mainly based on national statistics. Figures on imports and exports of services by origin and destination are also derived from national statistics. **Data obtained:** 16 April 2013.

Source of intraregional exports and imports of merchandise data: COMTRADE. The United Nations Statistics Division receives reports of individual country values from countries and makes no adjustments. **Data obtained:** 3 September 2013.

G.5.1 Merchandise trade

	Exports of merchandise						Imports of merchandise					
	Billion US dollars			% of GDP	% change per annum		Billion US dollars			% of GDP	% change per annum	
	1990	2000	2012	2012	2012	08-12	1990	2000	2012	2012	2012	08-12
East and North-East Asia	**501.3**	**1 107.2**	**3 897.4**	**25.7**	**4.2**	**6.7**	**448.7**	**984.1**	**3 798.6**	**25.0**	**4.0**	**8.5**
China	62.1	249.2	2 048.8	26.4	7.9	9.4	53.3	225.1	1 818.1	23.4	4.3	12.6
DPR Korea	1.9	0.7	3.4		1.5	12.9	2.9	1.7	5.0		11.1	8.7
Hong Kong, China	82.4	202.7	493.4	199.9	8.3	7.4	84.7	214.0	554.2	224.6	8.5	9.0
Japan	287.6	479.2	798.6	13.3	-3.0	0.5	235.4	379.5	885.8	14.8	3.6	3.8
Macao, China	1.7	2.5	1.0		17.5	-15.4	1.5	2.6	9.1		14.8	11.5
Mongolia	0.7	0.5	4.4	45.6	-9.0	14.6	0.9	0.6	6.7	70.1	2.1	16.8
Republic of Korea	65.0	172.3	547.9	48.1	-1.3	6.7	69.8	160.5	519.6	45.6	-0.9	4.5
South-East Asia	**144.1**	**432.0**	**1 253.5**	**53.7**	**1.3**	**6.1**	**162.3**	**380.7**	**1 221.8**	**52.4**	**6.0**	**6.8**
Brunei Darussalam	2.2	3.9	13.5	81.5	8.5	6.9	1.0	1.1	3.5	20.8	17.2	7.6
Cambodia	0.1	1.4	8.2	60.0	18.0	14.9	0.2	1.9	11.0	80.5	18.3	14.0
Indonesia	25.7	65.4	188.1	20.9	-6.3	7.7	21.8	43.6	190.2	21.1	8.0	10.5
Lao PDR	0.1	0.3	2.4	27.0	8.3	21.8	0.2	0.5	2.7	30.4	12.6	17.8
Malaysia	29.5	98.2	227.4	74.8	-0.3	3.3	29.3	82.0	196.6	64.7	4.9	5.8
Myanmar	0.3	1.6	9.4	16.0	1.8	7.9	0.3	2.4	11.0	18.7	22.0	26.6
Philippines	8.1	39.8	52.0	21.7	7.6	1.5	13.0	37.0	65.4	27.3	2.6	2.0
Singapore	52.7	137.8	408.4	155.1	-0.3	4.8	60.8	134.5	379.7	144.2	3.8	4.4
Thailand	23.1	69.1	229.5	58.3	3.1	6.6	33.0	61.9	247.6	62.9	8.2	8.4
Timor-Leste			0.0	0.2	0.0	-2.0			0.4	6.0	8.8	8.3
Viet Nam	2.4	14.5	114.6	88.3	18.2	16.3	2.8	15.6	113.8	87.7	6.6	9.0
South and South-West Asia	**60.0**	**120.9**	**602.7**	**16.2**	**-4.4**	**5.5**	**81.7**	**150.2**	**895.1**	**24.1**	**1.5**	**7.5**
Afghanistan	0.2	0.1	0.4	1.7	-6.9	-10.3	0.9	1.2	6.2	29.7	-3.0	19.7
Bangladesh	1.7	6.4	25.1	22.3	2.8	13.1	3.6	8.9	34.1	30.3	-5.7	9.4
Bhutan	0.1	0.1	0.6	31.2	-12.5	3.1	0.1	0.2	1.0	53.9	-3.0	17.1
India	18.0	42.4	293.2	14.9	-3.2	10.8	23.6	51.5	489.4	24.8	5.4	11.1
Iran (Islamic Rep. of)	19.3	28.7	95.5	18.7	-26.8	-4.3	20.3	13.9	56.5	11.0	-8.5	-0.4
Maldives	0.1	0.1	0.3	14.8	-9.2	-1.3	0.1	0.4	1.6	73.3	6.1	2.9
Nepal	0.2	0.8	1.0	5.0	4.4	0.6	0.7	1.6	6.5	33.6	12.6	16.0
Pakistan	5.6	9.0	24.6	11.4	-3.1	4.9	7.4	10.9	44.2	20.4	0.3	1.1
Sri Lanka	1.9	5.4	9.5	15.1	-7.4	2.9	2.7	7.2	19.1	30.3	-5.8	8.1
Turkey	13.0	27.8	152.5	19.2	13.1	3.7	22.3	54.5	236.5	29.7	-1.8	4.0
North and Central Asia		**123.4**	**687.8**	**29.9**	**1.6**	**3.4**		**58.2**	**432.1**	**18.8**	**6.2**	**3.9**
Armenia		0.3	1.4	13.1	7.0	7.8		0.9	4.3	39.3	2.9	-0.9
Azerbaijan		1.7	32.0	49.4	-7.2	1.1		1.2	10.3	15.9	1.3	8.0
Georgia		0.3	2.4	15.5	8.6	12.3		0.7	7.8	51.2	11.1	5.6
Kazakhstan		8.8	92.3	47.1	5.3	6.7		5.0	44.5	22.7	20.2	4.1
Kyrgyzstan		0.5	1.9	32.3	-4.0	0.5		0.6	5.4	91.6	26.1	7.2
Russian Federation		105.6	529.3	27.6	1.4	2.9		44.7	335.4	17.5	3.6	3.5
Tajikistan		0.8	1.4	19.4	8.1	-0.9		0.7	3.8	53.9	17.8	3.7
Turkmenistan		2.5	16.0	56.0	23.1	7.6		1.8	9.7	34.0	31.1	14.7
Uzbekistan		2.8	11.2	22.8	-15.5	2.1		2.7	10.9	22.2	9.5	4.1
Pacific	**51.9**	**82.3**	**304.1**	**17.2**	**-4.6**	**7.6**	**56.0**	**90.6**	**314.8**	**17.6**	**6.3**	**6.1**
American Samoa	0.3	0.3	0.3		7.1	-14.8	0.4	0.5	0.7		-1.4	0.4
Australia	39.8	63.9	256.8	16.4	-5.0	8.2	42.0	71.5	260.9	16.6	7.1	6.8
Cook Islands	0.0	0.0	0.0		-4.3	-7.6	0.1	0.1	0.1		7.1	-5.0
Fiji	0.5	0.6	0.9	24.2	5.6	0.5	0.8	0.8	2.5	62.9	4.3	2.0
French Polynesia	0.1	0.2	0.1		-17.3	-8.2	0.9	1.0	1.7		-5.1	-5.8
Guam	0.1	0.1	0.0		6.4	-18.6						
Kiribati	0.0	0.0	0.0	5.4	16.3	7.4	0.0	0.0	0.1	53.5	9.0	7.4
Marshall Islands		0.0	0.0	18.2	0.0	14.7		0.1	0.1	72.7	0.0	8.8
Micronesia (F.S.)		0.0	0.0	10.8	25.0	6.4		0.1	0.2	65.0	16.7	7.9
Nauru												
New Caledonia	0.4	0.6	1.3		-20.5	0.4	0.9	0.9	3.2		-12.3	0.1
New Zealand	9.4	13.3	37.3	22.4	-1.0	5.1	9.5	13.9	38.3	22.9	3.1	2.7
Niue	0.0	0.0	0.0		0.0	1.3	0.0	0.0	0.0		-7.1	-4.2
Northern Mariana Islands		1.0	0.0		50.0	-59.8						
Palau		0.0	0.0		16.7	-8.5		0.1	0.1		16.7	3.9
Papua New Guinea	1.2	2.1	6.5	47.3	-5.9	3.3	1.2	1.2	5.5	40.1	14.6	11.9
Samoa	0.0	0.1	0.1	11.3	39.9	1.4	0.1	0.1	0.3	51.2	-0.1	4.7
Solomon Islands	0.1	0.1	0.5	53.2	13.2	22.3	0.1	0.1	0.5	56.6	7.2	11.1
Tonga	0.0	0.0	0.0	3.5	11.2	14.6	0.1	0.1	0.2	45.7	8.8	5.8
Tuvalu	0.0	0.0	0.0	0.8	0.0	10.7	0.0	0.0	0.0	67.6	0.0	-1.3
Vanuatu	0.0	0.0	0.1	6.9	-18.3	-0.8	0.1	0.1	0.3	36.9	-3.1	-1.5
Asia and the Pacific	**757.4**	**1 865.8**	**6 745.4**	**26.7**	**2.1**	**6.1**	**748.8**	**1 663.6**	**6 662.4**	**26.3**	**4.2**	**7.6**
Developed countries	336.7	556.4	1 092.7	14.1	-3.4	2.3	286.9	464.9	1 185.0	15.3	4.3	4.4
Developing countries	420.6	1 309.4	5 652.7	32.2	3.3	7.0	461.9	1 198.7	5 477.4	31.1	4.2	8.4
LLDC		19.4	164.9	39.0	1.8	5.3		16.9	112.0	26.5	13.8	7.4
LDC	2.8	11.0	47.6	19.5	5.0	11.8	6.2	17.0	74.2	30.3	3.4	13.6
ASEAN	144.1	432.0	1 253.5	53.9	1.3	6.1	162.3	380.7	1 221.5	52.5	6.0	6.8
ECO	38.1	82.8	427.7	22.6	-3.4	2.1	51.0	92.4	428.0	22.6	0.7	3.5
SAARC	27.8	64.4	354.6	14.7	-2.9	10.1	39.1	81.8	602.0	25.0	3.9	10.1
Central Asia		17.8	158.5	42.0	2.2	5.1		13.5	96.7	25.6	16.2	5.4
Pacific island dev. econ.	2.7	5.2	10.0	38.4	-5.9	1.6	4.5	5.1	15.7	46.2	2.3	3.7
Low income econ.	4.4	12.4	50.6	19.8	4.5	10.6	8.6	18.9	83.0	32.7	5.5	12.3
Lower middle income econ.	64.3	183.8	712.5	19.5	-0.7	9.3	74.8	174.0	965.6	26.5	5.4	9.2
Upper middle income econ.		592.1	3 423.9	28.6	4.6	6.7		491.1	2 957.7	24.7	4.0	9.3
High income econ.	541.4	1 077.5	2 558.4	27.2	-0.3	4.5	506.6	979.6	2 656.1	28.1	4.0	5.3
Africa	**105.9**	**148.3**	**625.7**	**31.3**	**4.7**	**2.7**	**99.5**	**129.4**	**602.9**	**30.2**	**7.6**	**5.8**
Europe	**1 671.4**	**2 628.2**	**6 336.0**	**33.2**	**-4.4**	**-0.5**	**1 727.8**	**2 673.9**	**6 312.0**	**33.0**	**-6.0**	**-1.5**
Latin America and Carib.	**146.8**	**364.0**	**1 119.7**	**19.3**	**1.7**	**5.5**	**129.0**	**385.9**	**1 132.2**	**19.3**	**3.9**	**5.2**
North America	**521.7**	**1 058.9**	**2 002.6**	**11.7**	**3.6**	**3.5**	**641.3**	**1 505.2**	**2 812.0**	**16.4**	**3.0**	**2.1**
World	**3 449.0**	**6 456.0**	**18 323.0**	**25.3**	**0.2**	**3.2**	**3 550.0**	**6 724.0**	**18 567.0**	**25.5**	**0.4**	**2.9**

G.5.2 Trade in services

	Export of services						Import of services					
	Billion US dollars				% change per annum		Billion US dollars				% change per annum	
	1990	2000	2008	2012	2012	08-12	1990	2000	2008	2012	2012	08-12
East and North-East Asia	**76.7**	**172.9**	**492.8**	**610.7**	**5.9**	**5.5**	**111.9**	**208.5**	**473.9**	**629.4**	**10.7**	**7.4**
China	5.7	30.1	146.4	190.0	4.3	6.7	4.1	35.9	158.0	281.0	18.6	15.5
DPR Korea												
Hong Kong, China	18.3	40.4	92.2	126.0	6.7	8.1	12.9	24.6	46.9	57.3	1.8	5.1
Japan	41.4	68.3	146.4	139.8	-2.0	-1.2	84.3	113.9	167.3	173.6	4.7	0.9
Macao, China	1.5	3.3	17.8	45.1	14.2	26.2	0.2	0.8	5.6	10.5	6.7	16.8
Mongolia	0.0	0.1	0.5	0.8	21.9	10.9	0.2	0.2	0.6	2.0	12.8	35.1
Republic of Korea	9.8	30.8	89.4	109.1	16.3	5.1	10.1	33.2	95.4	105.1	7.0	2.4
South-East Asia	**28.5**	**68.4**	**196.5**	**271.8**	**6.7**	**8.4**	**28.0**	**87.1**	**210.1**	**273.5**	**3.4**	**6.8**
Brunei Darussalam		0.2	0.9					0.8	1.2			
Cambodia		0.4	1.6	2.7	24.2	13.3		0.3	0.9	1.5	18.1	13.0
Indonesia	2.5	5.1	14.7	22.4	12.1	11.0	5.9	15.4	28.0	34.4	8.2	5.3
Lao PDR	0.0	0.1	0.4				0.0	0.0	0.1			
Malaysia	3.8	13.8	30.3	37.8	5.5	5.7	5.4	16.6	30.1	42.0	9.6	8.7
Myanmar	0.1	0.5	0.3				0.1	0.3	0.6			
Philippines	2.9	3.4	9.7	17.7	14.8	16.2	1.7	5.2	8.3	13.5	16.1	12.8
Singapore	12.7	28.4	99.0	133.2	3.3	7.7	8.6	30.0	87.2	116.9	2.7	7.6
Thailand	6.3	13.8	32.7	48.7	18.1	10.5	6.2	15.3	45.7	52.7	1.4	3.6
Timor-Leste			0.0						0.1			
Viet Nam	0.2	2.7	7.0	9.3	6.0	7.5	0.1	3.3	7.9	12.3	5.5	11.9
South and South-West Asia	**15.1**	**40.9**	**156.1**	**196.4**	**0.8**	**5.9**	**15.7**	**35.2**	**138.8**	**156.8**	**-12.7**	**3.1**
Afghanistan												
Bangladesh	0.3	0.3	0.9	1.5	9.0	13.9	0.6	1.5	3.5	5.1	2.7	10.0
Bhutan	0.0	0.0	0.1	0.1	22.6	17.8	0.0	0.0	0.1	0.1	19.4	10.1
India	4.6	16.0	106.7	147.6	7.7	8.4	5.9	18.9	87.8	125.1	1.1	9.2
Iran (Islamic Rep. of)	0.3	1.4	7.9				3.7	2.2	17.2			
Maldives	0.1	0.3	0.7	2.0	0.5	29.0	0.0	0.1	0.3	0.6	7.8	13.9
Nepal	0.2	0.4	0.5				0.2	0.2	0.8			
Pakistan	1.2	1.3	2.5	3.1	-8.4	5.3	1.9	2.1	9.3	7.0	-3.1	-6.8
Sri Lanka	0.4	0.9	2.0				0.6	1.6	3.0		-14.8	
Turkey	7.9	20.2	34.8	42.1	9.5	4.9	2.8	8.5	16.7	18.8	-3.3	3.0
North and Central Asia		**11.7**	**60.0**	**73.6**	**11.4**	**5.2**		**19.4**	**92.3**	**128.0**	**17.5**	**8.5**
Armenia		0.1	0.6	0.8	-0.7	5.7		0.2	1.0	1.1	-1.3	3.6
Azerbaijan		0.2	1.5	4.0	51.9	28.6		0.5	3.8	7.6	34.6	18.6
Georgia		0.3	1.2	2.4	27.0	20.4		0.3	1.2	1.4	19.4	5.6
Kazakhstan		0.9	4.0	4.7	13.8	4.1		1.8	10.9	13.5	25.1	5.5
Kyrgyzstan		0.1	0.9	1.2	10.1	8.3		0.1	1.0	1.6	39.5	12.4
Russian Federation		9.6	50.6	58.4	9.6	3.6		16.2	73.6	102.1	16.3	8.5
Tajikistan		0.1	0.1					0.1	0.5			
Turkmenistan												
Uzbekistan		0.4	1.2	2.2	21.4	15.8		0.3	0.4	0.7	18.3	11.5
Pacific	**13.0**	**24.6**	**56.9**	**63.2**	**0.1**	**2.7**	**17.4**	**24.4**	**62.3**	**79.8**	**5.5**	**6.4**
American Samoa												
Australia	9.8	19.4	44.5	52.7	3.6	4.3	13.4	18.6	47.6	65.3	10.1	8.2
Cook Islands												
Fiji	0.4	0.4	1.0				0.2	0.3	0.6			
French Polynesia			1.0						0.7		11.4	
Guam												
Kiribati	0.0	0.0	0.0				0.0	0.0	0.1		23.8	
Marshall Islands												
Micronesia (F.S.)		0.0	0.0					0.1	0.1			
Nauru												
New Caledonia			0.4						1.4		-13.8	
New Zealand	2.4	4.3	9.2	10.1	0.8	2.3	3.3	4.4	9.7	10.9	1.0	3.1
Niue												
Northern Mariana Islands												
Palau												
Papua New Guinea	0.2	0.2	0.3	0.4	-3.1	4.1	0.4	0.8	1.8	3.5	19.3	18.0
Samoa	0.0	0.1	0.1				0.0	0.0	0.1		-2.5	
Solomon Islands	0.0	0.0	0.1				0.1	0.1	0.1			
Tonga	0.0	0.0	0.0				0.0	0.0	0.0			
Tuvalu		0.0	0.0					0.0	0.0			
Vanuatu	0.1	0.1	0.2				0.0	0.1	0.1			
Asia and the Pacific	**133.2**	**318.6**	**962.3**	**1 215.7**	**5.2**	**6.0**	**172.9**	**374.6**	**977.4**	**1 267.4**	**5.9**	**6.7**
Developed countries	53.6	92.1	200.1	202.6	-0.4	0.3	100.9	136.9	224.6	249.8	5.9	2.7
Developing countries	79.5	226.5	762.1	1 013.1	6.4	7.4	72.0	237.7	752.8	1 017.6	5.9	7.8
LLDC		2.5	9.7	13.7	5.7	9.0		3.3	19.2	26.5	16.1	8.4
LDC	0.7	1.9	4.1				1.0	2.6	6.5			
ASEAN	28.5	68.4	196.5	271.8	6.7	8.4	28.0	87.1	210.0	273.5	3.8	6.8
ECO	9.4	24.6	52.8	57.2	-5.5	2.0	8.4	15.6	59.8	49.1	-23.5	-4.8
SAARC	6.8	19.3	113.4	154.3	4.4	8.0	9.2	24.5	104.9	138.0	-2.4	7.1
Central Asia		2.2	9.4	15.3	18.7	12.7		3.2	18.7	25.8	22.6	8.4
Pacific island dev. econ.			3.2						5.0			
Low income econ.		1.7	4.3					2.5	7.3			
Lower middle income econ.	12.6	31.4	148.3	206.7	6.3	8.7	17.1	48.7	150.6	201.3	1.0	7.5
Upper middle income econ.		90.4	308.8	387.7	5.3	5.9		97.1	356.4	518.3	10.2	9.8
High income econ.	95.9	195.1	500.8	615.9	5.1	5.3	132.8	226.2	463.1	539.6	4.2	3.9
Africa	**18.5**	**31.5**	**84.9**	**89.6**	**5.1**	**1.4**	**26.2**	**38.7**	**141.9**	**161.7**	**4.9**	**3.3**
Europe	**421.3**	**705.2**	**1 953.3**	**2 003.1**	**-2.9**	**0.6**	**402.0**	**655.9**	**1 655.0**	**1 627.8**	**-3.7**	**-0.4**
Latin America and Carib.	**29.5**	**59.9**	**126.1**	**130.1**	**-7.9**	**0.8**	**35.6**	**71.0**	**145.5**	**195.7**	**4.2**	**7.7**
North America	**155.8**	**321.7**	**590.5**	**692.6**	**3.7**	**4.1**	**126.0**	**248.6**	**462.5**	**511.9**	**2.4**	**2.6**
World	**788.7**	**1 491.0**	**3 846.4**	**4 346.9**	**1.6**	**3.1**	**823.0**	**1 463.8**	**3 633.1**	**4 105.7**	**2.0**	**3.1**

G.5.3 Intraregional trade

	Asia-Pacific intraregional merchandise exports							Asia-Pacific intraregional merchandise imports						
	Billion US dollars			% of total merchandise exports			% change per annum	Billion US dollars			% of total merchandise imports			% change per annum
	1990	2000	2012	1990	2000	2012	08-12	1990	2000	2012	1990	2000	2012	08-12
East and North-East Asia	**232.5**	**487.6**	**2 128.7**	**41.6**	**44.1**	**54.7**	**9.0**	**246.4**	**525.0**	**2 048.3**	**47.9**	**53.4**	**54.1**	**8.0**
China	62.4	128.6	985.8	73.5	51.6	48.1	11.1	47.9	120.3	921.7	59.4	53.5	50.7	11.2
DPR Korea														
Hong Kong, China	56.4	104.2	369.3	47.2	51.4	74.9	10.9	86.7	156.7	406.5	68.1	73.2	73.5	7.8
Japan	87.4	174.1	430.8	30.5	36.3	53.9	3.0	80.7	168.5	459.6	34.3	44.4	51.9	5.4
Macao, China	0.4	0.5	0.6	22.9	19.2	54.8	-6.6	1.2	2.0	5.3	77.3	76.7	59.2	6.8
Mongolia	0.4	0.3	1.5	85.2	71.5	80.8	0.0	0.3	0.5	1.8	73.0	80.4	84.6	0.0
Republic of Korea	25.5	80.0	340.8	39.3	46.4	62.2	10.1	29.6	77.0	253.3	42.4	48.0	48.8	2.9
South-East Asia	**82.7**	**238.5**	**849.4**	**54.0**	**55.8**	**68.9**	**7.0**	**93.7**	**218.1**	**746.2**	**54.1**	**59.1**	**62.1**	**6.8**
Brunei Darussalam	2.2	2.8	12.8	96.1	90.6	98.7	9.2	0.9	0.9	2.8	58.2	70.0	78.8	11.9
Cambodia	0.4	0.4	3.2	27.6	27.6	41.5	27.0	1.1	1.1	6.0	76.1	76.1	84.6	12.7
Indonesia	17.2	37.9	135.5	66.8	60.9	71.3	9.6	11.3	19.5	135.7	51.9	58.2	70.8	10.4
Lao PDR														
Malaysia	17.9	55.7	162.5	60.8	56.7	71.5	5.9	16.3	49.2	128.1	55.7	60.5	65.2	7.0
Myanmar	0.4	3.5	7.3	85.5	94.8	95.5	2.8	0.5	2.4	3.9	82.1	90.3	93.6	1.9
Philippines	3.3	15.8	34.6	37.6	41.5	66.5	4.5	6.2	20.4	39.8	47.9	55.1	60.9	3.2
Singapore	26.4	78.9	295.8	50.1	57.2	72.4	5.4	30.9	77.4	197.5	50.9	57.5	52.0	3.1
Thailand	9.4	34.7	147.1	40.7	50.4	64.1	8.5	18.8	35.8	156.0	56.3	57.8	63.0	9.8
Timor-Leste	0.1	0.1	0.0	75.6	75.6	63.8	0.0	0.1	0.1	0.1	94.0	94.0	96.5	0.0
Viet Nam	5.4	8.9	50.6	58.9	61.7	52.2	11.6	7.7	11.4	76.3	66.0	72.6	71.5	6.7
South and South-West Asia	**16.1**	**26.1**	**160.9**	**27.2**	**21.8**	**25.9**	**10.2**	**24.0**	**45.9**	**326.9**	**30.8**	**30.5**	**36.8**	**7.3**
Afghanistan	0.5	0.5	0.3	90.8	90.8	70.5	-11.4	2.3	2.3	2.8	75.3	75.3	45.3	5.5
Bangladesh	0.4	0.5	1.9	22.9	9.8	14.3	0.0	1.8	5.0	11.1	52.9	66.0	63.0	0.0
Bhutan	0.1	0.1	0.4	99.5	99.5	98.9	-3.7	0.1	0.2	1.0	86.0	94.8	92.4	17.5
India	7.2	12.2	95.7	40.3	28.9	33.0	11.4	6.1	12.7	167.8	25.7	24.0	34.3	10.5
Iran (Islamic Rep. of)	4.0	6.4	18.7	21.7	22.6	14.3	2.6	4.4	5.0	20.9	31.4	36.4	30.6	13.8
Maldives	0.0	0.0	0.1	37.1	35.8	48.9	-1.8	0.2	0.3	0.9	72.8	75.7	55.2	0.4
Nepal	0.1	0.3	0.7	17.5	48.5	76.8	2.2	0.9	1.1	5.1	78.5	72.3	85.6	15.4
Pakistan	1.8	2.4	9.1	31.5	25.7	37.0	12.0	2.6	3.9	17.8	36.0	34.9	40.6	3.0
Sri Lanka	0.4	0.9	2.5	22.1	17.5	27.2	8.2	1.6	4.0	12.1	59.2	64.0	67.5	5.4
Turkey	1.7	2.6	31.5	13.3	9.4	20.7	13.7	4.0	11.5	87.5	18.2	21.3	37.0	2.8
North and Central Asia		**24.6**	**162.1**	**21.9**	**20.8**	**25.0**	**4.1**		**13.5**	**138.2**	**21.3**	**30.3**	**35.4**	**2.6**
Armenia	0.1	0.1	0.5	56.8	32.7	36.6	11.4	0.3	0.3	2.3	44.7	33.4	53.0	1.6
Azerbaijan	0.5	0.3	7.4	83.5	19.5	31.0	-1.7	0.5	0.6	4.9	56.4	51.4	51.1	7.4
Georgia	0.2	0.2	1.3	75.8	61.8	54.0	16.6	0.3	0.3	4.0	47.6	46.9	51.3	9.3
Kazakhstan	3.3	3.2	32.5	63.2	36.7	35.2	9.6	2.8	3.1	29.8	73.8	62.4	66.8	7.2
Kyrgyzstan	0.3	0.3	1.0	82.7	53.6	60.5	2.7	0.4	0.4	4.2	78.0	69.8	77.5	7.4
Russian Federation	16.0	18.5	117.4	18.0	17.9	22.4	3.1	9.3	7.4	91.7	15.3	21.9	29.0	0.8
Tajikistan	0.4	0.4	0.4	53.5	53.5	53.5	0.0	0.5	0.5	0.5	73.3	73.3	73.3	0.0
Turkmenistan	0.4	1.6	1.6	53.4	64.8	64.8	0.0	0.6	0.9	0.9	48.9	51.2	51.2	0.0
Uzbekistan														
Pacific	**28.1**	**48.5**	**230.0**	**54.0**	**59.9**	**76.8**	**10.9**	**21.5**	**41.5**	**172.4**	**40.8**	**48.2**	**57.7**	**6.3**
American Samoa														
Australia	21.7	39.7	203.1	55.8	62.2	79.3	11.4	14.5	31.9	141.7	37.5	47.1	56.6	7.3
Cook Islands	0.0	0.0	0.0	90.2	90.2	96.2	0.0	0.0	0.0	0.1	55.4	92.2	97.0	0.0
Fiji	0.3	0.2	0.6	55.8	49.3	53.0	6.8	0.6	0.4	2.0	74.0	48.3	87.1	-0.2
French Polynesia	0.2	0.2	0.1	62.3	65.9	64.2	-8.1	0.3	0.3	0.8	25.4	31.4	49.2	-1.8
Guam														
Kiribati	0.0	0.0	0.0	33.7	74.8	32.0	-24.7	0.0	0.0	0.1	90.3	92.9	93.3	9.9
Marshall Islands														
Micronesia (F.S.)														
Nauru														
New Caledonia	0.2	0.3	0.7	41.9	44.2	50.4	4.9	0.4	0.4	1.8	36.2	38.9	55.8	2.6
New Zealand	5.2	7.7	24.2	55.1	57.7	65.4	7.2	4.3	7.1	23.4	45.5	51.2	61.4	2.9
Niue														
Northern Mariana Islands														
Palau														
Papua New Guinea	0.5	0.4	0.8	20.7	16.4	28.6	0.0	1.2	0.9	1.4	84.8	89.7	87.4	0.0
Samoa	0.0	0.0	0.1	67.3	67.3	71.6	-6.1	0.1	0.1	0.3	82.8	82.8	84.1	4.9
Solomon Islands	0.0	0.0	0.3	58.4	58.4	83.6	17.0	0.1	0.1	0.4	89.3	89.3	93.9	14.8
Tonga	0.0	0.0	0.0	72.0	72.0	78.7	13.2	0.1	0.1	0.2	88.3	88.3	85.8	3.7
Tuvalu	0.0	0.0	0.0	98.4	98.4	100.0	0.0	0.0	0.0	0.0	95.7	92.0	87.9	0.0
Vanuatu	0.0	0.0	0.1	44.4	72.5	90.0	28.6	0.1	0.1	0.3	89.2	90.5	91.4	4.1
Asia and the Pacific	**380.6**	**825.3**	**3 531.2**	**41.4**	**44.5**	**52.8**	**8.4**	**400.4**	**844.0**	**3 432.0**	**45.1**	**51.7**	**52.3**	**7.3**
Developed countries	114.3	221.4	658.1	34.1	39.8	60.3	5.4	99.4	207.6	624.7	35.2	45.0	53.2	5.7
Developing countries		603.9	2 873.0	45.5	46.6	51.3	9.2		636.4	2 807.3	49.7	54.3	52.1	7.7
LLDC		7.2	46.4	64.7	44.2	36.8	6.0		9.8	53.1	69.4	64.1	65.2	7.2
LDC		5.5		41.2	45.4	46.3			12.5		69.3	73.9	71.6	
ASEAN	82.6	238.4	849.4	54.0	55.7	68.9	7.0	93.6	218.0	746.1	54.0	59.0	62.1	6.8
ECO		17.6	102.5	28.6	22.1	23.9	8.0		28.1	169.3	33.8	30.8	40.6	4.9
SAARC	10.4	17.1	110.7	37.1	26.7	32.7	10.8	15.6	29.5	218.5	37.3	35.5	37.5	8.8
Central Asia		6.1	44.7	64.2	41.3	35.8	6.8		6.1	46.5	64.0	57.0	62.8	6.8
Pacific island dev. econ.		1.2		32.1	30.0	44.4			2.4		58.9	55.9	71.5	
Low income econ.		5.8		44.1	45.1	45.8			12.8		69.0	73.1	71.3	
Lower middle income econ.	37.0	79.7	333.7	50.5	45.3	49.6	9.8	38.7	74.9	463.1	45.7	46.5	49.5	8.4
Upper middle income econ.		251.5	1 504.6	43.8	42.8	43.8	9.3		234.1	1 442.4	42.5	48.9	49.1	9.2
High income econ.	225.6	488.2	1 678.1	39.1	45.4	65.6	7.4	249.4	522.2	1 492.8	45.7	53.5	56.4	5.4
Africa														
Europe														
Latin America and Carib.														
North America														
World														

G.6. International financing

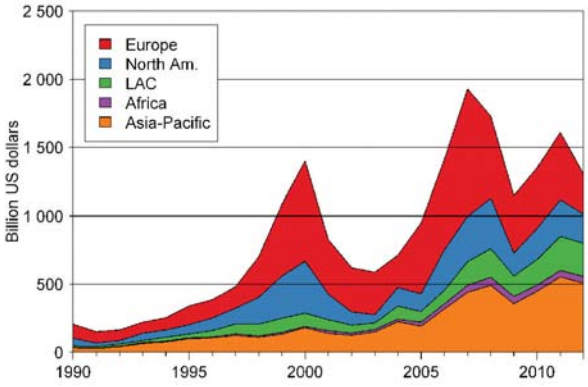
National economies are increasingly interconnected through the operations of multinational companies, cross-border financing and migration flows. In the Yearbook, three topics on national and regional macroeconomic trends focus on economic growth, fiscal balance and monetary measures, while the present topic sheds light on some economic interactions among countries in the Asian and Pacific region, and between these countries and the rest of the world. These economic interactions are described in the form of foreign direct investment (FDI), official development assistance (ODA), remittances and debt repayments.

FDI inflows to the Asian and Pacific region fell in 2012 after two years of robust growth. However, the region increased its share of global inflows from 33.4 per cent in 2011 to 37.5 per cent in 2012. FDI outflows from the region accounted for 33.7 per cent of global outflows in 2012. South-East Asia was the only subregion to experience growth in FDI inflows in 2012.

Both FDI inflows to and outflows from the Asian and Pacific region dipped considerably in 2009 following the global financial crisis. In 2010 and 2011 inflows rebounded, but, in 2012, the trend took a turn as inflows dropped by over 8 per cent from $553 billion to $506 billion. The region has proven, however, to be resilient compared with other world regions. Asia and the Pacific increased its share of global FDI inflows from 33.4 per cent in 2011 to 37.5 per cent in 2012, clearly leaving behind Europe (21.4 per cent), Latin America and the Caribbean (18.1 per cent), North America (15.8 per cent) and Africa (3.7 per cent).

In 2012, outflows from the region fell by less than 1 per cent to $468 billion. The region accounts for 33.7 per cent of global outflows. Most FDI outflows originate from high-income or upper-middle-income economies, and outflows from low-income economies are virtually non-existent. Outflows from developed economies in the Asian and Pacific region continued to grow in 2012, which was contrary to the trend in North America and in Europe, where outflows fell by 14.2 per cent and 36.6 per cent, respectively.

Figure G.6-1
Foreign direct investment inflows by region, 1990-2012



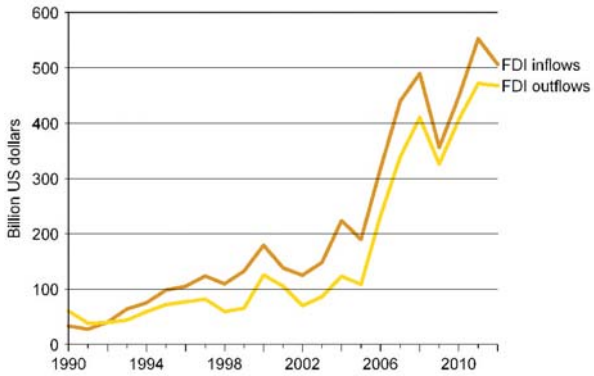
The Asian and Pacific subregions contribute quite unevenly to FDI flows to and from the region. East and North-East Asia continues to be the most attractive for FDI; the bulk of the FDI inflows (42.1 per cent) went to this subregion, which also accounts for most of the FDI outflows (close to 70 per cent). Japan plays a very limited role in attracting FDI inflows; however, it is a major source of FDI outflows. Without Japan, the share of FDI outflows from the subregion is reduced to 43.0 per cent.

South-East Asia attracts 22.0 per cent of total inflows to Asia and the Pacific, which is the second most in the region. In 2012, South-East Asia was the only subregion to witness growth in FDI inflows (2.1 per cent). The growth in inflows has been mainly driven by Cambodia (72.7 per cent), the Philippines (54.0 per cent), Viet Nam (12.6 per cent) and Thailand (10.7 per cent). FDI outflows from the subregion witnessed robust yearly growth of over 20 per cent in 2009-2011, following a drop of 45.9 per cent during the global financial crisis. In 2012, growth in outflows fell to 2.8 per cent. Nevertheless, outflows from the Philippines, Thailand and Viet Nam increased in 2012.

North and Central Asia, and South and South-West Asia account for 14.6 per cent and 9.1 per cent of FDI inflows, respectively. The former is also an important source of FDI outflows, as the Russian Federation accounted for 10.9 per cent of total outflows from the region in 2012. Inflows to the Pacific subregion amounted to 12.2 per cent of total inflows to the region; however, this is mainly due to the influence of Australia and New Zealand. Excluding the developed economies, the Pacific's share remained under 0.5 per cent.

In 2012, FDI inflows as a share of GDP remained at 2.0 per cent for the region, although there were large variations between countries. Small dynamic economics such as Mongolia (46.3 per cent), Hong Kong, China (30.2 per cent), Singapore (21.5 per cent) and Marshall Islands (19.9 per cent), tend to have higher shares. FDI inflows as a percentage of GDP in developing economies fell slightly from 2.9 per cent in 2011 to 2.5 per cent in 2012, mainly due to the large influence of India, where the share dropped from 1.9 per cent in 2011 to 1.3 per cent in 2012. FDI outflows as a share of GDP for the region has remained fairly stagnant, dropping by only 0.1 percentage points to 1.9 per cent in 2012.

Figure G.6-2
Foreign direct investment inflows to and outflows from the Asian and Pacific region, 1990-2012



Five economies — China, Hong Kong, China, India, the Russian Federation and Singapore — continue to dominate as destinations for FDI inflows. They also play an important role as sources of FDI. ASEAN countries are showing signs of becoming increasingly important as both destinations and sources of FDI.

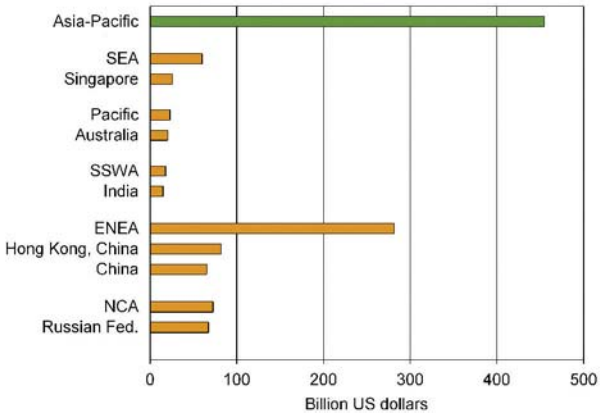
Close to 65 per cent of all FDI inflows to the region go to China, Hong Kong, China, India, the Russian Federation and Singapore. In 2012, the largest recipient was China, with a share of 23.9 per cent, followed by Hong Kong, China, with 14.7 per cent, Singapore with 11.2 per cent, the Russian Federation with 10.2 per cent and India with 5.0 per cent.

In 2012, China and Hong Kong, China experienced a drop in the growth of inflows. In Singapore, FDI inflows continued to grow, but at a low 1.3 per cent rate. After two years of negative growth, India was able to shift into positive territory in 2011; however, in 2012, FDI inflows dropped again by almost 30 per cent. In the Russian Federation, the decrease in FDI inflows was more moderate (6.7 per cent).

These five economies are also important sources of outflows from their respective subregions. Excluding Japan, in East and North-East Asia, China and Hong Kong, China, together account for 83.5 per cent of remaining outflows. In South-East Asia, a large share of FDI outflows originates from Singapore, with 38.1 per cent of total outflows from the subregion. In South and South-West Asia, India still dominates as a source of outflows, with a share of over 64.6 per cent, although this share decreased from 81.4 per cent the previous year. This is due to the fact that other countries in the subregion, such as Turkey, have increased their FDI outflows. In North and Central Asia, the Russian Federation continues to account for over 90 per cent of total FDI outflows from the subregion.

Apart from these so-called "FDI giants", there are a number of countries, especially ASEAN countries, that are showing signs of becoming

Figure G.6-3
Foreign direct investment outflows from Asia and the Pacific, 2012



more attractive to FDI. As mentioned above, South-East Asia was the only subregion to attract increased flows in FDI in 2012. Low-income economies, such as Cambodia, the Philippines and Viet Nam, in particular, attracted higher levels of FDI. This development was mainly driven by increased labour-intensive FDI and value chain activities. In addition, Thailand rebounded in 2012 as FDI inflows grew by 10.7 per cent after a decline in 2011 due to widespread flooding. ASEAN countries are also becoming increasingly important as suppliers of FDI. They now account for 12.9 per cent of total outflows from the region. Outflows from the Philippines, Thailand and Viet Nam grew significantly in 2012. Despite this growth, most outflows still originate from Singapore and Malaysia, which account for 38.1 per cent and 28.2 per cent, respectively, of outflows from the subregion.

High-income and upper-middle-income economies in Asia and the Pacific attract by far the largest amounts of FDI inflows. Developed economies account for a large share of FDI outflows from the region.

Together, high-income and upper-middle-income economies accounted for 85.8 per cent of total FDI inflows to the region in 2012. However, low-income economies have shown resilience in recent years. After the global financial crisis, FDI inflows to low-income economies rebounded quickly and grew by 48.8 per cent in 2010 and by 37.4 per cent in 2011. Whereas inflows to lower-middle-income, upper-middle-income and high-income economies declined in 2012, those to low-income economies grew by 10.4 per cent.

The majority of FDI outflows originate from high-income and upper-middle-income economies, which together provide 96.1 per cent of total outflows from the region. Of the total share of FDI outflows from the region in 2012, the shares of Australia, Japan and New Zealand together accounted for 29.5 per cent.

Least developed countries accounted for 1.1 per cent and landlocked developing countries for 5.2 per cent of total FDI inflows to the Asian and Pacific region. FDI inflows to least developed countries continued to grow in 2012, although those to landlocked developing countries dropped slightly.

FDI inflows to least developed countries in the region grew by close to 10 per cent in 2012, reaching a new peak of almost $5.5 billion. This increase in inflows was driven mostly by increased FDI in the largest recipient countries among least developed countries, namely Cambodia and Myanmar. FDI inflows to landlocked developing countries in the region remained at a high level of $26.4 billion, although they fell somewhat from the previous year. For countries that are not endowed with resources or are situated in remote areas, it becomes even more crucial to ensure that the investment climate is attractive to investors. Currently, most least developed countries rank low in the World Bank's *Doing Business* report, with Samoa having the best rank at 57[1] Unsurprisingly, many of the countries ranked lowest fall into both categories: least developed countries and landlocked developing countries.

[1] The World Bank's publication *Doing Business 2013* ranks 185 countries on the basis of ease of doing business. A higher number indicates a lower rank and lower performance. Some of the lowest ranked countries are Afghanistan (168), the Lao People's Democratic Republic (163) and Bhutan (148), which are all both landlocked developing countries and least developed countries. See World Bank, *Doing Business 2013: Smarter Regulations for Small and Medium-Size Enterprises* (Washington, DC, 2013). Available from www.doingbusiness.org/.

Box G.6-1
Impact of round-tripping on foreign direct investment statistics

Round-tripping refers to the phenomenon whereby investment capital is moved abroad and then invested back into the home country in order to avoid regulatory restrictions, to benefit from incentives awarded to foreign investors or to take advantage of tax benefits. Examples of round-tripping can be found, for example, between China and Hong Kong, China, between the Russian Federation and Cyprus, and between India and Mauritius. In some cases, round-tripping can account for a significant share of FDI flows. According to estimates, 25 to 50 per cent of FDI inflows to China can be attributed to round-tripping. In the Russian Federation, over 50 per cent of FDI inflows originate in financial hubs such as Cyprus, Luxembourg and the British Virgin Islands, as well as the Netherlands and Ireland. Indian firms looking to invest abroad often set up holding companies in financial centres such as Mauritius, through which funds are then invested in a third country. Based on the significant role Mauritius plays as a source of FDI inflows to India, it is likely that capital funds invested in Mauritius by Indian companies are mostly channelled back to India. Round-tripping poses a problem for the interpretation of FDI statistics as it inflates FDI flows and can present a distorted view of the sources of FDI. It is extremely difficult, however, to estimate the extent of round-tripping as investors rarely report the activity to the authorities. Nevertheless, being aware of the prevalence and reasons behind round-tripping may help to interpret FDI statistics more accurately.

Sources: India, Ministry of Commerce and Industry, "Fact sheet on foreign direct investment (FDI)" (March 2013). Available from http://dipp.nic.in/English/Publications/FDI_Statistics/2013/india_FDI_March2013.pdf; Harun R. Khan, Deputy Governor of the Reserve Bank of India, "Outward Indian FDI: recent trends and emerging issues", address delivered at the Bombay Chamber of Commerce and Industry, Mumbai, 2 March 2012. Available from www.rbi.org.in/scripts/BS_speechesView.aspx?Id=674; United Nations Conference on Trade and Development, *World Investment Report 2013: Global Value Chains – Investment and Trade for Development* (United Nations publication, Sales No. E.13.II.D.5); United Nations Conference on Trade and Development, *World Investment Report 2003: FDI Policies for Development – National and International Perspective* (United Nations publication, Sales No. E.03.II.D.8); and Geng Xiao, "Round-tripping foreign direct investment and the People's Republic of China", ADB Institute Discussion Paper, No. 7 (Tokyo, 2004).

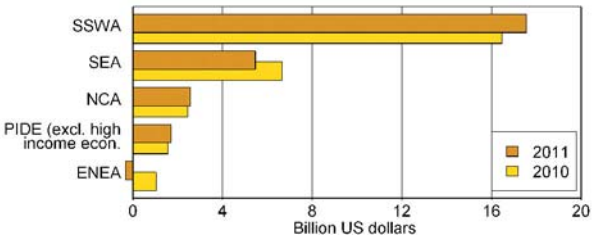
Both least developed countries and landlocked developing countries continue to account for less than 1 per cent of total outflows from the region.

ODA declined overall in the Asian and Pacific region in 2011, but there are considerable differences in ODA flows at the subregional level with least developed countries recording a modest increase in ODA in 2011.

ODA is the component of development financing most affected by the global recession of 2008/09. A total of 16 out of 23 member countries of the Development Assistance Committee reduced their aid contributions in 2011, primarily due to the effects of the global recession. The challenging global outlook has had particularly important effects on least developed countries. Total ODA flows to developing economies in the region dropped by 4.2 per cent between 2010 and 2011, which meant a decrease from $28.2 billion to $27.0 billion. This translated into ODA as a percentage of GDP dropping from 0.25 per cent in 2010 to 0.21 per cent in 2011. Over 40 per cent of the countries in the region experienced a decrease in ODA between 2010 and 2011.

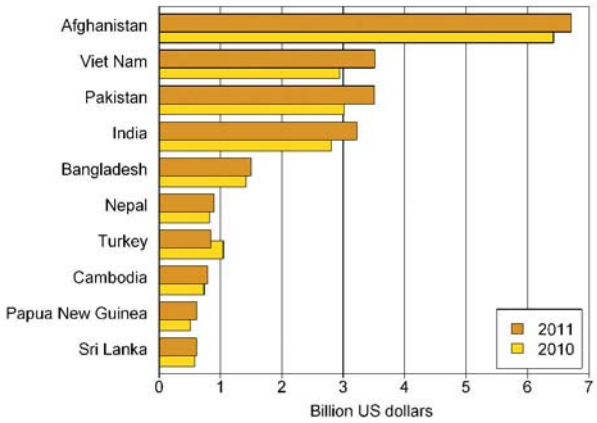
At the subregional level, ODA flows vary significantly. For example, in 2011, South and South-West Asia received about $17.6 billion, while South-East Asia received $5.5 billion and Central Asia received $2.6 billion. In 2011, ODA received by developing economies declined sharply in East and North-East Asia and in South-East Asia, while it increased modestly in South and South-West Asia and in Central Asia.

Figure G.6-4
Official development assistance received by region, Asia and the Pacific, 2010-2011



Least developed countries in the region received about $11.7 billion in 2011, recording an increase of 4.5 per cent from 2010. A detailed analysis of the statistical information at the country level reveals that Afghanistan received over $6.7 billion, which was about 25 per cent of the total ODA inflows to developing economies in the region in 2011. Other countries such as India, Pakistan and Viet Nam also received over $3 billion each, while Bangladesh received about $1.5 billion. China, the Philippines and Thailand registered a net decline in ODA, while Indonesia experienced an overall fall in ODA value from 2010. Malaysia and Tuvalu recorded a net annual increase in ODA.

Figure G.6-5
Ten largest recipients in official development assistance, Asia and the Pacific, 2010-2011



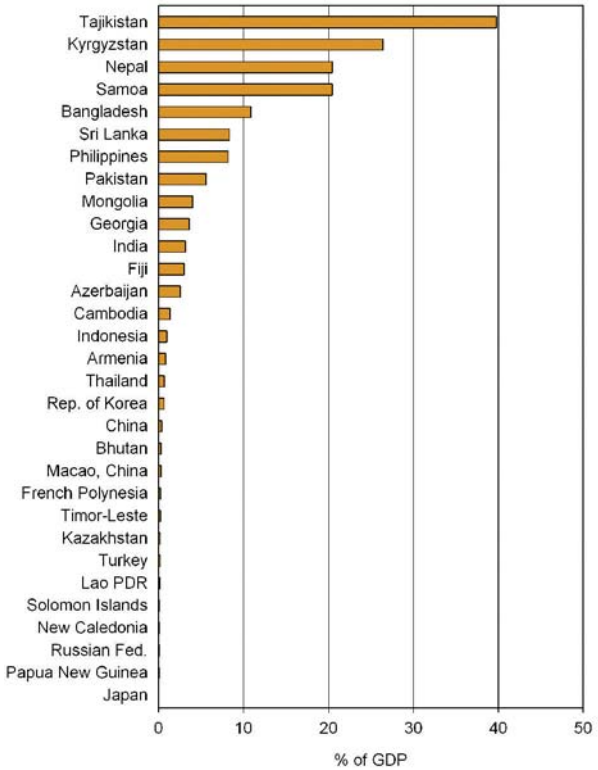
Remittances offer a complementary source of resilience for the Asian and Pacific region and are an important share of the total GDP of least developed countries. China and India received over half of the total remittances in the region in 2011.

The region's ongoing recovery from the global economic crisis is also reflected in the rebound of migrant outflows and remittances. Contrary to trends in ODA, workers' remittances to developing economies in the region increased from $125 billion in 2009 to $140 billion in 2010, or by 12.3 per cent.

At the subregional level, remittance flows vary markedly. For example, in 2011, developing economies in South and South-West Asia received about $82 billion, followed by East and North-East Asia with $26.5 billion, North and Central Asia with $6.3 billion, and the Pacific with $0.24 billion. In 2011, remittances received by developing economies increased in all subregions except the Pacific.

Least developed countries in the region received remittances of about $14.5 billion in 2011 compared with $13.6 billion in 2010. At the country level, India and China received remittances of about $73 billion in total, accounting for more than half of all remittance flows to the region. For many countries in Asia and the Pacific, the level of dependence on remittances, measured as a proportion of GDP, continues to be significant. For example, remittances to South and South-West Asia equalled about 3 per cent of the subregion's GDP, followed by the Pacific at 0.8 per cent, North and Central Asia at 0.4 per cent, and East and North-East Asia at 0.2 per cent in 2010. The share of remittances of GDP was significantly higher in least developed countries at 10.3 per cent.

Figure G.6-6
Remittances as a percentage of GDP, Asia and the Pacific, 2010



In 2010, Tajikistan was the country whose remittances constituted the highest proportion of GDP (39.8 per cent), followed by Kyrgyzstan (26.4 per cent), Nepal and Samoa (each at 20.4 per cent), Bangladesh (10.9 per cent), Sri Lanka (at 8.3 per cent), the Philippines (8.1 per cent) and Pakistan (5.6 per cent).

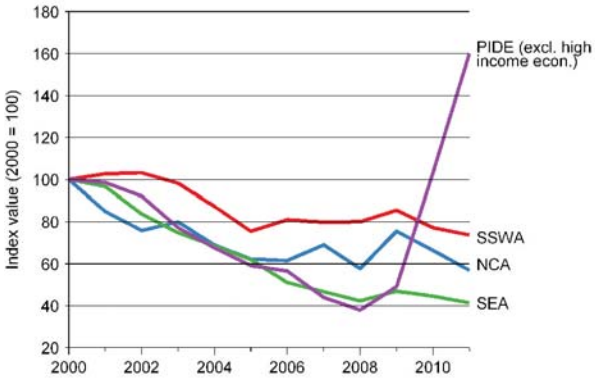
By looking at the available statistical information at the country level since 2000, 32 out of 35 countries registered increases in remittances. Also, simple calculations of the variability (coefficient of variation) of remittances show a decline for the period 2000 to 2010. Therefore, for the past decade, remittances have been a relatively stable source of foreign exchange for many countries in the region.

In Asia and the Pacific, the balance of payments position has come under pressure due to substantial external debt repayments since 2008. However, least developed countries have still had a relatively higher debt service ratio.

There was a significant overall increase in the total amount of net external debt in the region during the period 2000-2010. For example, the amount of total net external debt rose in North and Central Asia from $175 billion in 2000 to $712 billion in 2010, and in South-East Asia from $348 billion in 2000 to $540 billion in 2010. In least developed countries, net external debt increased from $30 billion in 2000 to $54 billion in 2010. In total, for developing economies in the region, there was an increase from $959 billion in 2010 to $2.73 trillion in 2010.

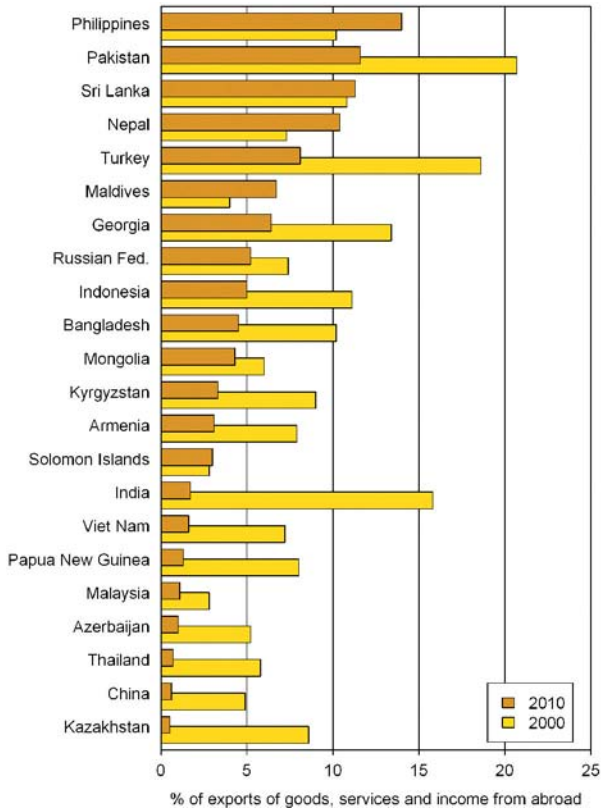
By the same token, between 2000 and 2008, the net external debt to GDP ratio declined steadily in all Asian and Pacific subregions. This was overturned, however, by the onset of the economic crisis, when the debt to GDP ratio increased in the region as a whole. In the aftermath of the crisis, this ratio subsequently declined in all subregions with the exception of the Pacific (excluding high-income economies). Substantial external debt repayments coupled with declining financial inflows have brought the balance of payments position under pressure, especially in Pacific island developing economies.

Figure G.6-7
Index of external debt as a proportion of GDP, developing economies in selected subregions, 2000-2011



General trends in external debt services paid by countries in the region show a decline in debt servicing over the last two decades. Between 2000 and 2010, the ratio of debt services to exports of goods, services and regional income received

Figure G.6-8
Debt service ratio, Asia and the Pacific, 2000-2010



from abroad had declined in 17 countries out of the 29 countries for which data were available. For example, between 2000 and 2010, the ratio declined by 14.1 percentage points in India and by 10.5 percentage points in Turkey, while it increased by 3.8 percentage points in the Philippines. However, external debt service payments were still high in 2010 in least developed countries in the region; for example, the ratio was 10 per cent in Nepal, 5.9 per cent in the Lao People's Democratic Republic and 5.4 per cent in Bangladesh.

Further reading

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Technical notes

Foreign direct investment (FDI) defined

FDI includes the three components of equity capital, reinvested earnings and intracompany loans. Equity capital is the foreign direct investor's purchase of shares of an enterprise in a country other than that of its residence. Reinvested earnings comprise the direct investor's share (in proportion to direct equity participation) of earnings not distributed as dividends by affiliates or earnings not remitted to the direct investor. Such retained profits by affiliates are reinvested. Intracompany loans or intracompany debt transactions refer to short- or long-term borrowing and lending of funds between direct investors (parent enterprises) and affiliate enterprises. Ownership or control of less than 10 per cent of a business is not considered to be FDI.

FDI inward and outward stock (million United States dollars, percentage of GDP)

Represents the value of the share of capital and reserves (including retained profits) attributable to the parent enterprise, plus the net indebtedness of affiliates to the parent enterprise. **Inward stock:** The value of the capital and reserves in the economy attributable to a parent enterprise resident in a different economy. **Outward stock:** The value of capital and reserves in another economy attributable to a parent enterprise resident in the economy. **Indicator calculations:** Percentage of GDP figures are based on GDP in current United States dollars. **Aggregate calculations:** Sum of individual country values (million United States dollars); weighted averages using GDP in United States dollars as weight (percentage of GDP). Missing data are not imputed.

FDI inflows and outflows (million United States dollars, percentage of GDP)

Capital provided (directly or through other related enterprises) by a foreign direct investor to an enterprise, or capital received by a foreign direct investor from an enterprise. **FDI inflows:** Capital provided (directly or through other related enterprises) by a foreign direct investor to an enterprise in the reporting economy. **FDI outflows:** Capital received by a foreign direct investor from entities resident in the reporting economy. **Indicator calculations:** Percentage of GDP figures are based on GDP in current United States dollars. **Aggregate calculations:** Sum of individual country values (million United States dollars); weighted averages using GDP in United States dollars as weight (percentage of GDP). Missing data are not imputed.

ODA received (million United States dollars, percentage of GDP, percentage change per annum)

ODA received in grants and loans during the reporting period, expressed in million United States dollars, as a percentage of GDP, and in percentage change. **Indicator calculations:** Percentage of GDP figures are based on GDP in current United States dollars. **Aggregate calculations:** Sum of individual country values (million United States dollars); average annual rate of change of the regional sums (percentage change per annum). Missing data are not imputed.

Workers' remittances received (million United States dollars, percentage of GDP)

Current transfers from abroad are money transferred by migrants who are employed (or intend to remain employed) for more than one year in an economy (in which they are considered residents) to persons (typically family) in the home country of the migrant. **Indicator calculations:** Percentage of GDP figures are based on GDP in current United States dollars. **Aggregate calculations:** Sum of individual country values. Missing data are not imputed.

Debt service (percentage of exports of goods, services and income from abroad)

Debt service refers to the sum of interest payment and repayment of principal on international debt, divided by exports of goods and services and income from abroad.

Net external debt (million United States dollars, percentage of GDP)

The outstanding net amount of those current, and not contingent, liabilities owed to non-residents by residents of an economy that require payments either of principal and/or interest by the debtor at some point in the future. Residents comprise the general government, individuals, private non-profit bodies and enterprises. **Indicator calculations:** Percentage of GDP figures are based on GDP in current United States dollars. **Aggregate calculations:** Sum of individual country values (million United States dollars); weighted averages using GDP in United States dollars as weight (percentage of GDP). Missing data are not imputed.

Sources

Source of FDI data: United Nations Conference on Trade and Development (UNCTAD), FDI Statistics (online database, available from http://unctadstat.unctad.org/ReportFolders/reportFolders.aspx). UNCTAD collects data through national compilers (such as central banks, various ministries and statistical offices). Data sources of FDI are complemented by corporate reports and information from the press. In the absence of primary sources, UNCTAD uses data from regional and international organizations and research institutions. Data are continually updated, depending on availability and resources. **Data obtained:** 31 July 2013.

Source of ODA data: Organisation for Economic Co-operation and Development, Development Database on Aid from Development Assistance Committee Members. The Development Assistance Committee publishes statistics and reports on aid and other

resource flows to developing economies, based principally on reporting by Development Assistance Committee members, multilateral organizations and other donors. **Data obtained:** 10 January 2013.

Source of workers' remittances data: International Monetary Fund (IMF), Balance of Payments Statistics (CD-ROM, May 2012). IMF balance of payments data are presented in accordance with the standard components of the *Balance of Payments Manual,* 5th ed. (BPM5; available from www.imf.org/external/pubs/ft/bopman/bopman.pdf). IMF data conversion work has made possible the presentation in the BPM5 format of both historical data and more recent statistics reported by member countries. All balance of payments data are expressed in United States dollars. The database includes IMF country reports with data in national currencies or standard daily rates in addition to the dollar equivalents. IMF provides estimates in place of missing data. The estimation procedure relies largely on the World Economic Outlook Database. **Data obtained:** 24 August 2012.

Source of debt service data: Millennium Indicators Database, sourced from the World Bank. The World Bank bases its estimates of country-level data on data produced and provided by countries. Adjustments are made to some data for international comparability and compliance with internationally agreed standards, definitions and classifications. **Data obtained:** 13 July 2012.

Source of net external debt data: WDI. The World Bank compiles country-level debt data. **Data obtained:** 21 February 2013.

G.6.1 Foreign direct investment

	FDI inward stock		FDI inflows				FDI outward stock		FDI outflows			
	Million US dollars	% of GDP	Million US dollars		% of GDP		Million US dollars	% of GDP	Million US dollars		% of GDP	
	2011	2011	2011	2012	2011	2012	2011	2011	2011	2012	2011	2012
East and North-East Asia	**2 236 617**	**15.4**	**234 019.1**	**213 329.7**	**1.6**	**1.4**	**2 536 649**	**18.7**	**307 354**	**323 928**	**2.1**	**2.1**
China	711 802	9.9	123 985.0	121 080.0	1.7	1.6	365 981	5.8	74 654	84 220	1.0	1.1
DPR Korea	1 530	12.4	56.0	79.0	0.5							
Hong Kong, China	1 138 365	467.9	96 125.4	74 584.2	39.5	30.2	1 045 920	443.1	95 885	83 985	39.4	34.0
Japan	225 787	3.8	-1 755.5	1 730.8	0.0	0.0	962 790	17.8	107 601	122 551	1.8	2.0
Macao, China	17 991	49.4	647.2	1 500.0	1.8		744	2.3	120	150	0.3	
Mongolia	9 435	110.1	4 714.6	4 451.8	55.0	46.3	1 875	25.8	94	44	1.1	0.5
Republic of Korea	131 708	11.8	10 246.5	9 904.0	0.9	0.9	159 339	15.2	28 999	32 978	2.6	2.9
South-East Asia	**1 077 445**	**48.7**	**109 044.0**	**111 336.3**	**4.9**	**4.8**	**495 704**	**27.7**	**58 957**	**60 592**	**2.7**	**2.7**
Brunei Darussalam	12 452	76.1	1 208.3	850.0	7.4	5.1	691		10	8	0.1	0.0
Cambodia	6 850	53.4	901.7	1 557.1	7.0	11.4	377	3.1	29	31	0.2	0.2
Indonesia	173 064	20.4	19 241.3	19 852.6	2.3	2.2	9 502	1.3	7 713	5 423	0.9	0.6
Lao PDR	2 521	30.8	300.8	294.4	3.7	3.3	6	0.1	0	-21	0.0	-0.2
Malaysia	114 555	39.8	12 197.6	10 073.9	4.2	3.3	106 217	42.5	15 249	17 115	5.3	5.6
Myanmar	9 123	16.5	2 200.0	2 243.0	4.0	3.8						
Philippines	27 581	12.3	1 816.0	2 797.0	0.8	1.2	6 590	3.2	539	1 845	0.2	0.8
Singapore	518 625	199.6	55 922.7	56 650.9	21.5	21.5	339 095	145.2	26 249	23 080	10.1	8.8
Thailand	139 735	37.8	7 778.7	8 607.5	2.1	2.2	33 226	10.4	8 217	11 911	2.2	3.0
Timor-Leste	161	2.9	47.1	42.0	0.8	0.7						
Viet Nam	72 778	58.9	7 430.0	8 368.0	6.0	6.4			950	1 200	0.8	0.9
South and South-West Asia	**411 195**	**11.4**	**60 277.6**	**45 929.7**	**1.7**	**1.2**	**140 175**	**4.6**	**15 301**	**13 292**	**0.4**	**0.4**
Afghanistan	1 475	7.8	83.4	93.8	0.4	0.4						
Bangladesh	6 166	5.8	1 136.4	990.0	1.1	0.9	107	0.1	13	53	0.0	0.0
Bhutan	177	10.3	10.4	15.9	0.6	0.8						
India	201 724	10.6	36 190.4	25 542.8	1.9	1.3	111 257	6.0	12 456	8 583	0.7	0.4
Iran (Islamic Rep. of)	32 443	6.2	4 150.0	4 869.9	0.8	1.0	2 915		360	430	0.1	0.1
Maldives	1 372	66.9	256.5	284.0	12.5	13.4						
Nepal	348	1.9	95.5	92.0	0.5	0.5						
Pakistan	21 876	10.5	1 327.0	846.7	0.6	0.4	1 432	0.8	62	73	0.0	0.0
Sri Lanka	5 308	9.0	981.1	775.5	1.7	1.2	430	0.8	60	80	0.1	0.1
Turkey	140 305	18.1	16 047.0	12 419.0	2.1	1.6	24 034	3.0	2 349	4 073	0.3	0.5
North and Central Asia	**600 216**	**27.1**	**77 598.0**	**73 713.0**	**3.5**	**3.2**	**389 254**	**21.9**	**72 260**	**54 113**	**3.4**	**2.4**
Armenia	5 046	49.8	525.5	489.1	5.2	4.5	163	1.7	78	16	0.8	0.1
Azerbaijan	9 113	14.4	1 466.6	2 004.6	2.3	3.1	6 323	12.1	554	1 194	0.9	1.8
Georgia	9 305	64.8	1 048.2	866.1	7.3	5.7	742	5.9	147	263	1.0	1.7
Kazakhstan	93 624	50.2	13 903.0	14 022.1	7.5	7.2	19 924	12.6	4 630	1 582	2.5	0.8
Kyrgyzstan	1 274	21.5	693.5	372.2	11.7	6.3	2	0.0	0	0	0.0	0.0
Russian Federation	457 474	24.6	55 084.0	51 416.0	3.0	2.7	362 101	23.5	66 851	51 058	3.6	2.7
Tajikistan	993	15.2	11.1	289.9	0.2	4.1						
Turkmenistan	16 627	64.6	3 399.0	3 159.0	13.2	11.1						
Uzbekistan	6 761	14.8	1 467.0	1 094.0	3.2	2.2						
Pacific	**590 220**	**34.4**	**71 649.4**	**62 023.7**	**4.2**	**3.4**	**405 041**	**29.4**	**17 735**	**16 234**	**1.0**	**0.9**
American Samoa												
Australia	499 663	33.0	65 297.0	56 958.9	4.3	3.6	385 470	29.8	14 285	16 141	0.9	1.0
Cook Islands	42	15.4							809	454	294.2	
Fiji	2 456	64.4	417.2	267.9	10.9	6.9	38	1.2	1	2	0.0	0.0
French Polynesia	450	6.3	123.1	87.4	1.7		238		28	42	0.4	
Guam												
Kiribati	23	12.8	-1.8	-1.7	-1.0	-0.9	4	2.8				
Marshall Islands			-141.6	38.4	-74.9	19.9			41	13	21.8	6.9
Micronesia (F.S.)			0.8	0.8	0.3	0.2						
Nauru												
New Caledonia	7 315	74.2	1 702.2	1 587.8	17.3				40	58	0.4	
New Zealand	73 917	45.4	4 320.4	2 911.1	2.7	1.7	19 007		2 525	-489	1.6	-0.3
Niue	7								-1			
Northern Mariana Islands	0		-1.1	4.6					0	0		
Palau	131	57.2	6.2	4.6	2.7							
Papua New Guinea	4 567	36.3	-309.2	28.8	-2.5	0.2	226	2.1	1		0.0	
Samoa	60	9.0	12.3	21.5	1.8	3.2	2	0.3	1	9	0.1	1.3
Solomon Islands	869	103.7	146.4	69.3	17.5	7.8	33	4.7	4	3	0.4	0.3
Tonga	98	21.6	19.2	6.6	4.2	1.4			1	1	0.1	0.2
Tuvalu	37	101.3										
Vanuatu	584	75.1	58.2	37.7	7.5	4.7	23	3.2	1	1	0.1	0.1
Asia and the Pacific	**4 915 693**	**20.3**	**552 588.1**	**506 332.4**	**2.3**	**2.0**	**3 966 823**	**18.7**	**471 607**	**468 158**	**2.0**	**1.9**
Developed countries	799 367	10.6	67 861.9	61 600.8	0.9	0.8	1 367 266	20.2	124 411	138 203	1.6	1.8
Developing countries	4 116 326	24.7	484 726.2	444 731.6	2.9	2.5	2 599 557	17.9	347 196	329 956	2.1	1.9
LLDC	147 393	36.9	26 670.3	26 378.7	6.7	6.2	28 293	11.9	5 357	2 815	1.9	1.0
LDC	28 395	12.4	4 990.3	5 455.1	2.2	2.2			48	74		0.0
ASEAN	1 077 284	48.8	108 996.9	111 294.3	4.9	4.8	495 704	27.7	58 957	60 592	2.7	2.7
ECO	324 490	17.5	42 547.7	39 171.2	2.3	2.1	54 630	4.5	7 956	7 352	0.5	0.4
SAARC	238 447	10.3	40 080.6	28 640.8	1.7	1.2	113 226	5.1	12 591	8 789	0.6	0.4
Central Asia	142 742	39.9	22 514.0	22 297.0	6.3	5.9	27 153	11.5	5 409	3 055	1.9	1.0
Pacific island dev. econ.	16 640	45.1	2 032.0	2 153.7	5.5	2.2	565		925	582	2.5	2.7
Low income econ.	27 759	11.7	5 177.6	5 717.0	2.2	2.4			42	83		0.0
Lower middle income econ.	544 394	15.7	75 300.8	65 905.2	2.2	1.8	132 324	4.2	22 148	17 533	0.6	0.5
Upper middle income econ.	1 717 217	15.2	238 273.6	227 940.5	2.1	1.9	920 721	10.0	172 865	171 583	1.5	1.4
High income econ.	2 626 273	28.4	233 836.1	206 769.6	2.5	2.2	2 913 292	34.5	275 743	278 505	3.0	3.0
Africa	**569 559**	**30.1**	**47 598.1**	**50 041.1**	**2.6**	**2.6**	**126 387**	**7.5**	**5 376**	**14 296**	**0.3**	**0.8**
Europe	**8 238 470**	**43.1**	**491 544.5**	**289 249.1**	**2.6**	**1.5**	**10 461 730**	**59.4**	**609 821**	**386 351**	**3.2**	**2.0**
Latin America and Carib.	**2 048 101**	**36.0**	**249 431.8**	**243 861.0**	**4.4**	**3.0**	**1 005 859**	**10.2**	**105 154**	**103 045**	**1.9**	**0.9**
North America	**4 108 346**	**24.6**	**268 213.8**	**213 123.1**	**1.6**	**1.2**	**5 173 239**	**31.8**	**446 168**	**383 030**	**2.7**	**2.2**
World	**20 438 199**	**29.3**	**1 651 510.9**	**1 350 925.7**	**2.4**	**1.8**	**21 168 489**	**32.3**	**1 678 035**	**1 390 956**	**2.4**	**1.9**

G.6.2 Official development assistance and workers' remittances

	ODA received								Workers remittances received			
	Million US dollars			% change per annum		% of GDP			Million US dollars		% of GDP	
	2009	2010	2011	2010	2011	2009	2010	2011	2009	2010	2009	2010
East and North-East Asia	**1 565.7**	**1 026.9**	**-337.4**						**20 635**	**26 521**	**0.2**	**0.2**
China	1 129	646	-796	-42.8		0.0	0.0	0.0	13 693	19 804	0.3	0.3
DPR Korea	65	79	118	20.9	50.3	0.5	0.6	1.0				
Hong Kong, China												
Japan									1	2	0.0	0.0
Macao, China									65	69	0.3	0.2
Mongolia	371	302	340	-18.6	12.5	8.1	4.9	4.0	192	248	4.2	4.0
Republic of Korea									6 684	6 400	0.8	0.6
South-East Asia	**6 865**	**6 649**	**5 463**	**-3.2**	**-17.8**	**0.5**	**0.4**	**0.3**		**25 444**		**2.0**
Brunei Darussalam												
Cambodia	721	734	792	1.7	8.0	6.9	6.5	6.2	140	151	1.4	1.3
Indonesia	1 047	1 393	415	33.1	-70.2	0.2	0.2	0.0	6 618	6 735	1.2	1.0
Lao PDR	419	414	397	-1.2	-4.1	7.5	6.1	4.8	10	7	0.2	0.1
Malaysia	143	2	31	-98.6	1 387.4	0.1	0.0	0.0				
Myanmar	356	355	376	-0.2	5.9	1.1	0.8	0.7				
Philippines	309	531	-192	71.8		0.2	0.3	-0.1	15 141	16 242	9.0	8.1
Singapore												
Thailand	-78	-11	-153			0.0	0.0	0.0	1 939	2 302	0.7	0.7
Timor-Leste	216	292	284	34.7	-2.7	6.6	7.1	5.1	6	7	0.2	0.2
Viet Nam	3 732	2 940	3 514	-21.2	19.5	3.8	2.8	2.8				
South and South-West Asia	**15 900**	**16 469**	**17 571**	**3.6**	**6.7**	**0.6**	**0.5**	**0.5**	**74 986**	**81 951**	**3.3**	**3.0**
Afghanistan	6 235	6 426	6 711	3.1	4.4	49.6	40.0	35.4				
Bangladesh	1 226	1 415	1 498	15.4	5.9	1.4	1.4	1.4	10 508	10 836	11.8	10.9
Bhutan	125	131	144	4.5	9.8	9.9	8.3	8.3	3	4	0.2	0.3
India	2 500	2 806	3 220	12.2	14.7	0.2	0.2	0.2	48 596	53 044	3.6	3.2
Iran (Islamic Rep. of)	92	121	102	31.5	-15.9	0.0	0.0	0.0				
Maldives	33	111	46	233.6	-58.5	1.7	5.3	2.2				
Nepal	854	818	892	-4.2	9.0	6.7	5.0	4.8	2 858	3 336	22.4	20.4
Pakistan	2 769	3 013	3 509	8.8	16.4	1.8	1.7	1.7	8 701	9 667	5.6	5.6
Sri Lanka	703	580	611	-17.5	5.3	1.7	1.2	1.0	3 330	4 116	7.9	8.3
Turkey	1 362	1 047	839	-23.1	-19.8	0.2	0.1	0.1	990	948	0.2	0.1
North and Central Asia	**2 913.5**	**2 443.6**	**2 563.2**						**5 278**	**6 321**	**0.4**	**0.4**
Armenia	526	343	374	-34.8	9.2	6.1	3.7	3.7	86	72	1.0	0.8
Azerbaijan	232	159	293	-31.4	84.2	0.5	0.3	0.5	1 182	1 338	2.7	2.5
Georgia	907	625	550	-31.1	-12.1	8.4	5.4	3.8	317	417	2.9	3.6
Kazakhstan	298	224	214	-24.7	-4.4	0.3	0.2	0.1	193	221	0.2	0.1
Kyrgyzstan	313	380	523	21.4	37.5	6.7	7.9	8.8	983	1 266	21.0	26.4
Russian Federation									775	763	0.1	0.1
Tajikistan	408	437	355	7.0	-18.8	8.2	7.7	5.4	1 742	2 245	35.0	39.8
Turkmenistan	40	45	38	12.1	-13.9	0.2	0.2	0.1				
Uzbekistan	190	231	216	21.7	-6.5	0.6	0.6	0.5				
Pacific	**1 208.3**	**1 589.3**	**1 742.3**									
American Samoa												
Australia												
Cook Islands	7	13	25	82.1	88.6	3.6	5.6	9.2				
Fiji	71	76	75	7.6	-1.5	2.5	2.4	2.0	105	95	3.6	3.0
French Polynesia									16	13	0.2	0.2
Guam												
Kiribati	27	23	64	-15.9	180.3	21.9	15.6	35.1				
Marshall Islands	59	91	82	54.4	-9.2	35.6	51.1	43.5				
Micronesia (F.S.)	121	125	134	3.5	6.9	43.2	42.1	42.0				
Nauru	24	28	38	15.7	35.1	44.3	43.8	52.4				
New Caledonia									6	5	0.1	0.1
New Zealand												
Niue	9	15	21	69.3	37.3							
Northern Mariana Islands												
Palau	35	26	28	-25.6	4.9	17.4	12.4	12.1				
Papua New Guinea	412	511	612	24.2	19.7	5.1	5.3	4.9	2	1	0.0	0.0
Samoa	77	147	101	90.8	-31.4	14.8	24.7	15.2	119	122	22.8	20.4
Solomon Islands	206	340	334	65.4	-2.0	34.4	50.4	39.8	0	0	0.0	0.1
Tonga	39	70	94	79.5	33.0	12.0	18.9	20.7	67		20.6	
Tuvalu	17	13	43	-23.7	220.0	65.5	41.6	116.7				
Vanuatu	103	108	92	5.0	-15.0	17.5	15.9	11.8				
Asia and the Pacific	**30 677**	**30 291**	**29 243**						**125 067**	**140 473**	**0.8**	**0.8**
Developed countries									1	2	0.0	0.0
Developing countries	28 452	28 177	27 003	-1.0	-4.2	0.3	0.3	0.2	125 066	140 472	1.2	1.1
LLDC	10 011	9 910	10 497	-1.0	5.9	3.8	3.0	2.6	7 248	8 737	3.6	3.5
LDC	10 584	11 217	11 727	6.0	4.5	6.2	5.6	5.1	13 644	14 463	11.1	10.3
ASEAN	6 649	6 357	5 179	-4.4	-18.5	0.5	0.4	0.3				
ECO	11 938	12 083	12 800	1.2	5.9	0.9	0.7	0.7	13 791	15 685	1.5	1.4
SAARC	14 446	15 301	16 630	5.9	8.7	0.9	0.8	0.7	73 996	81 003	4.5	4.0
Central Asia	2 913	2 444	2 563	-16.1	4.9	1.2	0.8	0.7	4 503	5 558	2.4	2.4
Pacific island dev. econ.	1 208	1 589	1 742						315	236	1.1	0.8
Low income econ.	10 179	10 644	11 266	4.6	5.8	5.7	5.1	4.8	16 231		13.3	
Lower middle income econ.	14 929	15 093	14 968	1.1	-0.8	0.6	0.5	0.4	83 293	90 776	3.6	3.2
Upper middle income econ.	3 303	2 383	685	-27.9	-71.3	0.0	0.0	0.0	18 772	25 376	0.3	0.3
High income econ.									6 771	6 488	0.1	0.1
Africa	**47 808**	**47 976**	**51 261**	**0.4**	**6.8**	**2.9**	**2.5**	**2.4**				
Europe												
Latin America and Carib.	**9 022**	**10 718**	**11 582**	**18.8**	**8.1**	**0.2**	**0.2**	**0.2**	**52 938**	**53 294**	**1.4**	**1.1**
North America												
World	**126 977**	**131 108**	**136 437**									

G.6.3 Debt

	Debt service			Net external debt				Net external debt			
	% of exports of goods, services and income from abroad			Million US dollars				% of GDP			
	2000	2009	2010	2000	2009	2010	2011	2000	2009	2010	2011
East and North-East Asia											
China	4.9	0.6	0.6	145 648	443 155	558 344	685 418	12.2	8.7	9.4	9.5
DPR Korea											
Hong Kong, China											
Japan											
Macao, China											
Mongolia	6.0	4.2	4.3	960	2 215	2 506	2 564	84.4	48.3	40.4	29.9
Republic of Korea											
South-East Asia				**347 746**	**424 849**	**501 190**	**540 192**	**67.7**	**31.8**	**30.2**	**28.0**
Brunei Darussalam											
Cambodia	1.4	0.8		2 648	3 523	3 833	4 336	72.2	33.9	34.1	33.8
Indonesia	11.1	7.3	5.0	143 655	179 394	195 172	213 541	87.1	33.2	27.6	25.2
Lao PDR	7.8	5.9		2 520	5 737	5 655	6 158	151.3	102.7	83.9	75.1
Malaysia	2.8	3.1	1.1	41 946	69 784	85 126	94 468	43.0	34.5	34.5	32.8
Myanmar	1.1			5 832	7 702	7 789	7 765	80.2	23.4	18.5	14.0
Philippines	10.2	12.3	14.0	58 456	64 414	73 720	76 043	72.1	38.3	36.9	33.8
Singapore											
Thailand	5.8	0.8	0.7	79 830	61 209	80 551	80 039	63.3	21.9	23.6	21.6
Timor-Leste											
Viet Nam	7.2	1.8	1.6	12 859	33 085	49 343	57 841	41.3	34.0	46.4	46.8
South and South-West Asia				**286 961**	**659 267**	**723 779**	**780 259**	**29.3**	**25.0**	**22.6**	**21.6**
Afghanistan		0.7	0.4		2 470	2 423	2 623		19.6	15.1	13.8
Bangladesh	10.2	5.4	4.5	15 596	24 619	25 752	27 043	34.3	27.6	25.8	25.5
Bhutan				212	761	907	1 035	48.2	60.2	57.2	60.0
India	15.8	2.4	1.7	101 130	256 229	290 351	334 331	21.6	19.2	17.3	17.6
Iran (Islamic Rep. of)				8 024	18 265	20 041	19 113	7.7	5.0	4.7	3.7
Maldives	4.0	7.6	6.7	206	981	1 007	983	25.7	50.5	48.5	47.9
Nepal	7.3	10.0	10.4	2 878	3 778	3 797	3 956	50.2	29.6	23.3	21.4
Pakistan	20.7	11.9	11.6	32 954	56 329	58 488	60 182	46.2	36.2	33.7	28.8
Sri Lanka	10.8	13.2	11.3	9 173	17 857	21 153	23 984	54.9	42.4	42.7	40.5
Turkey	18.6	8.3	8.1	116 787	277 978	299 859	307 007	43.8	45.2	41.0	39.6
North and Central Asia				**174 520**	**623 797**	**667 781**	**711 984**	**56.5**	**42.6**	**37.5**	**32.1**
Armenia	7.9	3.5	3.1	1 010	5 023	6 241	7 383	52.8	58.1	67.4	72.8
Azerbaijan	5.2	1.1	1.0	1 585	4 771	7 209	8 427	30.1	10.8	13.6	13.3
Georgia	13.4	6.8	6.4	1 826	8 556	9 519	11 124	59.7	79.5	81.8	77.4
Kazakhstan	8.6	0.4	0.5	12 890	112 027	119 190	124 437	70.5	97.2	80.5	66.7
Kyrgyzstan	9.0	3.3	3.3	1 938	4 119	4 114	5 486	141.4	87.8	85.8	92.7
Russian Federation	7.4	5.6	5.2	146 547	479 036	510 152	542 977	56.5	39.2	34.3	29.2
Tajikistan		6.0	3.8	1 141	2 666	3 082	3 323	132.6	53.5	54.6	50.9
Turkmenistan				2 609	661	529	445	52.9	3.5	2.6	1.7
Uzbekistan				4 975	6 937	7 745	8 382	36.2	21.0	19.8	18.4
Pacific											
American Samoa											
Australia											
Cook Islands											
Fiji	2.4	1.7		182	536	555	861	10.5	18.6	17.5	22.6
French Polynesia											
Guam											
Kiribati											
Marshall Islands											
Micronesia (F.S.)											
Nauru											
New Caledonia											
New Zealand											
Niue											
Northern Mariana Islands											
Palau											
Papua New Guinea	8.0	1.8	1.3	2 305	1 787	5 965	12 582	65.9	22.0	61.5	100.0
Samoa		4.7	5.2	139	253	325	368	60.2	48.4	54.6	55.2
Solomon Islands	2.8	3.3	3.0	156	172	231	256	46.2	28.8	34.2	30.5
Tonga				74	115	154	191	39.0	35.2	41.2	42.1
Tuvalu											
Vanuatu				96	155	173	202	35.2	26.3	25.4	25.9
Asia and the Pacific											
Developed countries											
Developing countries				958 786	2 156 302	2 461 003	2 734 876	31.9	20.5	19.5	18.2
LLDC				32 717	151 166	163 399	174 222	59.1	56.8	50.0	43.6
LDC				30 076	49 171	50 885	53 744	46.2	29.6	26.0	24.0
ASEAN				347 746	424 849	501 190	540 192	67.7	31.8	30.2	28.0
ECO				182 903	486 222	522 681	539 427	37.6	35.4	32.3	29.0
SAARC				162 149	363 024	403 879	454 138	26.7	22.0	19.8	19.6
Central Asia				27 973	144 761	157 630	169 008	56.6	60.2	54.1	47.2
Pacific island dev. econ.											
Low income econ.				30 033	48 878	50 791	54 533	46.7	29.2	25.9	24.3
Lower middle income econ.				372 680	639 556	728 203	817 028	43.3	26.5	24.2	23.6
Upper middle income econ.				556 073	1 467 867	1 682 009	1 863 315	26.8	18.5	17.9	16.5
High income econ.											
Africa				**300 533**	**338 622**	**363 950**	**388 822**	**52.5**	**24.3**	**22.4**	**21.2**
Europe											
Latin America and Carib.				**760 570**	**947 123**	**1 087 026**	**1 233 484**	**36.6**	**23.7**	**21.9**	**22.2**
North America											
World											

G.7. Tourism

Tourism is a very important economic sector in the Asian and Pacific region as it generates employment in many related sectors (from construction to agriculture or telecommunications) and contributes to the overall economic growth. In some countries, the role of tourism in national economy is vital. Tourism also has impacts on society and the environment. These dynamics have turned tourism into a key driver for socioeconomic progress. Over recent years, the region has become a major tourist destination. It is important to develop the tools for managing tourism properly in order to enhance its benefits and restrict any negative effects.

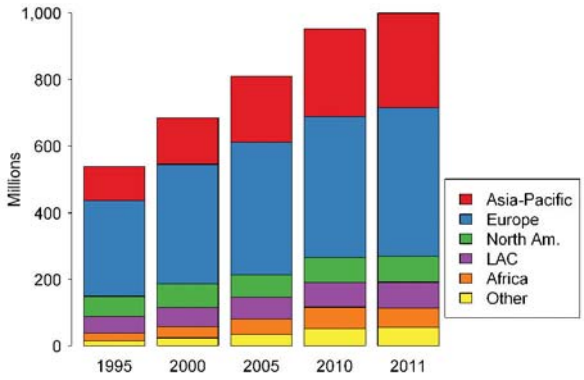
Among the world's regions, the Asian and Pacific region has become a major tourist destination over recent decades, and many countries have seen large increases in tourism arrivals in recent years.

Although Europe remains the region that receives the largest number of tourism arrivals, with 44.5 per cent of total tourism arrivals worldwide, Asia and the Pacific receives the second largest number of tourism arrivals, with 28.4 per cent of the world's total. In 2011, 283.9 million arrivals were recorded, which is an increase of 21.5 million tourism arrivals from 2010. Between 2005 and 2011 the average annual growth in tourism arrivals was 6 per cent. Within the region in 2011, East and North-East Asia had the highest number of arrivals thanks to China, followed by South-East Asia.

Several countries reported double-digit figures in the growth rate of tourism arrivals between 2010 and 2011, including Bhutan (61 per cent), Sri Lanka (31 per cent), Myanmar (26 per cent) and Nepal (22 per cent). Both the Republic of Korea and Hong Kong, China, posted an 11 per cent increase in arrivals. In absolute terms, Thailand recorded the largest increase, with over 3 million more tourism arrivals for each year between 2010 and 2012. The Russian Federation also saw large increases, with 2.6 million more tourism arrivals in 2011 than in 2010, and over 3 million more in 2012 than in 2011. Turkey also had an increase of 2.6 million tourism arrivals between 2010 and 2011 because the severe depreciation of the Turkish lira in 2011 made Turkey more attractive for tourists.

More modest growth was seen in China, with a 3 per cent increase. The Pacific saw only a slight increase of 1 per cent between 2010 and 2011, with Australia, the largest destination, recording zero growth, and New Zealand a modest 3 per cent. In 2011, Japan recorded a 28 per cent drop in tourism arrivals and a decrease of 18 per cent in inbound tourism expenditure.

Figure G.7-1
Inbound tourism arrivals, world regions, 1995-2011



Asia and the Pacific has the second-highest inbound tourism expenditure of any region in the world.

In 2011, Asia and the Pacific earned $362.6 billion in inbound tourism expenditure, which is $51.8 billion more than in 2010 and equal to 28.9 per cent of the total global inbound expenditure. Europe remained the region with the highest inbound expenditure, with 40 per cent of the world's total. Between 2010 and 2011, all world regions had positive growth in their inbound expenditures, with the exception of Africa, where a reduction of $1.8 billion, or a 4 per cent decrease, was recorded.

Although Japan and Mongolia faced a decrease between 2010 and 2011 in their inbound expenditures, in 2011 East and North-East Asia was the subregion that generated the highest inbound expenditure, equal to 43 per cent of the

region's total. This subregion is followed by South-East Asia with 24 per cent, where Myanmar observed an impressive growth in inbound expenditure of 222 per cent between 2010 and 2011, while Timor-Leste experienced a reduction of 19.2 per cent during the same time period. The most probable reason for the impressive growth in Myanmar is related to reform changes occurring in the country.

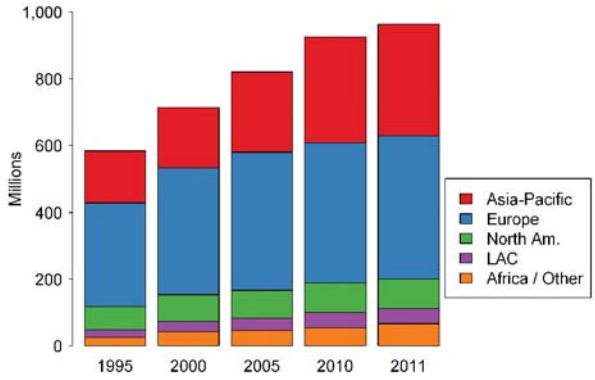
Asia and the Pacific has become an increasingly important outbound tourism market.

The Asian and Pacific region is an increasingly important outbound tourism market. Although Europe was the largest source of outbound tourism departures in 2011, with 45.3 per cent of the world's total, Asia and the Pacific was the world's second largest source region, with 34.3 per cent.

At the subregional level, East and North-East Asia was the major source of outbound tourism from the region, partially because of the growing size of the prospering middle class in China. In 2009, South-East Asia was the second largest source of outbound tourism from the region. In Japan, there was little growth in outbound tourism between 2010 and 2011, mainly due to the impact of the earthquake and tsunami and the resulting economic slump.

In 2011, the economies in the region with the largest number of outbound tourism departures were Hong Kong, China (84.8 million); China (70.3 million); Japan (16.9 million); India (14.0 million) and the Republic of Korea (12.7 million). Economies that registered impressive growth in their outbound tourism departures between 2010 and 2011 were Cambodia (41 per cent), Armenia (27 per cent), China (22 per cent) and Macao, China (21 per cent), whereas Turkey (-4 per cent) and Thailand (-1 per cent) observed a reduction in the same period of time. With rising levels of disposable income, Cambodia, Armenia, China and Macao, China, have shown rapid growth; however, the large majority of outbound tourism takes place within travellers' own regions. The drop in outbound tourism from Turkey is certainly explained to a large extent by the severe depreciation of the Turkish lira against all major trading currencies but also compared with the currencies of developing economies. The persistent flooding during the 2011 monsoon season is the most likely reason for the drop in outbound tourism from Thailand.

Figure G.7-2
Outbound tourism departures, world regions, 1995-2011



In 2011, Asia and the Pacific ranked second in the world in outbound tourism expenditure, after Europe.

In 2011, the Asian and Pacific region generated $314.6 billion in outbound tourism expenditure, which was 28.3 per cent of the global total, and an increase of $43.9 billion from 2010. After Europe (41.5 per cent of the global total in 2011), the region ranked second in outbound tourism expenditure. East and North-East Asia had 45.4 per cent of outbound expenditure from the region, followed by South-East Asia with 16.7 per cent.

China has become a leading country in outbound expenditure, spending $79 billion in 2011, an increase of 32 per cent, or an additional $19 billion, from the previous year and equal to 1.1 per cent of its GDP. Other countries with impressive growth rates in their outbound tourism expenditures between 2010 and 2011 are Azerbaijan (107.7 per cent), Kyrgyzstan (42.2 per cent), Pakistan (35.1 per cent), Bhutan (34.9 per cent), India (30.1 per cent), Mongolia (26.6 per cent) and Cambodia (24.3 per cent). Tajikistan (-48.0 per cent), Nepal (-20.5 per cent), Samoa (-18.3 per cent) and Timor-Leste (-11.8 per cent) registered decreases in their outbound tourism expenditures during the same period of time.

Box G.7-1
The role of tourism in development

The Group of 20 recently recognized the role of travel and tourism as "a vehicle for job creation, economic growth and development" and made the commitment to "work towards developing travel facilitation initiatives in support of job creation, quality work, poverty reduction and global growth."[a]

"The future we want,"[b] the outcome document of the 2012 United Nations Conference on Sustainable Development (also known as Rio+20), emphasized the significant contribution that well-designed and well-managed tourism can make to advancing the three dimensions of sustainable development: economic, social and environmental. The document states that tourism "has close linkages to other sectors, and can create decent jobs and generate trade opportunities. We recognize the need to support sustainable tourism activities and relevant capacity-building that promote environmental awareness, conserve and protect the environment, respect wildlife, flora, biodiversity, ecosystems and cultural diversity, and improve the welfare and livelihoods of local communities by supporting their local economies and the human and natural environment as a whole. We call for enhanced support for sustainable tourism activities and relevant capacity-building in developing countries in order to contribute to the achievement of sustainable development."

[a] See G20 Leaders Declaration of the Los Cabos Summit, Los Cabos, Mexico, 19 June 2012. Available from www.g20.utoronto.ca/2012/2012-0619-loscabos.html.
[b] See General Assembly resolution 66/288, annex. paras. 130 -131.

Further reading

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————. "Positioning tourism in economic policy: evidence and some proposals", paper presented at the 2nd T.20 Ministers Meeting, Republic of Korea, October 2010. Available from http://dtxtq4w60xqpw.cloudfront.net/sites/all/files/docpdf/t20korea.pdf.

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United Nations World Tourism Organization and Tourism Australia. *Key Outbound Tourism Markets in South-East Asia: Indonesia, Malaysia, Singapore, Thailand and Vietnam*. Madrid, 2013.

Technical notes

Tourism defined

Tourism refers to the activity of visitors, and a visitor is classified as a tourist (or overnight visitor) if his or her trip includes an overnight stay, or as a same-day visitor (or excursionist) otherwise.

Indicators

Inbound tourism – arrivals, and outbound tourism – departures (thousands)

Inbound tourism (arrivals): Comprises the activities of a non-resident visitor within the country of reference on an inbound tourism trip. The corresponding expenditure of such a visitor is identified as inbound tourism expenditure. Data for inbound tourism of most countries in Asia and the Pacific relate to arrivals of non-resident tourists at national borders, except for data for Australia, Georgia, Japan, New Zealand, the Republic of Korea and Viet Nam, which relate to arrivals of non-resident visitors at national borders.

Outbound tourism (departures): Outbound tourism comprises the activities of a resident visitor outside the country of reference (either as part of an outbound tourism trip or as part of

a domestic tourism trip). The corresponding expenditure of such a visitor is identified as outbound tourism expenditure. Departures data measure the flows of resident visitors leaving the country of reference. Departures are not necessarily equal to the number of arrivals reported by international destinations for the country of reference. **Aggregate calculations:** Sum of individual country values. Missing data are imputed.

Inbound and outbound tourism expenditure (million United States dollars)

The 2008 International Recommendations for Tourism Statistics consider that "tourism industries and products" includes transport of passengers. Consequently, a better estimate of tourism-related expenditure by inbound and outbound visitors in an international scenario would be, in terms of balance of payments, the value of the travel item plus that of the passenger transport item. Nevertheless, users should be aware that balance of payments estimates include, in addition to expenditures associated with visitors, those related to other types of travellers (these might be substantial in some countries; for instance, long-term students or patients, or border and seasonal workers). **Inbound expenditure:** Tourism expenditure refers to the amount paid for the acquisition of consumption goods and services, as well as valuables, for own use or to give away, for and during tourism trips. Inbound tourism expenditure refers to the tourism expenditure of a non-resident visitor within the economy of reference. Expenditures associated with the activities of international visitors have been traditionally identified with the travel item of the balance of payments: in the case of inbound tourism, those expenditures associated with inbound visitors are registered as "credits" in the balance of payments and refer to "travel receipts." **Outbound expenditure:** Tourism expenditure refers to the amount paid for the acquisition of consumption goods and services, as well as valuables, for own use or to give away, for and during tourism trips. Outbound tourism expenditure refers to the tourism expenditure of a resident visitor outside the economy of reference. Expenditures associated with the activities of visitors have been traditionally identified with the travel item of the balance of payments: in the case of outbound tourism, those expenditures associated with resident visitors are registered as "debits" in the balance of payments and refer to "travel expenditure." As in the case of inbound tourism, balance of payments data are used. **Aggregate calculations:** Sum of individual country values. Missing data are imputed.

Inbound and outbound tourism expenditure (percentage of GDP)

Inbound expenditure: The tourism expenditure of a non-resident visitor within the economy of reference. Percentage of GDP is based on GDP in current United States dollars. Reflects the weight of expenditure by inbound visitors as a part of the total value of economic activity in the economy of reference. From the perspective of international trade, this indicator captures the economic importance of foreign revenue inflow associated with expenditures by such visitors. **Outbound expenditure:** The tourism expenditure of a resident visitor outside the economy of reference. Percentage of GDP is based on GDP in current United States dollars. Reflects the importance of the spending abroad by outbound visitors, expressed in terms of the national economy. From the perspective of international trade, this indicator captures the economic importance of domestic revenue outflow by means of such visitors. **Indicator calculations:** Percentages of GDP is based on million United States dollar values from the United Nations World Tourism Organization (UNWTO) divided by GDP in current United States dollars. **Aggregate calculations:** Weighted average using GDP in current United States dollars as weight. Missing data are not imputed.

Source

Source of tourism data: UNWTO. Data published by UNWTO originate from official sources and correspond to those published by the International Monetary Fund (and provided by central banks). **Data obtained:** 28 May 2013.

G.7.1 International tourism flows

	Inbound tourism (arrivals)			Outbound tourism (departures)			Inbound tourism expenditure			Outbound tourism expenditure		
	Thousands			Thousands			Million US dollars		% of GDP	Million US dollars		% of GDP
	1995	2010	2011	1995	2010	2011	2010	2011	2011	2010	2011	2011
East and North-East Asia	**38 579**	**105 540**	**109 296**	**88 806**	**171 706**	**185 662**	**135 618**	**156 284**	**1.1**	**121 504**	**142 859**	**1.0**
China	20 034	55 664	57 581	4 520	57 386	70 250	50 154	53 313	0.7	59 840	79 010	1.1
DPR Korea												
Hong Kong, China		20 085	22 316		84 442	84 816	27 208	33 736	13.9			
Japan	3 345	8 611	6 219	15 298	16 637	16 994	15 356	12 534	0.2	39 306	39 760	0.7
Macao, China	4 202	11 926	12 925		753	908	28 214	38 976	100.0	1 237	1 476	4.1
Mongolia	108	456	460				288	258	3.0	319	404	4.7
Republic of Korea	3 753	8 798	9 795	3 819	12 488	12 694	14 398	17 467	1.6	20 802	22 209	2.0
South-East Asia	**28 456**	**69 990**	**77 267**				**72 557**	**87 328**	**3.7**	**48 206**	**52 658**	**2.4**
Brunei Darussalam		214	242									
Cambodia	220	2 508	2 882	31	505	710	1 332	1 790	14.0	268	333	2.6
Indonesia	4 324	7 003	7 650		6 235	6 750	7 618	8 994	1.1	8 432	9 677	1.1
Lao PDR	60	1 670	1 786				385	413	5.0	215	248	3.0
Malaysia	7 469	24 577	24 714	20 642								
Myanmar	117	311	391				91	293	0.5		132	0.2
Philippines	1 760	3 520	3 917	1 615			3 228	3 796	1.7	4 194	4 402	2.0
Singapore	6 070	9 161	10 390	2 867	7 342	7 753	14 133	17 990	6.9	18 630	21 103	8.1
Thailand	6 952	15 936	19 230	1 820	5 451	5 397	23 809	30 926	8.4	7 151	7 320	2.0
Timor-Leste		40	51				26	21	0.4	68	60	1.1
Viet Nam	1 351	5 050	6 014				4 450	5 620	4.5	1 470	1 710	1.4
South and South-West Asia	**11 316**	**43 410**	**47 500**	**9 503**	**26 730**	**27 587**	**46 191**	**53 768**	**1.6**	**35 637**	**39 300**	**0.8**
Afghanistan							136			132		
Bangladesh	156	303		830			103	97	0.1	835	819	0.8
Bhutan	5	41	66				64	76	4.4	43	58	3.4
India	2 124	5 776	6 309	3 056	12 988	13 994	14 160	17 518	0.9	10 549	13 722	0.7
Iran (Islamic Rep. of)	489	2 938	3 354	1 000			3 055			15 651		
Maldives	315	792	931	32			1 713	1 868	91.1	252	256	12.5
Nepal	363	603	736	100	765	774	378	415	2.2	528	420	2.3
Pakistan	378	907					998	1 123	0.5	1 370	1 851	0.9
Sri Lanka	403	654	856	504	1 122	1 239	1 044	1 421	2.4	828	926	1.6
Turkey	7 083	31 396	34 038	3 981	6 557	6 282	24 540	28 059	3.6	5 449	5 465	0.7
North and Central Asia	**12 782**	**31 973**	**38 268**	**22 936**	**55 510**		**16 995**	**22 495**	**1.0**	**33 754**	**42 172**	**2.0**
Armenia	12	684	758		563	715	456	485	4.8	466	546	5.4
Azerbaijan		1 280	1 562		3 176	3 550	792	1 500	2.4	856	1 778	2.8
Georgia	85	2 032	2 822	228	2 089	2 237	737	1 059	7.4	329	384	2.7
Kazakhstan		3 393	4 093		7 412	8 020	1 236	1 524	0.8	1 489	1 851	1.0
Kyrgyzstan	36	1 316	3 114	42	1 296		336	689	11.6	398	566	9.6
Russian Federation	10 290	22 281	24 932	21 329	39 323		13 239	17 031	0.9	30 064	36 907	2.0
Tajikistan							32	40	0.6	25	13	0.2
Turkmenistan	218			21								
Uzbekistan	92	975			1 610		121					
Pacific	**8 103**	**11 540**	**11 651**	**3 806**	**9 717**	**10 470**	**39 522**	**42 768**	**2.4**	**31 569**	**37 663**	**2.2**
American Samoa	34	23	22	40	37	38						
Australia	3 726	5 885	5 875	2 519	7 112	7 795	31 638	34 198	2.3	27 533	33 193	2.2
Cook Islands	48	104	113	6	12	13	110					
Fiji	318	632	675	68	128	132	713			102		
French Polynesia	172	154	163	63								
Guam	1 362	1 196	1 159									
Kiribati	4	5	5									
Marshall Islands	6	5	5				3					
Micronesia (F.S.)							29	26	8.2	8	8	2.5
Nauru												
New Caledonia	86	99	112	59	132	124	129	153	1.6	179	176	1.8
New Zealand	1 409	2 511	2 594	920	2 026	2 096	4 906	5 493	3.4	3 038	3 459	2.1
Niue	2	6	6		2		2					
Northern Mariana Islands	669	375	336									
Palau	53	86	109				124	159	69.5			
Papua New Guinea	42	146	165	51			3	4	0.0	138		
Samoa	68	122	121		56	57	124	135	20.2	25	21	3.1
Solomon Islands	12	21	23				65	87	10.3	51	66	7.9
Tonga	29	45	46									
Tuvalu	1	2	1			2						
Vanuatu	44	97	94	11	21	22	242	252	32.4	33	39	5.0
Asia and the Pacific	**99 236**	**262 453**	**283 982**	**154 232**	**317 144**	**335 069**	**310 883**	**362 643**	**1.5**	**270 670**	**314 652**	**1.3**
Developed countries	8 480	17 007	14 688	18 737	25 775	26 885	51 900	52 225	0.7	69 877	76 412	1.0
Developing countries	90 756	245 446	269 294	135 495	291 369	308 184	258 983	310 418	1.8	200 793	238 240	1.4
LLDC		10 430					4 270	5 703	1.7	4 598	6 143	1.9
LDC	1 064	5 722		1 032			2 949	3 717	1.7	2 314	2 339	1.0
ASEAN	28 442	69 950	77 216				72 531	87 307	3.7	48 138	52 598	2.4
ECO	10 345	42 217					31 292	36 293	2.6	25 497	27 434	0.9
SAARC	3 744	9 076	10 108	4 522	17 252	18 384	18 596	22 654	1.0	14 537	18 184	0.8
Central Asia		9 692			16 187		3 756	5 464	1.8	3 690	5 265	1.8
Pacific island dev. econ.	2 968	3 144	3 182	367			2 978	3 077	3.2	998		
Low income econ.	894	5 045					2 408	3 460	1.6	2 291	2 415	1.1
Lower middle income econ.	11 257	29 907	33 731	8 153	28 092	30 036	34 773	42 144	1.2	28 671	34 392	1.0
Upper middle income econ.	54 985	158 376	170 575	54 351	153 196	166 714	135 939	154 712	1.3	128 076	155 562	1.3
High income econ.	32 050	69 015	72 126	90 714	131 020	133 268	137 650	162 215	1.7	111 632	122 283	1.4
Africa	**24 166**	**63 911**	**58 541**				**50 806**	**49 009**	**2.8**	**33 216**	**35 300**	**2.0**
Europe	**289 140**	**422 555**	**444 756**		**418 921**	**427 607**	**442 566**	**501 997**	**2.6**	**422 380**	**461 991**	**2.4**
Latin America and Carib.	**49 183**	**74 079**	**77 239**	**23 289**	**45 166**		**62 479**	**66 411**	**1.1**	**56 112**	**65 623**	**1.1**
North America	**60 809**	**76 125**	**78 961**	**69 631**	**89 143**	**88 839**	**183 918**	**206 253**	**1.2**	**146 981**	**158 733**	**0.9**
World	**537 459**	**951 514**	**999 285**	**582 882**	**924 915**	**962 979**	**1 113 500**	**1 251 652**	**1.7**	**1 006 873**	**1 112 513**	**1.6**

H.1. Information and communications technology

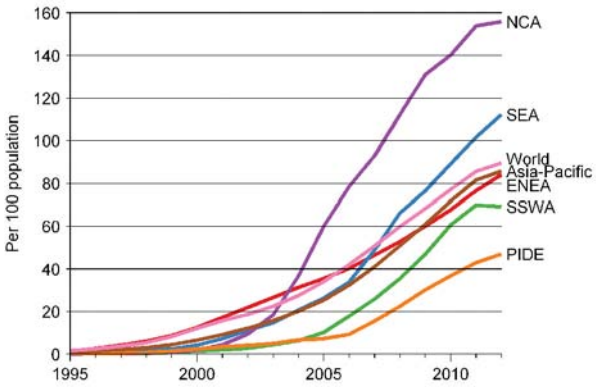
The development of information and communications technology (ICT) in the Asian and Pacific region continues at a high rate, catching most developed regions of the world. Today, more than half of the mobile-cellular subscriptions in the world are located in the region. The ubiquity of mobile telephones and affordable communications contributes to the empowerment of previously marginalized and poor people through an increase in people-to-people connectivity and a facilitated exchange of knowledge. However, even though more people are now online, thanks to the rapid uptake in mobile-broadband technology, large disparities in terms of ICT access and use continue to exist in the region.

Mobile-cellular subscriptions in Asia and the Pacific have been growing exponentially in the last 10 years, with the most rapid growth taking place in North and Central Asia.

Mobile telephone penetration rates, defined as mobile-cellular subscriptions per 100 population, have been rising since 1995 in the region, and have risen more rapidly over the last decade. This phenomenon can be attributed to a number of factors, such as higher income levels, lower costs of equipment and subscriptions, and a change in lifestyles. Falling subscription costs are largely due to increased competition and evolution in the business model of mobile operators, in which the lower average revenue per user is compensated for by the increase in the number of subscriptions. As a result, mobile telephones have become ubiquitous in many countries. In 2012, the mobile-cellular subscription rate was over 70 per 100 population in 34 countries in Asia and the Pacific, and over 100 in 23 countries.

However, there still exist large disparities in mobile-cellular penetration between countries. In the region in 2012, the number of mobile-cellular subscriptions per 100 population was the lowest in the Democratic People's Republic of Korea (6.9), Myanmar (11.2), Kiribati (15.6) and the Federated States of Micronesia (24.6), whereas the number was as high as 284.3 and 227.9 in Macao, China and Hong Kong, China, respectively. Within the Pacific subregion, considerable differences are found between countries. While Australia and New Zealand count more mobile-cellular subscriptions than population, the average subscription rate for the rest of the Pacific subregion stands at only 47.0 per 100 population. In North and Central Asia, the mobile-cellular market has expanded enormously; subscription expansion has surpassed the global average both in terms of the penetration rate and the speed of progress since 2004, and reached 155.9 subscriptions per 100 population in 2012.

Figure H.1-1
Mobile-cellular subscriptions, Asia and the Pacific and the world, 1995-2012



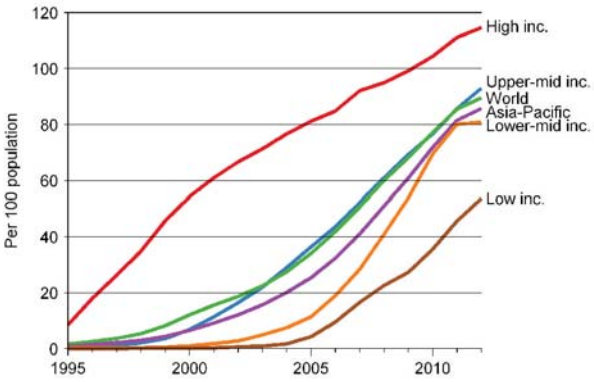
In terms of mobile-cellular subscription penetration, the gap between high-income and low-income economies still exists but low-income economies are catching up.

In the Asian and Pacific region, the mobile telephone penetration rates in high-income economies have been distinctly higher than those in the three lower income groups over time. For the low-income grouping, the 2012 mobile-cellular penetration of 53.7 per 100 population was at the same level as the rate for the high-income grouping in the late 1990s.

However, from 2005 to 2012, the growth of mobile telephone subscriptions in high-income economies stood at 5 per cent annually, while the

average annual growth for low-income economies was over 43 per cent, with the total number of subscriptions for those economies increasing fourteen-fold for that period (from 12.4 million in 2005 to over 171 million in 2012). At 32 per cent, the annual growth for lower-middle-income economies during the same period was also significantly higher than it was for high-income economies.

Figure H.1-2
Mobile-cellular subscriptions by income grouping, 1995-2012



Although the number of Internet users in the Asian and Pacific region has been growing, only 30 per cent of the population was connected to the Internet in 2012, with fewer than 8 fixed (wired)-broadband subscriptions per 100 population.

Between 2008 and 2012, the Internet usage rate in the Asian and Pacific region grew by 15.4 per cent annually, considerably more rapidly than the global annual growth rate of 11.2 per cent in the same period. Nevertheless, the penetration rate was still at only 29.7 per cent of the total population in 2012, leaving 3 billion people in the region – a number equivalent to almost half of the world's population – not yet connected. Moreover, a large share of Internet users did not have access to fixed (wired)-broadband Internet. In 2012, fixed (wired)-broadband penetration was 7.4 per 100 population for the Asian and Pacific region, significantly lower than the levels for North America and Europe, at 28.5 and 26.2, respectively, and below the global average of 9.2.

Just as with mobile-cellular subscriptions, the region experiences substantial disparity in Internet access.

The region has the second-lowest Internet user penetration rate in the world. With a world average of 36 Internet users per 100 population in 2012, the Internet user penetration rate was the lowest in Africa at 19 per cent, followed by Asia and the Pacific at 30 per cent, Latin America and the Caribbean at 43 per cent, Europe at 71 per cent and North America at 82 per cent. Within Asia and the Pacific, Internet user penetration also varied significantly across subregions.

In 2012, 47 per cent of the population in East and North-East Asia, and in North and Central Asia were connected to the Internet. At 25 per cent, the Internet user penetration rate in South-East Asia was virtually half the rate of the two best performing subregions. Moreover, South and South-West Asia has lagged behind the other subregions, with an Internet user penetration rate of 14 per cent, which is half that of South-East Asia and only one quarter that of the two leading subregions.

For the Pacific, about 64 per cent of the population were online in 2012, ranking first of the Asian and Pacific subregions in terms of Internet penetration. However, most Internet users were in Australia and New Zealand. In fact, the Internet user penetration rate for Pacific island developing economies remained very low at 10 per cent, showing large disparities in terms of Internet access within the Pacific.

In recent years, growing Internet penetration has been largely led by active mobile-broadband[1] services.

Mobile-broadband connections are relatively new high-speed Internet services that offer a variety of options to suit the purposes of different users.

[1] Active mobile-broadband subscriptions is the sum of standard mobile-broadband and dedicated mobile-broadband subscriptions to the public Internet. It covers actual subscribers, not potential subscribers, even though the latter may have broadband-enabled handsets.

Table. Active mobile-broadband subscriptions, world regions and Asian and Pacific subregions, 2010-2012

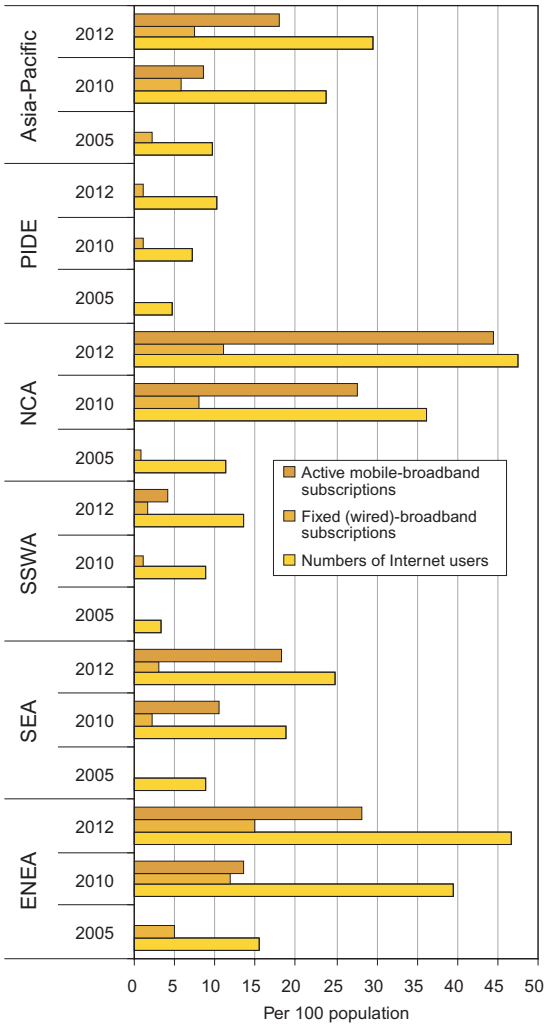
Active mobile-broadband subscriptions	Per 100 population			Percentage change per annum
	2010	*2011*	*2012*	*2010-2012*
East and North-East Asia	13.7	20.4	28.1	27.1
South-East Asia	10.4	13.8	18.2	20.4
South and South-West Asia	0.1	1.8	4.3	236.8
North and Central Asia	27.6	40.0	44.5	17.2
Pacific	39.3	56.1	84.1	28.9
Pacific island developing economies	0.0	0.1	1.7	
ESCAP	8.5	13.0	17.9	28.3
World	11.6	17.0	22.3	24.4
Africa	3.0	6.4	9.2	45.6
Latin America and the Caribbean	5.5	11.0	18.1	48.4
North America	50.3	66.1	72.2	12.8
Europe	30.3	38.6	46.8	15.5

Users can connect to the mobile-broadband network using a peripheral device, such as a USB modem or dongle attached to a laptop computer, or simply via a mobile-cellular telephone or tablet that is connected to the Internet. Operators in most countries have upgraded the ICT technology from 2G to high-speed 3G and in some cases to 4G mobile networks, and offer both post-paid and pay-as-you-go services to supplement fixed (wired)-broadband Internet, to which a large number of people have limited access. With flexible price plans, mobile-broadband services have brought the Internet to a wider group of people in both urban and remote areas, which has resulted to a great extent in an increase in the number of Internet users in recent years.

From 2010 to 2012, fixed (wired)-broadband subscriptions grew from 5.8 to 7.4 users per 100 population (an annual growth rate of 8.6 per cent), while the number of mobile-broadband subscriptions doubled from 8.5 to 17.9 users per 100 population (an annual growth rate of 28.3 per cent). Also, the annual growth rate of mobile-broadband subscriptions in the Asian and Pacific region was higher than the world average (24.4 per cent) over the same time period.

Within the region, North and Central Asia witnessed the steepest increase in the percentage of active mobile-broadband subscriptions, from 27.6 per cent in 2010 to 44.5 per cent in 2012.

Figure H.1-3
Number of Internet users, fixed (wired)-broadband and active mobile-broadband subscriptions, 2005, 2010 and 2012



Markets for broadband services, including fixed-line Internet services, were still untapped in South and South-West Asia and in Pacific island developing economies as the penetration rates in both remained below 5 per cent in 2011.

There is great potential for growth in mobile-broadband services in the Asian and Pacific region. With the rapid development of the smartphone and tablet industry and the great size of the market, double-digit growth in mobile-broadband services in the region is expected to be maintained over the next few years.

Box H.1-1
Price – a key driver for growth in the fixed (wired)-broadband market

Fixed (wired)-broadband penetration in the Asian and Pacific region has been growing continuously, albeit at a much slower rate than mobile-broadband services. It climbed from 4.1 subscriptions per 100 population in 2008 to 6.7 subscriptions per 100 population in 2011. Globally, at 8.6 subscriptions per 100 population, the fixed (wired)-broadband Internet rate was also relatively low compared with that of other ICT services. One underlying factor explaining this low rate is the cost: fixed (wired)-broadband services remain unaffordable for many, especially in low-income economies.

The International Telecommunication Union has collected information on the cost of ICT services with the aim of monitoring the level of ICT affordability using a composite "basket" called the "ICT Price Basket."[a] One of the components of the basket is a fixed broadband sub-basket calculated from the price of a monthly subscription for an entry-level broadband plan (based on 1 GB of download volume) as a percentage of a country's monthly gross national income (GNI) per capita. A higher figure means less affordable fixed broadband services.

Comparing affordability and the penetration of fixed (wired)-broadband Internet over time between country groups classified by income levels, it can be seen that penetration increases as fixed (wired)-broadband access becomes more affordable. For example, in 2008, in lower-middle-income economies there was a 0.5 per cent penetration rate and fixed (wired)-broadband Internet access cost on average 14.4 per cent of GNI per capita. As the relative price declined to 10.8 per cent of per capita annual income in 2011, fixed (wired)-broadband penetration increased to 1.2 per cent. Yet, at 10.8 per cent of GNI per capita the price remained unaffordable for a large number of people. The fixed (wired)-broadband affordability target set by the Broadband Commission for Digital Development[b] indicates that entry-level broadband services in developing countries should be made affordable, at a price of less than 5 per cent of GNI per capita by 2015. This would be a very challenging issue, especially for least developed countries where, in 2011, fixed (wired)-broadband subscription fees accounted for about one third of per capita annual income.

Table 1. Fixed (wired)-broadband sub-basket price as a percentage of GNI per capita, 2008-2011

	2008	2009	2010	2011
LDC	155.2	130.1	31.5	28.7
Lower middle income econ.	14.4	14.1	10.8	10.8
Upper middle income econ.	7.9	6.0	4.1	4.1
High income econ.	1.0	1.1	0.9	1.0
Asia-Pacific	6.6	6.3	4.1	4.1

Table 2. Fixed (wired)-broadband subscriptions per 100 population, 2008-2011

	2008	2009	2010	2011
LDC	0.0	0.1	0.2	0.3
Lower middle income econ.	0.5	0.8	1.1	1.2
Upper middle income econ.	5.9	7.4	8.9	10.8
High income econ.	25.7	27.4	28.5	29.3
Asia-Pacific	4.1	4.9	5.8	6.7

Source: ESCAP, based on International Telecommunication Union, *Measuring the Information Society 2012* (Geneva, 2012). Available from www.itu.int/en/ITU-D/Statistics/Pages/publications/mis2012.aspx.

While GNI might be expected to grow, such growth might not allow the target of a price of 5 per cent of GNI by 2015 to be reached, unless fixed (wired)-broadband Internet services were offered at lower prices. From this perspective, national legislation and regulatory interventions should promote and support ICT investment and market competition in line with specific government policies to strengthen ICT developments such as ICT skills and content.

[a] Although the ICT Price Basket has some weaknesses, as documented in the International Telecommunication Union report *Measuring the Information Society 2012* (Geneva, 2012), it provides a fair comparison between countries.

[b] In 2010, the International Telecommunication Union and the United Nations Educational, Scientific and Cultural Organization jointly launched the Broadband Commission for Digital Development to address the issues concerning the deployment of broadband networks and services. In October 2011, at its fourth meeting, the Commission set four "ambitious but achievable" targets related to broadband policy, affordability and uptake to be achieved by 2015. See International Telecommunication Union, *Measuring the Information Society 2012* (Geneva, 2012).

Box H.1-2
Information and communications technology development in landlocked developing countries and Pacific island developing economies

Asia and the Pacific is one of the most diverse regions in terms of ICT development. It is home to a number of ICT advanced economies — such as Japan, the Republic of Korea and Singapore as well as Hong Kong, China, and Macao, China — as well as countries with very low ICT penetration. In particular, landlocked developing countries and Pacific island developing economies are among the lowest performing economies in terms of ICT penetration. According to the 2011 ICT Development Index,[a] Bhutan, the Lao People's Democratic Republic, Nepal, Papua New Guinea, Solomon Islands, Turkmenistan, Tuvalu and Uzbekistan were landlocked developing countries and Pacific island developing economies that ranked below 100 of the 155 countries included in the 2011 ICT Development Index.

ICT development in terms of access and use in landlocked developing countries and Pacific island developing economies has been impeded by, among other factors, geographical and topographical constraints, as well as low levels of income. Looking at access to fixed (wired)-broadband Internet, for example, the penetration rate in 2011 in landlocked developing countries and Pacific island developing economies remained quite low at 2.4 and 1.2 subscriptions per 100 population, respectively, compared with the Asian and Pacific average of 6.7. Submarine cables are the backbone of global Internet network infrastructure, and, because they are landlocked, landlocked developing countries do not have a close access point to such infrastructure. Pacific island developing economies, in turn, may have similar geographical disadvantages due to their remoteness. Furthermore, the difficulties in accessing international Internet bandwidth[b] have led to high prices of fixed (wired)-broadband subscriptions. In addition, a large number of landlocked developing countries and Pacific island developing economies are among least developed countries. For those countries, the high fixed (wired)-broadband prices in relation to their income levels make fixed (wired)-broadband services unaffordable for the majority of people. For instance, in 2011, the cost of an entry-level subscription for fixed (wired)-broadband services was 22.8, 63.4 and 77.7 per cent of per capita income in Tonga, Nepal and Vanuatu, respectively. Moreover, there are landlocked developing countries and Pacific island developing economies in which prices for entry-level fixed (wired)-broadband services exceed GNI per capita, including Tajikistan (543.7 per cent), Kiribati (228.7 per cent) and Uzbekistan (187.5 per cent).

To cater to the demand for high-speed Internet access, users, especially individuals, have started to rely on rapidly growing mobile-broadband services. In Pacific island developing economies in 2011, there were six times as many mobile-broadband as fixed Internet subscriptions in Fiji, and up to nine times as many in Solomon Islands. The differentials were more extreme in landlocked developing countries, ranging from twice as many mobile-broadband as fixed Internet subscriptions in Azerbaijan, to 35 times as many in Uzbekistan, a country that shares borders with only other landlocked countries. However, mobile-broadband services are not a substitute for the fixed (wired)-broadband services as each answers different needs. Although mobile-broadband connections offer mobility to users, fixed (wired)-broadband networks provide higher access speeds with greater capacity and stability, which are essential particularly for businesses and users who require reliable, high-speed Internet connections. Thus, strengthening ICT connectivity infrastructure in landlocked developing countries and Pacific island developing economies is imperative. By taking into account their specific challenges, regional collaboration can be an avenue for landlocked developing countries and Pacific island developing economies to work together to find regional solutions that benefit all countries.

[a] International Telecommunication Union, *Measuring the Information Society 2012* (Geneva, 2012).
[b] In landlocked developing countries and Pacific island developing economies, the approximate international Internet bandwidth in 2011 was 6 kbit/s per Internet user compared with the Asian and Pacific average of 10 kbit/s per Internet user (ESCAP, based on International Telecommunication Union, World Telecommunication/ICT Indicators Database).

Further reading

International Telecommunication Union. *Handbook for the Collection of Administrative Data on Telecommunications/ICT*. Geneva, 2011.

————. *Measuring the Information Society 2012*. Geneva, 2012.

International Telecommunication Union and others. *Measuring the WSIS Targets: A Statistical Framework*. Geneva: International Telecommunication Union, 2011.

Technical notes

Mobile-cellular subscriptions (per 100 population, percentage change per annum)

The number of subscriptions to a public mobile telephone service that provides access to public switched telephone network (PSTN) using cellular technology. The indicator includes (and is split into) the number of postpaid subscriptions and the number of active prepaid accounts (that is, they have been used during the last three months). The indicator applies to all mobile-cellular subscriptions that offer voice communications. It excludes subscriptions via data cards or USB modems, subscriptions to public mobile data services, private trunked mobile radio, telepoint, radio paging and telemetry services. **Aggregate calculations:** Mobile-cellular subscriptions divided by the population and multiplied by 100. Missing data are not imputed.

Internet users (per 100 population, percentage change per annum)

The use of the Internet by in-scope individuals in the previous 12 months. Use may be from any location, including mobile access via a mobile-cellular telephone or another mobile access device. Data are based on surveys generally carried out by national statistical offices or are estimated based on the number of Internet subscriptions. **Aggregate calculations:** The number of in-scope individuals who used the Internet (from any location) in the last 12 months divided by the total number of in-scope individuals and multiplied by 100. Missing data are not imputed.

Fixed (wired)-broadband subscriptions (per 100 population, percentage change per annum)

Subscriptions to high-speed access to the public Internet (a TCP/IP connection), at downstream speeds equal to, or greater than, 256 kbit/s. They include cable modem, DSL, fibre-to-the-home/building and other fixed (wired)-broadband subscriptions. The total is measured irrespective of the method of payment. It excludes subscriptions that have access to data communications (including the Internet) via mobile-cellular networks. It should exclude technologies listed under the wireless broadband category. **Aggregate calculations:** Fixed (wired)-broadband subscriptions divided by the population and multiplied by 100. Missing data are not imputed.

Source

International Telecommunication Union, World Telecommunication/ICT Indicators Database, June 2013 edition. The International Telecommunication Union collects individual country values from an annual questionnaire sent to government telecommunications/ICT agencies, and provides estimates of data on countries and years that are missing from the survey. **Data obtained:** 25 June 2013.

H.1.1 Information and communications technology

	Mobile-cellular subscriptions				Internet users				Fixed (wired)-broadband subscriptions			
	Per 100 population			% change per annum	Per 100 population			% change per annum	Per 100 population			% change per annum
	2000	2008	2012	08-12	2000	2008	2012	08-12	2000	2008	2012	08-12
East and North-East Asia	**12.5**	**52.8**	**84.1**	**12.3**	**5.6**	**28.6**	**46.7**	**13.1**	**0.4**	**8.5**	**15.0**	**15.4**
China	6.7	48.3	81.3	13.9	1.8	22.6	42.3	17.0	0.0	6.2	13.0	20.1
DPR Korea	0.0	0.0	6.9		0.0	0.0			0.0	0.0		
Hong Kong, China	80.3	167.2	227.9	8.1	27.8	66.7	72.8	2.2	6.6	27.9	31.6	3.1
Japan	53.1	87.2	109.4	5.8	30.0	75.4	79.1	1.2	0.7	23.8	27.9	4.1
Macao, China	32.7	179.9	284.3	12.1	13.6	49.2	64.3	6.9	0.9	23.4	25.5	2.1
Mongolia	6.4	66.1	117.6	15.5	1.3	9.8	16.4	13.7		1.2	3.6	31.4
Republic of Korea	58.3	95.5	110.4	3.7	44.7	81.0	84.1	0.9	8.4	32.4	37.6	3.8
South-East Asia	**4.2**	**66.2**	**112.2**	**14.1**	**2.6**	**13.1**	**24.8**	**17.4**	**0.0**	**1.5**	**2.9**	**18.8**
Brunei Darussalam	29.0	103.7	113.8	2.3	9.0	46.0	60.3	7.0		4.4	4.8	2.3
Cambodia	1.0	30.7	132.0	44.0	0.0	0.5	4.9	76.4		0.1	0.2	14.4
Indonesia	1.7	59.8	115.2	17.8	0.9	7.9	15.4	18.0	0.0	0.4	1.2	30.7
Lao PDR	0.2	33.6	101.9	32.0	0.1	3.6	10.7	31.9		0.1	1.5	94.9
Malaysia	21.9	100.8	140.9	8.7	21.4	55.8	65.8	4.2	0.0	4.8	8.4	15.0
Myanmar	0.0	0.8	11.2	94.7		0.2	1.1	48.5	0.0	0.0	0.0	-14.9
Philippines	8.3	75.5	106.8	9.0	2.0	6.2	36.2	55.4	0.0	1.2	2.2	17.7
Singapore	70.1	134.4	153.4	3.4	36.0	69.0	74.2	1.8	1.8	21.5	26.1	5.0
Thailand	4.8	90.6	120.3	7.3	3.7	18.2	26.5	9.8	0.0	3.0	6.2	19.7
Timor-Leste		11.6	52.3	45.8		0.2	0.9	53.7		0.0	0.1	66.5
Viet Nam	1.0	87.1	149.4	14.4	0.3	23.9	39.5	13.4		2.4	5.0	20.1
South and South-West Asia	**1.4**	**35.5**	**69.2**	**18.1**	**0.7**	**5.9**	**13.6**	**23.3**	**0.0**	**0.7**	**1.5**	**22.5**
Afghanistan	0.0	26.5	53.9	19.5		1.8	5.5	31.2		0.0		
Bangladesh	0.2	30.7	63.8	20.1	0.1	2.5	6.3	26.0		0.0	0.3	77.2
Bhutan	0.0	36.1	74.7	19.9	0.4	6.6	25.4	40.4		0.3	2.2	66.1
India	0.3	29.1	68.7	23.9	0.5	4.4	12.6	30.2	0.0	0.4	1.1	26.5
Iran (Islamic Rep. of)	1.5	59.5	76.9	6.6	0.9	10.2	26.0	26.2	0.0	0.4	4.1	76.9
Maldives	2.8	141.6	172.8	5.1	2.2	23.2	38.9	13.8	0.0	5.0	5.5	2.5
Nepal	0.0	14.5	52.8	38.1	0.2	1.7	11.1	59.3		0.0	0.4	76.2
Pakistan	0.2	52.6	66.8	6.2		7.0	10.0	9.2		0.1	0.5	55.2
Sri Lanka	2.3	54.1	95.8	15.3	0.6	5.8	18.3	33.3		0.5	2.0	41.5
Turkey	25.4	92.8	90.8	-0.5	3.8	34.4	45.1	7.0	0.0	8.1	10.5	6.8
North and Central Asia	**1.9**	**112.2**	**155.9**	**8.6**	**1.5**	**21.1**	**47.6**	**22.6**	**0.0**	**4.5**	**11.0**	**24.9**
Armenia	0.6	46.8	106.9	22.9	1.3	6.2	39.2	58.5		0.4	6.6	107.3
Azerbaijan	5.2	73.2	107.5	10.1	0.1	17.1	54.2	33.5		0.7	13.8	113.0
Georgia	4.1	62.7	109.2	14.9	0.5	10.0	45.5	46.0		2.6	9.1	37.5
Kazakhstan	1.3	95.2	175.4	16.5	0.7	11.0	53.3	48.4		2.2	9.7	45.7
Kyrgyzstan	0.2	65.2	124.8	17.6	1.0	15.7	21.7	8.5		0.4	2.6	63.9
Russian Federation	2.2	139.4	183.5	7.1	2.0	26.8	53.3	18.7	0.0	6.5	14.5	22.2
Tajikistan	0.0	54.9	92.2	13.8	0.0	8.8	14.5	13.4		0.1	0.1	8.7
Turkmenistan	0.2	23.1	76.5	34.9	0.1	1.8	7.2	42.4		0.0	0.0	105.3
Uzbekistan	0.2	46.2	72.2	11.8	0.5	9.1	36.5	41.6		0.2	0.7	30.9
Pacific	**33.2**	**82.8**	**91.2**	**2.4**	**35.4**	**54.2**	**63.8**	**4.2**		**17.5**	**19.2**	**2.3**
American Samoa	3.5											
Australia	44.7	102.8	106.2	0.8	46.8	71.7	82.3	3.5		23.9	25.1	1.1
Cook Islands												
Fiji	6.8	71.1	98.1	8.4	1.5	13.0	33.7	26.9		1.5	1.5	0.0
French Polynesia	16.8	70.7	81.7	3.7	6.4	33.9	52.9	11.8		10.5	14.5	8.6
Guam	17.5				16.1	48.4	61.5	6.2		1.5		
Kiribati	0.4	1.0	15.6	96.9	1.8	7.0	10.7	11.3		0.7	1.0	8.2
Marshall Islands	0.9				1.5	4.6	10.0	21.4		0.0		
Micronesia (F.S.)	0.0	24.9	24.6	-0.3	3.7	14.5	26.0	15.7				
Nauru	12.0		65.6								0.0	
New Caledonia	23.6	80.9	89.3	2.5	13.9	34.5	58.0	13.9	0.0	10.5	18.5	15.3
New Zealand	40.0	108.0	110.3	0.5	47.4	72.0	89.5	5.6	0.1	21.4	27.8	6.8
Niue												
Northern Mariana Islands	4.4									0.0		
Palau		57.7	82.6	9.4						0.5	3.0	52.3
Papua New Guinea	0.2	13.3	37.8	29.7	0.8	1.2	2.3	18.9		0.0	0.1	29.5
Samoa	1.4				0.6	5.0	12.9	26.6		0.1		
Solomon Islands	0.3	5.9	53.3	73.5	0.5	3.0	7.0	23.6		0.3	0.4	6.4
Tonga	0.2	49.0	53.4	2.1	2.4	8.1	34.9	44.0		0.7	1.4	19.5
Tuvalu	0.0		28.4		5.2	15.0	35.0	23.6		3.0	5.6	17.1
Vanuatu	0.2	15.8	54.4	36.3	2.1	7.3	10.6	9.9		0.1	1.0	85.3
Asia and the Pacific	**6.5**	**50.9**	**85.6**	**13.9**	**3.3**	**16.7**	**29.7**	**15.4**	**0.2**	**4.1**	**7.4**	**16.0**
Developed countries	51.7	90.0	109.0	4.9	32.6	74.8	79.8	1.7	0.7	23.8	27.5	3.7
Developing countries	4.6	49.4	84.8	14.4	2.1	14.5	27.8	17.7	0.1	3.3	6.6	18.8
LLDC	0.7	43.6	85.0	18.1	0.4	6.6	23.8	37.8		0.4	3.3	68.9
LDC	0.2	23.1	56.4	25.0	0.1	1.9	5.8	32.7		0.0	0.3	69.9
ASEAN	4.2	66.3	112.3	14.1	2.6	13.1	24.9	17.4	0.0	1.5	2.9	18.8
ECO	5.0	60.6	78.4	6.7		12.6	23.0	16.4		1.6	3.7	23.0
SAARC	0.3	31.8	67.9	20.8	0.5	4.4	11.6	27.4	0.0	0.4	1.0	29.4
Central Asia	1.3	61.0	106.4	14.9	0.5	10.3	37.5	38.1		0.8	4.8	56.4
Pacific island dev. econ.	2.4	22.4	47.0	20.3	1.8	5.4	10.1	16.8		0.8	1.2	11.1
Low income econ.	0.2	22.6	53.7	24.2	0.1	2.1	6.2	31.3		0.0	0.3	70.2
Lower middle income econ.	1.0	40.9	80.8	18.5	0.6	6.2	15.6	26.1	0.0	0.5	1.4	26.0
Upper middle income econ.	6.9	60.9	93.0	11.2	2.2	23.1	42.5	16.5	0.0	5.9	12.2	20.1
High income econ.	54.3	95.0	114.7	4.8	35.1	75.5	80.3	1.5	2.8	25.7	29.8	3.8
Africa	**1.9**	**37.7**	**67.9**	**15.8**	**0.5**	**8.5**	**19.0**	**22.1**		**0.3**	**0.6**	**21.2**
Europe	**47.5**	**119.4**	**125.1**	**1.2**	**18.7**	**58.6**	**71.2**	**5.0**	**0.4**	**20.3**	**26.2**	**6.6**
Latin America and Carib.	**12.3**	**79.9**	**109.8**	**8.2**	**3.9**	**26.5**	**43.4**	**13.1**	**0.0**	**4.8**	**8.5**	**15.6**
North America	**37.7**	**83.8**	**96.0**	**3.5**	**43.9**	**74.3**	**81.6**	**2.4**	**2.7**	**25.3**	**28.5**	**3.0**
World	**12.1**	**59.9**	**89.5**	**10.5**	**6.8**	**23.3**	**35.7**	**11.2**	**0.4**	**6.1**	**9.2**	**10.5**

H.2. Transport

Efficient, reliable and safe transport infrastructure and services are crucial to regional integration and the sustainable and inclusive economic and social development of countries. Asia and the Pacific has continued to see improvements in transport infrastructure and services against the backdrop of substantial growth in output, trade and investment experienced by many countries in the region. On the other hand, the improvements have been quite uneven both across and within countries. Long-term commitment is required to address critical issues in the transport sector to support sustained economic growth, improve the living standards of the people and further increase the competitiveness of the economies of the region. At the same time, political commitment and effective interventions are required to improve road safety and energy efficiency of the transport sector.

Railway density in Asia and the Pacific has not seen great progress historically; however, increased government investment in railways continues to improve the overall availability and quality of rail services.

Railway density in the region remained at 6.5 km per 1,000 km^2 in 2010. This is low compared with railway density in North America and in Europe. However, the increased investment in railways by Governments in the region reflects concern regarding the carbon footprint of the transport sector and the need to make greater use of the capabilities offered by intermodal transport.

The largest volumes of both passengers and freight continued to be carried by the railways of China, India and the Russian Federation. Although rail freight has stagnated somewhat in the Russian Federation, significant increases were registered in India and in China at 42.3 per cent and 24.7 per cent, respectively, in the period 2006-2011.

The flood in Thailand in late 2011 affected the Thai manufacturing sector, which in turn strongly affected rail freight transport, causing a 22.3 per cent reduction from 2010. In the region overall, railway freight in million ton-km has gradually increased from previous years.

The total demand for rail passenger transport services as measured in passenger-km increased by over 4.6 per cent from 2010 to 2011. Contributing to this increase were rises in rail passenger transport in China and in India. In China, the opening of new high-speed lines has attracted more customers to rail.

Figure H.2-1
Railway freight in China, India and the Russian Federation, 2005 to 2011

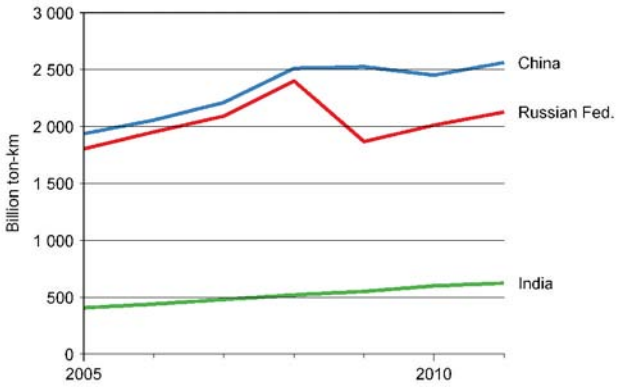
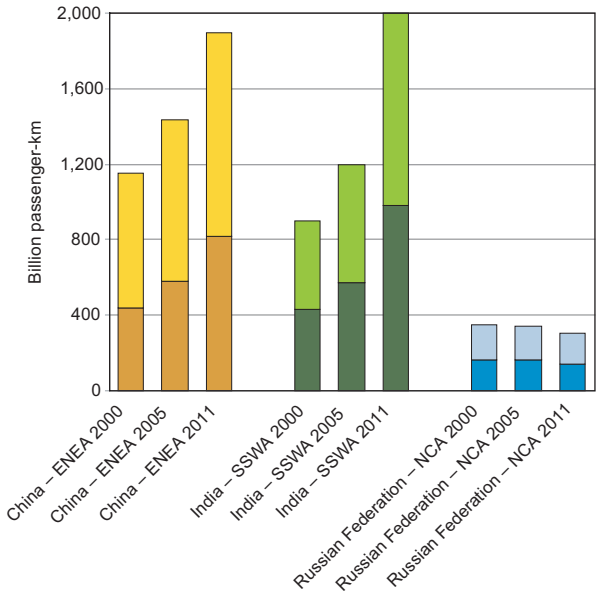


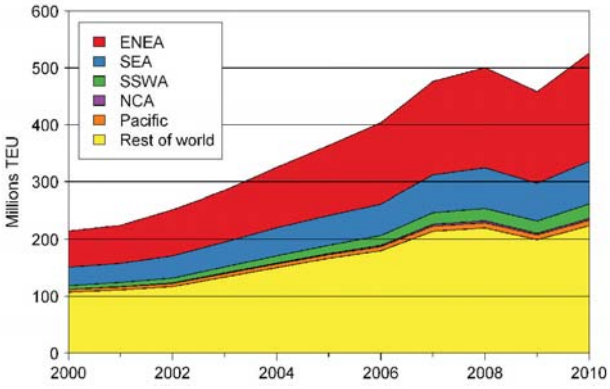
Figure H.2-2
Railway passengers, top three countries in Asia and the Pacific and their respective subregions, 2000, 2005 and 2011



By 2010, container port traffic volume had already increased rapidly from the 2009 slump as the global economy began recovering from the financial crisis.

At the global and regional levels, as well as in most subregions, container port traffic showed a steady increase in volume throughout the decade 2001-2010 except for a sudden slump in 2009, when the financial crisis slowed the global economy. Nevertheless, between 2009 and 2010, the Asian and Pacific region showed an increase of 16.5 per cent in container port traffic volume, which was higher than the world average of 14.1 per cent. By subregion, North and Central Asia showed the highest growth, at 33.8 per cent, in container port traffic volume, although its share in the region in absolute volume is minimal. East and North-East Asia had the highest share of total regional container port traffic (62.8 per cent). Its growth between 2009 and 2010 was almost 18 per cent, which was higher than the regional average.

Figure H.2-3
Container port traffic, Asian and Pacific subregions, 2000-2010 or nearest year

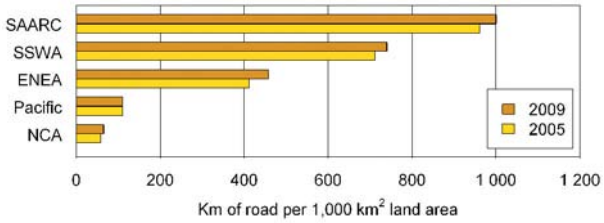


Road density in Asia and the Pacific continues to increase, but remains low in comparison to more developed regions of the world.

From 2005 to 2008, the road density in Asia and the Pacific increased from 251 to 266 km of road per 1,000 km^2 of land area, an increase of 5.4 per cent compared to a global growth of 3.5 per cent over the same period. However, the density remains low compared to Europe at 1,133 km per 1,000 km^2 (2009), or North America at 436 km per 1,000 km^2 (2009).

The road network development has been particularly rapid in SAARC countries with the density nearly doubling to 1,000 km per 1,000 km^2 between 1990 and 2008.

Figure H.2-4
Road density, Asia and the Pacific, 2005 and 2009 or nearest year



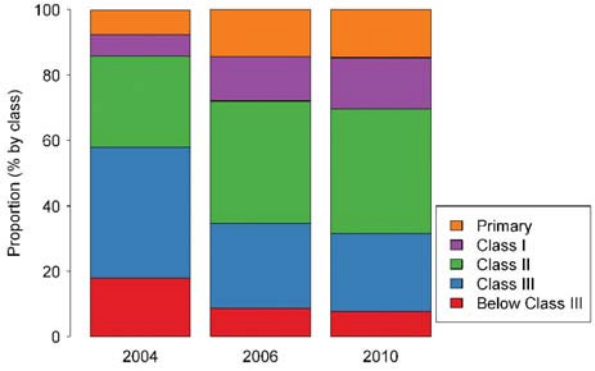
Note: Data for South-East Asia were available only for 2004 and hence not shown in the figure.

The general quality of roads in Asia and the Pacific has been improving.

In the region, paved roads as a percentage of total roads increased by 11.1 per cent between 2005 and 2008. North and Central Asia is the only subregion where paved roads as a percentage of total roads have been decreasing.

The Asian Highway Network continued to expand and now comprises approximately 143,000 km of roads across 32 member countries in Asia. As of the end of 2010, primary and class I Asian Highway Network routes covered

Figure H.2-5
Proportion of Asian Highway Network routes by class, 2004, 2006 and 2010



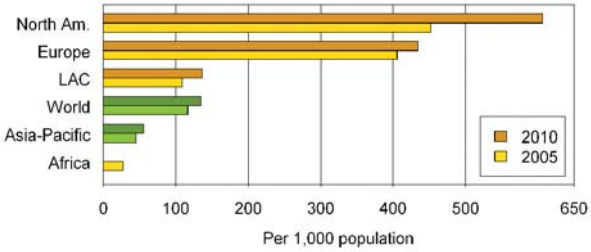
about 30 per cent of the network, while class II and class III routes accounted for 62 per cent of the network. Between 2006 and 2010, countries in the region upgraded about 9,400 km (6.6 per cent) of the Asian Highway Network from their previous classification.[1] The progress in upgrading routes of the network between 2004 and 2010 is shown in figure H.2-5.

Car ownership in most countries in the region has continued to increase, reaching 55.9 cars per 1,000 people in 2009.

In 2010, the car ownership rate for the region was much lower than the global average, but the ownership rate in its high-income economies (405 per 1,000 people) was similar to that of Europe (434 per 1,000 people), but lower than that of North America (606 per 1,000 people).

Among countries in the region, car ownership in China increased almost three-fold, and, in Kazakhstan, it increased two-fold in just the five years between 2005 and 2010.

Figure H.2-6
Car ownership, world and world regions, 2005 and 2010 or latest year



Road traffic death rates in many countries in Asia and the Pacific are among the highest in the world, with more than half of the world's total road traffic deaths occurring in the region.

About 777,000 people were killed on the region's roads in 2010, accounting for 63 per cent of total global road traffic deaths. While the number of global fatalities in 2010 remained similar to that in 2007, road fatalities in the region continued to increase. However, this trend has been reversed in the Pacific and in North and Central Asia, where the number of road traffic deaths has decreased. On the other hand, the situation in East and North-East Asia and in South-East Asia was worse in 2010 in comparison with 2007.

Overall, there were 18.6 road traffic deaths per 100,000 population in the region in 2010, which was slightly higher than the world average of 18.1. With the exception of the Pacific (8.1), road traffic deaths per 100,000 population ranged between 17 and 20 in all the subregions.

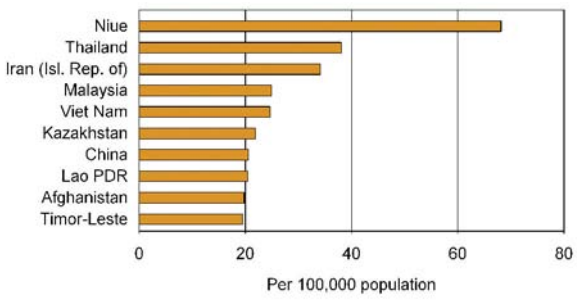
Vulnerable road users include drivers and passengers of motorized two- or three-wheeled vehicles, cyclists and pedestrians. According to data from the World Health Organization, of the total road traffic deaths in the region in 2010, 55 per cent were vulnerable road users.[2]

Table. Road traffic deaths in the world, Asia and the Pacific and its subregions, 2007 and 2010

Location	2007	2010
	(Per 100,000 population)	
ENEA	15.3	19.0
SEA	17.9	19.7
SSWA	18.3	18.4
NCA	22.3	17.6
Pacific	9.2	8.1
Asia-Pacific	17.2	18.6
World	18.5	18.1

Source: ESCAP, calculations based on data from the World Health Organization. Available from http://apps.who.int/gho/data/node.main.A998?lang=en.

Figure H.2-7
Countries in Asia and the Pacific with the highest road traffic deaths, 2010



[1] Based on data from the Asian Highway Database. Available from www.unescap.org/ttdw/common/tis/ah/Database.asp.

[2] ESCAP, calculations based on data from the World Health Organization. Available from http://apps.who.int/gho/data/node.main.A998?lang=en.

Figure H.2-8
Road traffic deaths, Asian and Pacific subregions, total number, 2010

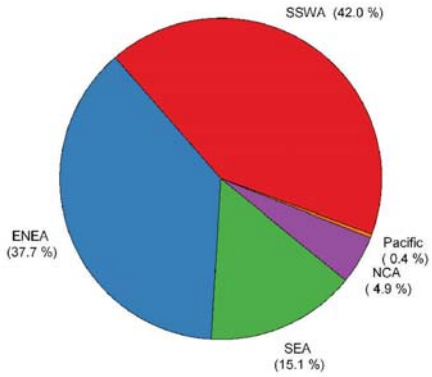
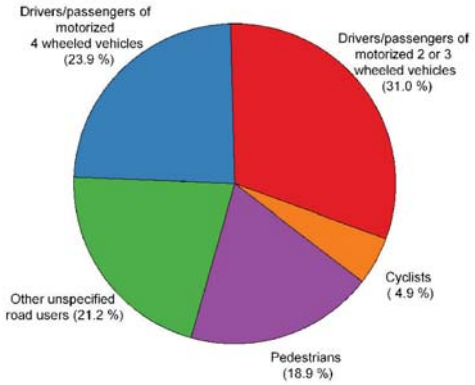


Figure H.2-9
Road traffic deaths in Asia and the Pacific by type of user, 2010

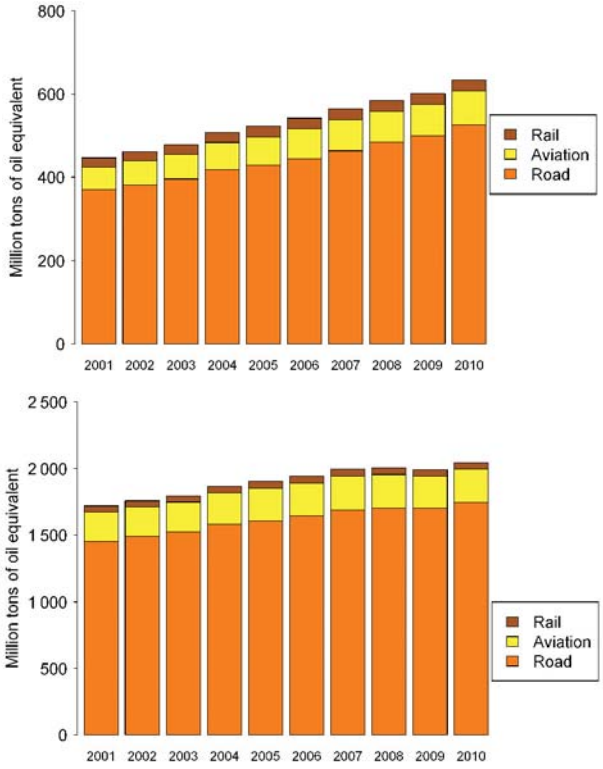


Source: ESCAP, calculations based on data from the World Health Organization. Available from http://apps.who.int/gho/data/node.main.A998?lang=en.

The region's share of energy consumption in the transport sector is growing steadily. In 2010, the road sector accounted for more than 80 per cent of total energy consumption in the transport sector in the region.

In 2000, the transport sector consumed 1,956 million tons of oil equivalent (Mtoe) energy globally, of which 23.5 per cent (459 Mtoe) was consumed in the Asian and Pacific region. In 2010, the transport sector in the region consumed 27.4 per cent (648 Mtoe) of the sector's total global energy consumption (2,362 Mtoe). The road sector accounted for most of the energy consumption both in the region and in the world. Compared with the global increase, energy consumption by road transport in the region is escalating more steeply.

Figure H.2-10
Energy consumption in the transport sector, Asia and the Pacific and the world, 2000-2010



In line with increasing energy consumption, the region shows an upward trend in CO_2 emissions from the transport sector. In 2010, emissions from the road sector accounted for about 83.3 per cent of total CO_2 emissions from the transport sector in the region.

In the region, carbon dioxide, or CO_2, emissions soared from 1,056 million tons in 1990 to 1,844 million tons in 2010. In 2010, East and North-East Asia accounted for almost 45 per cent of the region's total CO_2 emissions from transport, the highest among the subregions. In terms of increases in emissions, South-East Asia has had the highest growth rate, which almost doubled between 1990 and 2010. North and Central Asia, on the other hand, had a slight decline in total emissions during the same period.

Figure H.2-11
Carbon dioxide emissions, Asian and Pacific subregions, 1990-2010

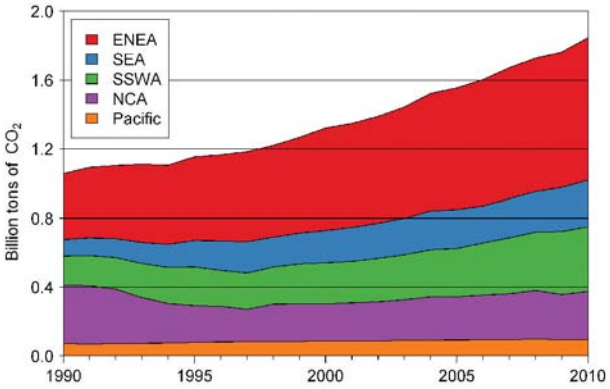
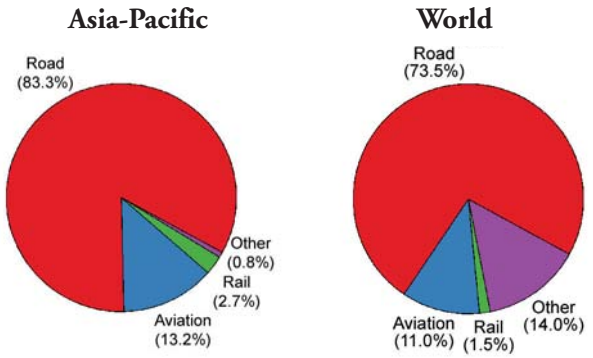


Figure H.2-12
Carbon dioxide emissions by type of transport, Asia and the Pacific and the world, 2010



Further reading

ESCAP. *Efficient Cross-border Transport Models.* 2012. Available from www.unescap.org/ttdw/Publications/TFS_pubs/ECBTM/ECBTM-fulltext.pdf.

_____. *Review of Developments in Transport in Asia and the Pacific 2011.* United Nations publication, Sales No. E.12.II.F.8. Available from www.unescap.org/ttdw/review/files/review2011.pdf.

Technical notes

Railway freight (million ton-km)

Represents transport in million tons of goods by rail over a distance of 1 km. The distance to be covered is the distance actually run on the specified network, normally the national network of the reporting country. **Aggregate calculations:** Sum of individual country values. Missing data are not imputed.

Railway passengers (million passenger-km)

Represents transport of passengers by rail over a distance of 1 km. The distance to be taken into consideration should be the distance actually travelled by the passenger on the specified network. **Aggregate calculations:** Sum of individual country values. Missing data are not imputed.

Port container traffic (million twenty-foot equivalent units)

The flow of containers from land-to-sea transport modes, and vice versa, in twenty-foot equivalent units, a standard-sized container. Data refer to coastal shipping as well as international journeys. Trans-shipment traffic is counted as two lifts at the intermediate port (once to offload and again as an outbound lift). Empty units are included. **Aggregate calculations:** Sum of individual country values. Missing data are not imputed.

Port container traffic (per million dollars of GDP)

Per million dollars of GDP figures are based on GDP in current United States dollars.

Railway density (km of railway per 1,000 km^2 land area)

The length of rail lines divided by the land area expressed in 1,000 km. Rail lines are the length of railway route available for train service measured in km, irrespective of the number of parallel tracks. **Aggregate calculations:** Weighted averages using land area as weight. Missing data are imputed.

Road density (km of road per 1,000 km^2 land area)

Total road network includes motorways, highways, main or national roads, secondary or regional roads, and all other roads measured in km in a country. Total road network divided by the land area. **Aggregate calculations:** Weighted averages using land area as weight. Missing data are imputed.

Paved roads (percentage of roads)

The share of roads surfaced with crushed stone (macadam) and hydrocarbon binder or bituminized agents, concrete or cobblestones, expressed as a percentage of the length of all roads. Total paved roads divided by the total road network. **Aggregate calculations:** Weighted averages using road network as weight. Missing data are imputed.

Asian Highway Network: primary, class I, class II, class III, below class III and total (km)

The Asian Highway Network consists of highway routes of international importance within Asia, including highway routes substantially crossing more than one subregion, highway routes within subregions that connect neighbouring subregions, and highway routes located within member States that provide access to (a) capital cities, (b) main industrial and agricultural centres, (c) major air, sea and river ports, (d) major container terminals and depots, and (e) major tourist attractions. The total Asian Highway Network is divided into five major classes (primary, class I, class II, class III, below class III) that conform with road design standards. Primary refers to access-controlled asphalt or cement concrete dual carriageway highways with four or more lanes. Access-controlled highways are used exclusively by automobiles. Access to the access-controlled highways is at grade-separated interchanges only. Mopeds, bicycles and pedestrians should not be allowed to enter the access-controlled highway in order to ensure traffic safety and the high running speed of automobiles. Class I refers to asphalt or cement concrete dual carriageway highways with four or more lanes. Class II refers to asphalt or cement concrete highways with two lanes. Class III refers to double bituminous surface treatment highways with two lanes. Class III is also regarded as the minimum desirable standard. Roads classified below class III are road sections below the minimum desirable standard. **Aggregate calculations:** Sum of individual country values. Missing data are not imputed.

Passenger cars (per 1,000 population)

Road motor vehicles designed for the conveyance of passengers and seating not more than nine persons, including the driver. Taxis, jeep-type vehicles and station wagons are included. Special-purpose vehicles, such as two- or three-wheeled cycles or motorcycles, trams, trolley buses, ambulances, hearses and military vehicles operated by police or other governmental security organizations, are excluded. Per 1,000 population figures are based on population figures (WPP2012). **Aggregate calculations:** Weighted averages using total population (WPP2012) as weight. Missing data are imputed.

Road traffic deaths (number)

Number of deaths caused by traffic accidents during a given period. **Aggregate calculations:** Sum of individual country values.

Road traffic deaths (per 100,000 population)

Per 100,000 population figures are based on population figures (WPP2012). **Aggregate calculations:** Weighted averages using total population (WPP2012) as weight. Missing data are not imputed.

Energy consumption: aviation, road, rail and total (thousand tons of oil equivalent)

All transport activity (in mobile engines) regardless of the economic sector to which it is contributing (International Standard Industrial Classification Divisions 60 to 62), divided into subsectors of international and domestic aviation, road, rail and total. **Aggregate calculations:** Sum of individual country values. Missing data are not imputed.

CO_2 emissions: aviation, road, rail and total (million tons of CO_2)

Represents the values of CO_2 emissions from fossil fuel combustion by the transport sector. Emissions are expressed in million tons of CO_2 and calculated by the Organisation for Economic Co-operation and Development (OECD) using

International Energy Agency (IEA) energy databases and the default methods and emissions factors from the Revised 1996 Guidelines for National Greenhouse Gas Inventories of the Intergovernmental Panel on Climate Change. International and domestic aviation includes emissions from aviation fuels delivered to aircraft for international aviation bunker and domestic aviation: commercial, private and agricultural, among others. It includes use for purposes other than flying, such as bench testing of engines, but not airline use of fuel for road transport. Regarding roads, it covers the emissions arising from fuel use in road vehicles, including the use of agricultural vehicles on highways. Regarding rail transport, it covers emissions from rail traffic, including industrial railways. **Aggregate calculations:** Sum of individual country values. Missing data are not imputed.

Sources

Sources of railway, road, passenger car and port container data: WDI. Railway data are from the International Union of Railways (available from www.uic.org/). Road and passenger car data are from the International Road Federation World Road Statistics (available from www.irfnet.org/statistics.php) and data files. **Data obtained:** 2 July 2013 for railways, 7 August 2012 for roads and port containers, 10 January 2013 for passenger cars.

Source of Asian Highway Network data: ESCAP, Transport Division. **Data obtained:** 28 February 2012.

Source of road traffic death data: World Health Organization, *Global Status Report on Road Safety 2013*. Online data from Global Health Observatory Data Repository. "Mortality: Road traffic deaths by country" (available from http://apps.who.int/gho/data/node.main.A997?lang=en). **Data obtained:** 13 June 2013.

H.2.1 Railways and port container traffic

	Railway freight			Railway passenger kilometer			Port container traffic			
	Million ton-km			Million passenger-km			Million TEU		Per million dollars of GDP	
	1990	2000	2011	1990	2000	2011	2000	2010	2000	2010
East and North-East Asia	**1 105 654**	**1 371 015**	**2 604 304**	**531 514**	**711 428**	**1 083 292**	**63.13**	**189.91**	**9.78**	**14.98**
China	1 060 100	1 333 606	2 562 635	263 530	441 468	815 699	41.00	129.61	34.37	21.78
DPR Korea										
Hong Kong, China								23.70		105.72
Japan	26 803	22 313	20 255	237 551	240 793	244 591	13.10	18.06	2.77	3.29
Macao, China										
Mongolia	5 088	4 293	11 418	570	1 070	1 399				
Republic of Korea	13 663	10 803	9 996	29 863	28 097	21 603	9.03	18.54	16.93	18.27
South-East Asia	**9 156**		**15 257**	**28 731**		**33 323**	**32.94**	**73.86**	**55.34**	**38.97**
Brunei Darussalam								0.09		7.19
Cambodia	24	92		34	45			0.22		19.94
Indonesia	3 190		7 166	9 290		20 283	3.80	8.37	23.01	11.82
Lao PDR										
Malaysia	1 404	907	1 535	1 840	1 312	965	4.64	18.25	47.57	73.93
Myanmar	388			3 702				0.17		3.95
Philippines	12			341	171		3.03	4.95	37.41	24.79
Singapore							17.10	29.18	181.32	128.32
Thailand	3 291	3 384	2 455	11 612	9 935	7 504	3.18	6.65	25.20	19.49
Timor-Leste										
Viet Nam	847	1 902	4 101	1 913	3 200	4 571	1.19	5.98	38.17	56.22
South and South-West Asia	**259 243**	**333 760**	**649 198**	**333 959**	**466 053**	**1 024 309**	**6.23**	**25.54**	**7.82**	**8.07**
Afghanistan										
Bangladesh	651	777	710	4 587	3 941	7 305	0.46	1.36	10.03	13.60
Bhutan										
India	235 785	305 201	625 723	295 644	430 666	978 508	2.45	9.75	5.24	5.81
Iran (Islamic Rep. of)	9 041	14 179	21 008	4 573	7 119	17 877		2.59		6.04
Maldives								0.06		28.06
Nepal										
Pakistan	5 709	3 754	1 757	19 964	18 495	20 619		2.15		12.37
Sri Lanka	164	88		2 781			1.73	4.08	103.66	82.34
Turkey	7 894	9 761		6 410	5 832		1.59	5.55	5.97	7.59
North and Central Asia	**2 998 269**	**1 524 986**	**2 401 018**	**296 019**	**180 471**	**162 739**	**0.32**	**3.36**	**1.22**	**2.24**
Armenia	4 884	354	346	316	47	50				
Azerbaijan	37 288	5 770	7 846		493	660				
Georgia	15 477	3 912	6 055	1 969	453	641		0.23		19.43
Kazakhstan	406 963	124 983	223 584	19 734	10 215	16 595				
Kyrgyzstan			798			83				
Russian Federation	2 523 000	1 373 200	2 127 212	274 000	167 100	139 842	0.32	3.13	1.22	2.10
Tajikistan	10 657	1 326	703			32				
Turkmenistan			11 992			1 811				
Uzbekistan		15 441	22 482		2 163	3 025				
Pacific	**25 323**	**38 128**					**4.61**	**9.58**	**9.94**	**6.47**
American Samoa										
Australia	22 579	34 050	59 649		1 265	1 829	3.54	6.54	8.64	5.09
Cook Islands										
Fiji										
French Polynesia								0.07		10.32
Guam								0.18		
Kiribati										
Marshall Islands										
Micronesia (F.S.)										
Nauru										
New Caledonia								0.09		10.23
New Zealand	2 744	4 078					1.07	2.43	19.85	16.96
Niue										
Northern Mariana Islands										
Palau										
Papua New Guinea								0.27		27.68
Samoa										
Solomon Islands										
Tonga										
Tuvalu										
Vanuatu										
Asia and the Pacific	**4 397 645**	**3 274 174**	**5 729 426**	**1 190 223**	**1 373 880**	**2 305 492**	**107.23**	**302.23**	**12.51**	**14.60**
Developed countries	52 126	60 441	79 904	237 551	242 058	246 420	17.71	27.02	3.41	3.91
Developing countries	4 345 519	3 213 733	5 649 522	952 672	1 131 822	2 059 072	89.52	275.21	26.50	19.97
LLDC										
LDC	1 063			8 322				1.75		11.41
ASEAN	9 156		15 257	28 731		33 323	32.94	73.86	55.34	38.97
ECO	477 551	175 214	290 170	50 681	44 317	60 702		10.29		7.71
SAARC	242 308	309 820	628 190	322 975	453 102	1 006 432	4.64	17.40	8.75	8.68
Central Asia		151 786	273 806		13 371	22 897				
Pacific island dev. econ.								0.61		16.96
Low income econ.	11 720			8 322				1.75		11.41
Lower middle income econ.	271 155	334 945	679 048	332 787	456 265	1 029 096	12.20	35.78	16.02	12.18
Upper middle income econ.	4 048 981	2 865 790	4 958 267	581 699	643 474	1 000 953	50.73	165.83	26.11	18.05
High income econ.	65 789	71 244	89 900	267 414	270 155	268 023	43.84	98.87	7.53	11.74
Africa				**57 993**	**54 423**					**13.22**
Europe	**960 515**	**619 236**	**637 195**	**440 442**	**443 431**	**479 616**		**86.52**	**6.02**	**5.09**
Latin America and Carib.	**166 675**		**353 928**	**20 468**			**15.86**	**39.97**	**7.58**	**7.79**
North America	**1 658 581**	**2 142 145**	**2 778 654**			**12 404**	**31.23**	**47.00**	**2.94**	**2.94**
World	**7 315 468**	**6 331 417**	**9 643 801**	**1 710 590**	**1 873 809**	**2 861 497**	**214.27**	**525.78**	**7.18**	**8.52**

H.2.2 Railway – road infrastructure, passenger cars and traffic deaths

	Railway density			Road density			Paved roads			Passenger cars		Road traffic deaths	
	Km of railway per 1,000 km² land area			Km of road per 1,000 km² land area			% of roads			Per 1,000 population		Number	Per 100,000 population
	1990	2000	2010	1990	2000	2009	2000	2005	2008	2003	2010	2010	2010
East and North-East Asia	**6.9**	**7.4**	**8.1**			**458**		**50.7**	**59.5**	**53**	**85**	**292 497**	**19.0**
China	5.7	6.3	7.1			414		40.8	53.5	10	44	275 983	20.6
DPR Korea				231	259		6.4					2 614	10.7
Hong Kong, China								100.0	100.0	52	59		
Japan	55.6	55.3	55.0	3 057	3 200	3 314	76.6	79.0	79.9	433	453	6 625	5.2
Macao, China							100.0	100.0	100.0	125	148		
Mongolia	1.2	1.2	1.2	27	32		3.5			28		491	17.8
Republic of Korea	31.3	31.6	34.9	574	881	1 083	74.5	76.8	78.5	215	276	6 784	14.1
South-East Asia				**186**							**43**	**117 360**	**19.7**
Brunei Darussalam						564 (08)	34.7	78.4	81.1	395		27	6.8
Cambodia	3.4	3.4		203								2 431	17.2
Indonesia				159	196	263	57.1	55.4	59.1		37	42 434	17.7
Lao PDR						171		13.4	13.5			1 266	20.4
Malaysia	5.1	4.9	5.1				76.2			225	325	7 085	24.9
Myanmar	5.1			38	43		111.4	11.9		4	5	7 177	15.0
Philippines	1.6	1.6		538	676						9	8 499	9.1
Singapore				4 176	4 584	4 794	100.0	100.0	100.0	97	117	259	5.1
Thailand	7.6	8.0	8.7	141			98.5			54	67	26 312	38.1
Timor-Leste												219	19.5
Viet Nam	8.7	10.1	7.6	295		516 (07)						21 651	24.6
South and South-West Asia	**14.0**	**14.2**	**14.5**	**419**	**625**	**740 (08)**	**46.2**	**46.6**	**52.4**	**14**		**326 381**	**18.4**
Afghanistan								27.5			20	6 209	19.8
Bangladesh	21.1	21.3	21.8	1 444	1 594		9.5				2	17 289	11.6
Bhutan												96	13.2
India	21.0	21.1	21.5	673	1 115	1 382 (08)	47.5	47.0	49.5	8		231 027	18.9
Iran (Islamic Rep. of)	3.0	4.1	3.7	80		118		71.0				25 224	34.1
Maldives								100.0		5	11	6	1.9
Nepal					92	139 (08)		56.1	53.9			4 787	16.0
Pakistan	11.4	10.1	10.1	219	311	335	56.0				13	30 131	17.4
Sri Lanka	23.2			1 483							20	2 854	13.7
Turkey	11.0	11.3	12.5	477		471			88.5	66	104	8 758	12.0
North and Central Asia	**5.5**	**5.4**	**5.5**	**59**		**65**		**83.8**		**136**		**37 899**	**17.6**
Armenia	29.7	29.6	29.0	270		271		90.0	90.5			558	18.0
Azerbaijan		25.6	25.2							49	84	1 202	13.1
Georgia	22.8	22.5	22.5	311	293	293 (07)				56	130	685	15.7
Kazakhstan	5.4	5.0	5.3			36		91.2	89.9	77	189	3 514	21.9
Kyrgyzstan			2.2			177 (07)	91.1			37	63	1 022	19.2
Russian Federation	5.2	5.3	5.2	54		60		84.4		161		26 567	18.6
Tajikistan			4.4	213	198							1 244	18.1
Turkmenistan			6.6	45	51		81.2						
Uzbekistan		8.6	9.9	170	192		87.3					3 107	11.3
Pacific	**1.3**			**110**	**110**	**111**			**44.1**	**416**	**437**	**2 879**	**8.1**
American Samoa													
Australia	0.9	1.2	1.1	105	106	106			42.7	524	556	1 363	6.1
Cook Islands												2	9.9
Fiji				167	188		49.2			90	118	54	6.3
French Polynesia													
Guam													
Kiribati					827							6	6.0
Marshall Islands												4	7.4
Micronesia (F.S.)					343		17.5					2	1.8
Nauru													
New Caledonia													
New Zealand	15.3			352	350	358	62.8	64.9	65.9	574	599	398	9.1
Niue												1	68.1
Northern Mariana Islands													
Palau												3	14.7
Papua New Guinea				41	43		3.5					892	13.0
Samoa												30	16.4
Solomon Islands				43	50		2.4					79	14.7
Tonga					944		27.0					6	5.8
Tuvalu													
Vanuatu					88		23.9					39	16.3
Asia and the Pacific	**6.1**	**6.3**	**6.5**			**266 (08)**		**51.4**	**57.1**	**41**		**777 016**	**18.6**
Developed countries	3.7	4.0	3.9	243	249	255	61.1	62.8	64.9	449	472	8 386	5.5
Developing countries	6.6	6.8	7.0			269 (08)		49.2	55.7	24		768 630	19.2
LLDC												23 496	16.9
LDC	7.0			165	176		13.8				6	39 628	14.0
ASEAN				186			46.2				43	117 141	19.7
ECO	6.4	6.4	6.7	129		150					60	80 411	19.3
SAARC	19.1	19.0	19.3	525	820	1 001 (08)	46.7	46.7	48.9	7		292 399	17.9
Central Asia		6.2	6.6									11 332	15.7
Pacific island dev. econ.				50	54		11.0					1 118	12.3
Low income econ.	6.0			176	187		23.3				7	42 773	13.8
Lower middle income econ.	10.7	10.6	10.6	331	499	604 (08)	47.8	47.8	50.1			344 130	18.2
Upper middle income econ.	5.5	5.7	6.0			182		.4	63.4	35	71	374 654	21.3
High income econ.	4.0	4.4	4.3	247	257	265	61.7	63.6	65.7	376	405	15 456	7.5
Africa		**3.7**										**223 765**	**23.2**
Europe	**50.5**	**47.2**	**49.9**	**1 139**	**1 079**	**1 133**	**85.2**			**400**	**434**	**44 607**	**7.5**
Latin America and Carib.	**4.4**		**5.5**	**143**	**154**		**14.9**			**103**		**110 289**	**19.2**
North America	**12.4**	**10.3**	**15.7**	**387**	**407**	**436**		**60.8**	**62.5**	**476**	**606**	**37 786**	**11.0**
World	**8.0**	**8.2**	**9.3**	**224**		**271 (08)**				**117**		**1 225 932**	**18.1**

H.2.3 Asian highway

	Primary		Class I		Class II		Class III		Below III		Total	
	Km		Km		Km		Km		Km		Km	
	2004	2010	2004	2010	2004	2010	2004	2010	2004	2010	2004	2010
East and North-East Asia	**5 717**	**16 454**	**386**	**2 885**	**3 433**	**7 723**	**2 353**	**3 618**	**4 944**	**3 051**	**33 553**	**34 466**
China	4 140	14 859	189	2 076	2 749	6 280	2 008	3 460	1 443	32	25 929	26 707
DPR Korea	0	0	0	492	0	15	0	0	0	220	1 320	1 462
Hong Kong, China												
Japan	1 111	1 138	0	0	0	0	0	0	0	0	1 111	1 138
Macao, China												
Mongolia	0	0	0	8	440	1 356	345	158	3 501	2 799	4 286	4 321
Republic of Korea	466	457	197	309	244	72	0	0	0	0	907	838
South-East Asia	**1 323**	**1 397**	**3 237**	**4 267**	**6 043**	**8 213**	**10 170**	**8 071**	**2 630**	**2 087**	**23 594**	**24 071**
Brunei Darussalam												
Cambodia	0	0	0	0	398	510	743	835	199	0	1 340	1 347
Indonesia	335	409	18	603	1 600	3 045	1 965	0	0	0	3 952	4 091
Lao PDR	0	0	0	0	0	244	2 375	2 307	0	306	2 378	2 857
Malaysia	795	795	67	61	733	817	0	0	0	0	1 595	1 673
Myanmar	0	0	147	147	144	0	983	1 798	1 729	1 064	3 003	3 009
Philippines	0	0	17	17	27	27	2 872	2 872	451	451	3 517	3 367
Singapore	11	11	8	8	0	0	0	0	0	0	19	19
Thailand	182	182	2 572	3 049	1 226	1 723	1 128	155	0	2	5 112	5 111
Timor-Leste												
Viet Nam	0	0	408	382	1 915	1 847	104	104	251	264	2 678	2 597
South and South-West Asia	**2 322**	**3 064**	**2 842**	**10 246**	**12 361**	**13 293**	**17 869**	**11 834**	**6 060**	**3 140**	**41 454**	**41 742**
Afghanistan	0	0	0	10	621	2 519	77	0	3 549	1 718	4 247	4 247
Bangladesh	0	0	20	68	441	1 574	476	32	868	83	1 805	1 762
Bhutan	0	0	0	7	6	116	0	0	161	47	167	170
India	0	90	484	4 069	0	1 675	10 869	5 699	105	117	11 458	11 810
Iran (Islamic Rep. of)	752	1 160	1 067	3 788	9 334	6 186	0	0	0	0	11 153	11 134
Maldives												
Nepal	0	0	0	0	311	34	1 003	1 243	12	37	1 326	1 314
Pakistan	358	357	1 116	1 116	160	254	2 569	2 475	1 174	1 138	5 377	5 340
Sri Lanka	0	0	0	49	269	435	190	166	191	0	650	650
Turkey	1 212	1 457	155	1 139	1 219	500	2 685	2 219	0	0	5 271	5 315
North and Central Asia	**0**	**0**	**1 706**	**4 815**	**12 796**	**24 695**	**19 311**	**10 314**	**8 629**	**2 701**	**42 670**	**42 525**
Armenia	0	0	142	147	377	766	479	13	0	40	998	966
Azerbaijan	0	0	82	280	1 012	1 184	348	0	0	0	1 670	1 464
Georgia	0	0	8	52	788	1 049	358	0	0	0	1 154	1 101
Kazakhstan	0	0	72	557	767	5 407	10 004	6 389	2 346	475	13 189	12 828
Kyrgyzstan	0	0	0	0	464	604	511	682	720	409	1 695	1 695
Russian Federation	0	0	1 147	2 524	8 334	13 618	3 210	440	4 178	812	16 869	17 394
Tajikistan	0	0	0	0	289	966	603	0	1 033	941	1 925	1 907
Turkmenistan	0	0	0	60	0	0	2 180	2 120	24	24	2 204	2 204
Uzbekistan	0	0	255	1 195	765	1 101	1 618	670	328	0	2 966	2 966
Pacific												
American Samoa												
Australia												
Cook Islands												
Fiji												
French Polynesia												
Guam												
Kiribati												
Marshall Islands												
Micronesia (F.S.)												
Nauru												
New Caledonia												
New Zealand												
Niue												
Northern Mariana Islands												
Palau												
Papua New Guinea												
Samoa												
Solomon Islands												
Tonga												
Tuvalu												
Vanuatu												
Asia and the Pacific	**9 362**	**20 915**	**8 171**	**22 213**	**34 633**	**53 924**	**49 703**	**33 837**	**22 263**	**10 979**	**141 271**	**142 804**
Developed countries	1 111	1 138	0	0	0	0	0	0	0	0	1 111	1 138
Developing countries	8 251	19 777	8 171	22 213	34 633	53 924	49 703	33 837	22 263	10 979	140 160	141 666
LLDC	0	0	551	2 264	5 052	14 297	19 543	13 582	11 674	6 796	37 051	36 939
LDC	0	0	167	232	1 921	4 997	5 657	6 215	6 518	3 255	14 266	14 706
ASEAN	1 323	1 397	3 237	4 267	6 043	8 213	10 170	8 071	2 630	2 087	23 594	24 071
ECO	2 322	2 974	2 747	8 145	14 631	18 721	20 595	14 555	9 174	4 705	49 697	49 100
SAARC	358	447	1 620	5 319	1 808	6 607	15 184	9 615	6 060	3 140	25 030	25 293
Central Asia	0	0	559	2 291	4 462	11 077	16 101	9 874	4 451	1 889	25 801	25 131
Pacific island dev. econ.												
Low income econ.	0	0	167	717	2 668	6 222	4 396	4 590	8 110	4 472	16 661	16 743
Lower middle income econ.	693	856	2 448	7 645	6 347	11 915	23 744	14 464	6 162	5 162	39 581	40 236
Upper middle income econ.	7 081	18 453	5 351	13 534	25 374	35 715	21 563	14 783	7 991	1 345	82 992	83 830
High income econ.	1 588	1 606	205	317	244	72	0	0	0	0	2 037	1 995
Africa												
Europe												
Latin America and Carib.												
North America												
World												

H.2.4 Energy consumption and CO_2 emission by transport type

	Final energy consumption: Transport						CO_2 emission: Transport			
	Total			Road	Rail	Aviation	Total			Road
	Thousand tons of oil equivalent						Million tons of CO_2			
	1990	2000	2010	2010	2010	2010	1990	2000	2010	2010
East and North-East Asia	**126 886**	**200 845**	**283 643**	**234 127**	**14 400**	**35 282**	**380**	**594**	**825**	**686**
China	36 998	82 007	174 165	134 584	12 027	16 821	117	245	508	395
DPR Korea	1 560	563	296	296			5	2	1	1
Hong Kong, China	1 481	3 745	1 847	1 847		5 465	5	11	6	6
Japan	71 753	87 936	76 947	68 631	1 857	8 627	210	256	223	201
Macao, China										
Mongolia	522	328	475	331	144	17	2	1	1	1
Republic of Korea	14 572	26 266	29 914	28 439	373	4 352	43	78	87	82
South-East Asia	**32 369**	**62 436**	**92 662**	**86 504**		**17 246**	**97**	**186**	**271**	**252**
Brunei Darussalam	188	274	395	395		111	1	1	1	1
Cambodia		433	630	513	82	32		1	2	2
Indonesia	10 712	21 873	35 887	31 576		2 982	32	65	106	93
Lao PDR										
Malaysia	4 756	10 495	14 427	14 397	18	2 386	14	31	42	42
Myanmar	444	1 157	812	639	67	80	1	3	2	2
Philippines	4 520	8 103	8 044	7 098	10	1 225	14	24	24	21
Singapore	1 358	1 993	2 829	2 665	151	5 742	4	6	8	8
Thailand	9 011	14 609	19 493	19 326	89	3 762	27	44	55	55
Timor-Leste										
Viet Nam	1 380	3 499	10 144	9 895		927	4	10	30	29
South and South-West Asia	**55 323**	**80 423**	**128 538**	**118 854**	**4 460**	**9 700**	**168**	**239**	**374**	**348**
Afghanistan										
Bangladesh	544	996	2 981	2 346	270	168	2	3	8	6
Bhutan										
India	27 096	31 986	55 491	48 818	3 746	5 410	83	94	161	145
Iran (Islamic Rep. of)	13 030	25 491	41 110	40 585		1 284	39	76	119	117
Maldives										
Nepal	111	270	625	624	0	88	0	1	2	2
Pakistan	4 499	8 236	11 394	11 053	249	888	14	25	33	32
Sri Lanka	819	1 685	2 307	2 171	20	233	2	5	7	7
Turkey	9 224	11 758	14 631	13 256	175	1 629	28	35	44	39
North and Central Asia	**132 863**	**85 175**	**109 910**	**58 150**	**6 087**	**13 212**	**341**	**216**	**278**	**170**
Armenia	1 049	207	501	491	6	44	3	1	1	1
Azerbaijan	1 432	744	1 767	1 551	40	495	4	2	5	5
Georgia	1 338	358	756	684	55	41	4	1	2	2
Kazakhstan	5 453	3 321	4 710	4 088	251	224	14	9	13	12
Kyrgyzstan	2 020	294	876	870	4	412	6	1	3	3
Russian Federation	115 872	74 475	96 485	47 885	5 635	11 483	296	188	242	140
Tajikistan	269	18	104	102	2	28	1	0	0	0
Turkmenistan	3 352	1 858	1 651	833	20	331	8	5	4	2
Uzbekistan	2 076	3 899	3 059	1 645	74	155	6	10	8	5
Pacific	**24 071**	**29 723**	**33 225**	**27 999**	**1 079**	**6 750**	**70**	**86**	**96**	**81**
American Samoa										
Australia	21 111	25 657	28 617	23 876	1 033	5 623	61	74	82	69
Cook Islands										
Fiji										
French Polynesia										
Guam										
Kiribati										
Marshall Islands										
Micronesia (F.S.)										
Nauru										
New Caledonia										
New Zealand	2 961	4 066	4 609	4 123	46	1 128	9	12	14	12
Niue										
Northern Mariana Islands										
Palau										
Papua New Guinea										
Samoa										
Solomon Islands										
Tonga										
Tuvalu										
Vanuatu										
Asia and the Pacific	**371 511**	**458 601**	**647 978**	**525 634**	**26 442**	**82 191**	**1 056**	**1 321**	**1 844**	**1 536**
Developed countries	95 824	117 659	110 172	96 630	2 935	15 378	280	343	319	282
Developing countries	275 688	340 942	537 806	429 005	23 507	66 813	776	978	1 526	1 254
LLDC	16 285	10 939	13 768	10 536	541	1 793	43	29	38	31
LDC	1 099	2 856	5 049	4 123	420	368	3	9	14	12
ASEAN	32 369	62 436	92 662	86 504		17 246	97	186	271	252
ECO	41 356	55 620	79 302	73 984	815	5 445	119	163	228	214
SAARC	33 069	43 174	72 798	65 013	4 285	6 788	101	128	211	191
Central Asia	16 990	10 699	13 424	10 265	452	1 730	45	29	36	30
Pacific island dev. econ.										
Low income econ.	4 949	3 732	6 324	5 391	425	808	15	11	18	15
Lower middle income econ.	54 011	80 174	128 058	113 762	4 303	11 922	163	237	373	335
Upper middle income econ.	199 128	224 759	368 439	276 506	18 256	38 414	546	634	1 033	807
High income econ.	113 423	149 936	145 157	129 976	3 458	31 047	332	438	420	379
Africa	**36 470**	**52 514**	**74 514**	**68 267**		**9 344**	**107**	**154**	**220**	**203**
Europe	**294 310**	**329 564**	**351 685**	**322 182**	**9 078**	**52 409**	**853**	**958**	**991**	**924**
Latin America and Carib.	**102 024**	**139 767**	**194 916**	**182 519**	**2 218**	**13 962**	**285**	**395**	**530**	**495**
North America	**530 687**	**640 379**	**642 930**	**553 890**	**11 103**	**76 268**	**1 544**	**1 857**	**1 791**	**1 540**
World	**1 581 022**	**1 955 974**	**2 362 933**	**1 745 803**	**49 659**	**250 067**	**4 596**	**5 709**	**6 756**	**4 972**

Explanatory notes and statistical methods

The methods of compiling data and metadata for this *Yearbook*, and of calculating the indicators and data aggregates, are described in the following sections.

Compilation of data and metadata

The Yearbook presents data from 58 regional ESCAP member countries and areas compiled from United Nations agencies and other international sources. World, regional, subregional and economic aggregates are also presented, most of which are calculated by ESCAP. The regional ESCAP member countries and areas include members and associate members of ESCAP that are geographically located in the Asian and the Pacific region. The *Yearbook* contains data for selected years. Data for all available years may be accessed from the online database at www.unescap.org/stat/data/.

Country-level data have been collected from international sources of official statistics. For each indicator, the definition and source of data, along with other metadata, is given at the end of each topic where the indicator is discussed. To collect the most recent available data for each indicator, ESCAP researches online and print publications, consults experts on specific indicators and monitors the release dates of international reports and databases. In some cases, country level data have been received directly from international organizations: UNAIDS for HIV and AIDS, UNESCO-UIS for education, UNWTO for tourism.

The *Yearbook* strives to present the most recent, internationally comparable data available as of 31 August 2013. In order to maximize comparability, high quality, internationally comparable data sources have been used. Nonetheless, differences in statistical methods may still exist across countries; and, while aiming for international comparability, ESCAP statisticians do not have specialized expertise in all the areas covered in the Yearbook and thus cannot ensure full comparability. The status of each data point, which specifies whether the original data source is (a) a country or (b) an international agency, is available in the online database.

On the basis of the country-level data, ESCAP calculates:

- Additional indicators (growth rates, periods averages, ratios derived indicators, such as "percentage of population" or percentage of GDP", etc.)[1]
- Aggregates for the world, regions and subregions, and economic groupings of countries[2]

Calculation of indicators

The technical notes indicate whether the indicator was calculated by ESCAP or obtained from another international agency.

The following types of calculations were performed in deriving indicator values. They are listed here in the order in which they are typically performed:

- imputation of land area
- growth rates
- ratios (such as per capita figures)
- percentages (such as percentage of GDP)
- constant price values using implicit price deflators
- period averages (such as five year averages)

Imputation of land area

A number of environment indicators are expressed as a percentage of total land area. To permit calculation and comparison of such indicators across countries and years, ESCAP completes the information for years where the source — the FAO land area database — does not contain a value. Land area is imputed using the value from the previous or following year. The margin of error is small because the land area of a country normally remains constant. If there is evidence that country borders have changed, the imputation is not completed. Calculations involving imputed land area are included in this Yearbook, although land areas themselves are only published online.

Ratios and percentages

Ratios are only displayed if data for the numerator is non-missing; and data for the denominator is non-missing and non-zero. Per capita figures and mortality rates are a few examples of ratios calculated by ESCAP.

[1] The following section on calculation of indicators describes the methodology in full.

[2] Not all aggregates are calculated by ESCAP; the following section on aggregation methods provides full details on aggregation methods.

Indicators expressed as percentages (such as percentage of GDP, land area or population) are calculated following the same methodology as ratios.

For this *Yearbook*, per capita figures were calculated using the United Nations population database *World Population Prospects: The 2012 Revision* (WPP2012) and GDP figures were calculated using the United Nations Statistical Division National Accounts Main Aggregates Database (NAMAD). As NAMAD GDP for 2012 were not available during the preparation of this *Yearbook*, 2012 GDP data are estimated on the basis of 2012 GDP growth rate as available from IMF *World Economic Outlook* applied to 2011 GDP figures available from NAMAD.

Growth rates in tables

Growth rates are presented as percentage change per annum.

Where annual data are measured in absolute terms, the rates of change from one year to the next are calculated as proportional changes from the earlier period. Rates of change over several years are calculated using the geometric growth model. The geometric growth rate uses discrete compounding.

Where the underlying data are measured in levels, the formula for the average annual percentage change in indicator P over n periods is

$$r = [(P_n / P_0)^{1/n} - 1] * 100.$$

Constant price values using implicit price deflators

Implicit price deflators with a 2005 base, from NAMAD, are used in converting current price data to constant 2005 prices, as follows:

Constant price values using implicit price deflators

$$K_t^{2005} = C_t / I_t^{2005}$$

Where K_t^{2005} is the 2005 constant price value for year t; C_t is the current price value for year t; and I_t^{2005} is the 2005 implicit price deflator for year t.

Period averages

In the *Yearbook*, period averages, such as five-year averages, are calculated either as (a) a simple arithmetic mean, if the period average is based on an indicator from an international data source that is not ESCAP; or (b) the sum of the numerator (for the ratio or percentage) divided by the sum of the denominator over the period. Data are not imputed for the purpose of calculating period averages.

Country names and groupings

"Asia and the Pacific" in this Yearbook refers to the 58 regional members and associate members of the Economic and Social Commission for Asia and the Pacific. The 58 regional members and associate members are referred to as "countries" throughout the *Yearbook* even though some territories which are not countries are included. Some countries referred to by a shortened version of their official name in tables and charts, as indicated in brackets in the listing below.

Asia-Pacific subregions

By geographic subregion, the countries and areas of Asia and the Pacific are:

East and North-East Asia (ENEA): China; Democratic People's Republic of Korea (DPR Korea); Hong Kong, China; Japan; Macao, China; Mongolia; Republic of Korea.

South-East Asia (SEA): Brunei Darussalam; Cambodia; Indonesia; Lao People's Democratic Republic (Lao PDR); Malaysia; Myanmar; Philippines; Singapore; Thailand; Timor-Leste; Viet Nam.

South and South-West Asia (SSWA): Afghanistan; Bangladesh; Bhutan; India; Iran (Islamic Republic of) (Iran (Islamic Rep. of)); Maldives; Nepal; Pakistan; Sri Lanka; Turkey.

North and Central Asia (NCA): Armenia; Azerbaijan; Georgia; Kazakhstan; Kyrgyzstan; Russian Federation; Tajikistan; Turkmenistan; Uzbekistan.

Pacific: American Samoa; Australia; Cook Islands; Fiji; French Polynesia; Guam; Kiribati; Marshall Islands; Micronesia (Federated States of) (Micronesia (F.S.));

Nauru; New Caledonia; New Zealand; Niue; Northern Mariana Islands (Northern Mariana Is.); Palau; Papua New Guinea; Samoa; Solomon Islands; Tonga; Tuvalu; Vanuatu.

Development status

ESCAP developed countries: Australia, Japan and New Zealand.

ESCAP developing countries: refers to all countries in Asia and the Pacific except Australia, Japan and New Zealand.

Economic groupings

The classification of countries into income groups is from the World Bank. The World Bank divides countries according to their 2011 gross national income (GNI) per capita, calculated using the World Bank Atlas method. Group classifications are: low income ($1, 025 or less); lower-middle income ($1,026-4,035); upper-middle income ($4,036-12,475); and high income ($12,476 or more).

Low-income economies: Afghanistan; Bangladesh; Cambodia; Democratic People's Republic of Korea; Kyrgyzstan; Myanmar; Nepal; Tajikistan.

Lower middle-income economies: Armenia; Bhutan; Fiji; Georgia; India; Indonesia; Kiribati; Lao People's Democratic Republic; Marshall Islands; Micronesia (Federated States of); Mongolia; Pakistan; Papua New Guinea; Philippines; Samoa; Solomon Islands; Sri Lanka; Timor-Leste; Tonga; Uzbekistan; Vanuatu; Viet Nam.

Upper middle-income economies: American Samoa; Azerbaijan; China; Iran (Islamic Republic of); Kazakhstan; Malaysia; Maldives; Palau; Russian Federation; Thailand; Turkey; Turkmenistan; Tuvalu.

High-income economies: Australia; Brunei Darussalam; French Polynesia; Guam; Hong Kong, China; Japan; Macao, China; New Caledonia; New Zealand; Northern Mariana Islands; Republic of Korea; Singapore.

Other Asia-Pacific groupings

Within Asia and the Pacific, the following groupings are also used:

Landlocked developing countries: (LLDCs): Afghanistan; Armenia; Azerbaijan; Bhutan; Kazakhstan; Kyrgyzstan; Lao People's Democratic Republic; Mongolia; Nepal; Tajikistan; Turkmenistan; Uzbekistan.

Least developed countries (LDCs): Afghanistan; Bangladesh; Bhutan; Cambodia; Kiribati; Lao People's Democratic Republic; Myanmar; Nepal; Samoa; Solomon Islands; Timor-Leste; Tuvalu; Vanuatu.

Pacific island developing economies (PIDEs): American Samoa; Cook Islands; Fiji; French Polynesia; Guam; Kiribati; Marshall Islands; Micronesia (Federated States of); Nauru; New Caledonia; Niue; Northern Mariana Islands; Palau; Papua New Guinea; Samoa; Solomon Islands; Tonga; Tuvalu; Vanuatu.

Association of Southeast Asian Nations (ASEAN): Brunei Darussalam; Cambodia; Indonesia; Lao People's Democratic Republic; Malaysia; Myanmar; Philippines; Singapore; Thailand; Viet Nam.

Economic Cooperation Organization (ECO): Afghanistan; Azerbaijan; Iran (Islamic Republic of); Kazakhstan; Kyrgyzstan; Pakistan; Tajikistan; Turkey; Turkmenistan; Uzbekistan.

South Asian Association for Regional Cooperation (SAARC): Afghanistan; Bangladesh; Bhutan; India; Maldives; Nepal; Pakistan; Sri Lanka.

Central Asia: Armenia; Azerbaijan; Georgia; Kazakhstan; Kyrgyzstan; Tajikistan; Turkmenistan; Uzbekistan.

Regions of the world

For comparative purposes, aggregates are also presented for the major regions of the world as follows:

Africa: Algeria; Angola; Benin; Botswana; Burkina Faso; Burundi; Cameroon; Cape Verde; Central African Republic; Chad; Comoros; Congo; Côte d'Ivoire; Democratic Republic of the Congo; Djibouti; Egypt; Equatorial Guinea; Eritrea; Ethiopia; Gabon; Gambia; Ghana; Guinea; Guinea-Bissau; Kenya; Lesotho; Liberia; Libya; Madagascar; Malawi; Mali; Mauritania; Mauritius; Mayotte; Morocco; Mozambique; Namibia; Niger; Nigeria; Réunion; Rwanda; Saint Helena; Sào Tomé and PrÌncipe; Senegal; Seychelles; Sierra Leone; Somalia; South Africa; South Sudan; Sudan; Swaziland; Tanzania (United Republic of); Togo; Tunisia; Uganda; Western Sahara; Zambia; Zimbabwe.

Asia-Pacific region: As described above.

Latin America and Caribbean (LAC): Anguilla; Antigua and Barbuda; Argentina; Aruba; Bahamas; Barbados; Belize; Bolivia; Bonaire; Brazil; British Virgin Islands; Cayman Islands; Chile; Colombia; Costa Rica; Cuba;

Curacao; Dominica; Dominican Republic; Ecuador; El Salvador; Falkland Islands (Malvinas); French Guiana; Grenada; Guadeloupe; Guatemala; Guyana; Haiti; Honduras; Jamaica; Martinique; Mexico; Montserrat; Netherlands Antilles; Nicaragua; Panama; Paraguay; Peru; Puerto Rico; Saba; Saint Kitts and Nevis; Saint Lucia; Saint Martin (French part); Saint Vincent and the Grenadines; Sint Maarten (Dutch part); Suriname; Trinidad and Tobago; Turks and Caicos Islands; United States Virgin Islands; Uruguay; Venezuela (Bolivarian Republic of).

North America (North Am.): Bermuda; Canada; Greenland; Saint Pierre and Miquelon; United States of America.

Europe: Albania; Andorra; Austria; Belarus; Belgium; Bosnia and Herzegovina; Bulgaria; Channel Islands; Croatia; Cyprus; Czech Republic; Denmark; Estonia; Faeroe Islands; Finland; France; Germany; Gibraltar; Greece; Guernsey; Holy See; Hungary; Iceland; Ireland; Isle of Man; Italy; Jersey; Kosovo; Latvia; Liechtenstein; Lithuania; Luxembourg; Malta; Monaco; Montenegro; Netherlands; Norway; Poland; Portugal; Republic of Moldova; Romania; San Marino; Serbia; Slovakia; Slovenia; Spain; Svalbard and Jan Mayen Islands; Sweden; Switzerland; the former Yugoslav Republic of Macedonia; Ukraine; United Kingdom of Great Britain and Northern Ireland.

Other countries or areas: Bahrain; Iraq; Israel; Jordan; Kuwait; Lebanon; Norfolk Island; Occupied Palestinian Territories; Oman; Pitcairn; Qatar; Saudi Arabia; Syrian Arab Republic; Taiwan Province of China; Tokelau; United Arab Emirates; Wallis and Futuna Islands; Yemen.

Aggregation methods

Aggregate values are presented for subregional, regional, special economic and world groupings (as per the groupings above). World aggregates are taken directly from the data source when available. Subregional, regional, and economic groupings are calculated using ESCAP country groupings to ensure consistency throughout the *Yearbook*.

Some aggregates have been calculated by agencies responsible for the compilation and production of indicators under their area of expertise. These include some food security indicators (aggregates calculated by FAO); some employment indicators (aggregates calculated by ILO); and some education indicators (aggregates calculated by UIS). In such cases, the methodology may differ from the methods described below; additional information can be obtained from the respective agencies. When aggregates are not calculated by ESCAP, the source is indicated in the technical notes.

The calculation of aggregates involves three steps: (1) determining whether "enough" data are available (at least two thirds of the population for social indicators, and at least two thirds of GDP for economic indicators); (2) imputing missing values (not employed for all indicators); and (3) calculating the aggregate sum or weighted average.

For Millennium Development Goal indicators, in addition to aggregate values, the aggregate affected populations are also calculated following the methodology described in the technical note 1 of the Asia-Pacific Regional MDG Report 2011/12 (www.unescap.org/pdd/calendar/CSN-MDG-NewDelhi-Nov-2011/MDG-Report2011-12.pdf).

1. Determining whether "enough" data are available: the "two-thirds test"

To ensure that aggregates are representative, an aggregate is only calculated for a given year if the population (for social and environment indicators) or the GDP (for economic indicators) of countries with available values for that year covers more than two thirds of the total population or GDP of the group of countries under consideration. As population data (including 2012 data) and GDP data (up to 2011) are available for all United Nations Member States, the test for two thirds of the total population or GDP can be applied to all indicators in the *Yearbook*.

For data not expected to be available for every country (such as official development assistance [ODA], which is only received by specific developing countries), a slight modification of the above methodology is used. The two-thirds test is applied to the group of countries for which data are expected to be non-missing (such as recurrent ODA recipients).

2. Imputing missing values

If an indicator has passed the two-thirds test, but values are missing for some countries, then the missing country data may be imputed to present a more realistic aggregate (the technical notes specifies if missing values are imputed or not). Imputed values are only used in the calculation

of aggregates; they are not published online or in print (with the exception of land area). Two methodologies are applied for imputations: one for Millennium Development Goal indicators, and another for non-Millennium Development Goal indicators, as described below.

2a. Imputation methods: Millennium Development Goal indicators

For Millennium Development Goal indicators, missing values are imputed on the basis of the trend; however, if progress is negative, the latest available value is carried forward for future values. For a full description of the methods, see the Asia-Pacific MDG Report 2011/12 (http://www.unescap.org/pdd/calendar/CSN-MDG-NewDelhi-Nov-2011/MDG-Report2011-12.pdf).

2b: Imputation methods: non-Millennium Development Goal indicators

For non-Millennium Development Goal indicators, missing country values are imputed using the following methodology:

(a) If values are available for both a preceding and a following year, missing values are imputed using linear interpolation;

(b) If a preceding value is available but not a following value, the most recent year of data is carried forward;

(c) If a following value is available but not a preceding value, the most recent year of data is carried backward;

(d) For countries with only one data point for the whole period, that value is used for all missing years;

(e) If no data exist for any year for a country, no value is imputed. (Information from other countries is never used in imputing missing values.)

3. Calculating aggregate sums and weighted averages

Two types of aggregates are used in the Yearbook: straight sums and weighted averages. For calculated indicators, aggregates are based on the original indicator (as opposed to calculating the aggregate based on other aggregates).

If the aggregate is a sum, then the aggregate data are derived by finding the total sum of all country-level data within each aggregation group.

If the aggregate is a weighted average, then the aggregate data are derived by finding the weighted average of all data within each aggregation group. Weights have been determined by ESCAP for each indicator and are included in the technical notes. The weights are not imputed; if the weight is missing, then the country-level data for that country are not included. For ratios, denominators are used as weights.

List of online data sources

Asian Development Bank (ADB), Key Indicators	http://www.adb.org/publications/series/key-indicators-for-asia-and-the-pacific Online database: https://sdbs.adb.org/sdbs/index.jsp
EM-DAT: Emergency Events Database	http://www.emdat.be/
Food and Agriculture Organization of the United Nations (FAO), Global Forest Resources Assessment	http://www.fao.org/forestry/fra/fra2010/en/
Food and Agriculture Organization, Information System on Water and Agriculture (AQUASTAT)	http://www.fao.org/nr/water/aquastat/dbase/index.stm
Food and Agriculture Organization, FAOSTAT Emissions Agriculture database	http://faostat.fao.org/site/717/default.aspx#ancor
Food and Agriculture Organization, Food Security indicators	http://www.fao.org/economic/ess/ess-fs/fs-data/en/
Food and Agriculture Organization, FAOSTAT, ResourceSTAT-Land-use	http://faostat.fao.org/site/377/default.aspx#ancor
International Energy Agency Database	http://www.iea.org/
International Labour Organization (ILO), Key Indicators of the Labour Market, Seventh Edition	http://www.ilo.org/empelm/what/WCMS_114240/lang—en/index.htm
International Labour Organization LABORSTA – database of labour statistics	http://laborsta.ilo.org/
International Monetary Fund (IMF), International Financial Statistics	http://elibrary-data.imf.org/FindDataReports.aspx?d=33061&e=169393
International Monetary Fund (IMF), World Economic Outlook Database	http://www.imf.org/external/pubs/ft/weo/2013/01/
International Telecommunication Union (ITU), World Telecommunication/ICT Indicators Database	http://www.itu.int/en/ITU-D/Statistics/Pages/stat/
International Union for Conservation of Nature (IUCN), The IUCN Red List of Threatened Species	http://www.iucnredlist.org/
Inter-Parliamentary Union, Women in National Parliaments	http://ipu.org/wmn-e/world.htm
Joint United Nations Programme on HIV/AIDS (UNAIDS), Global Report: UNAIDS Report on the Global AIDS Epidemic 2012	http://www.aidsinfoonline.org
United Nations Statistics Division, National Accounts Main Aggregates Database	http://unstats.un.org/unsd/snaama/Introduction.asp
Organisation for Economic Co-operation and Development (OECD), Development Database on Aid from DAC Members	http://www.oecd.org
Organisation for Economic Co-operation and Development, OECD.StatExtracts	http://stats.oecd.org/
The Gender, Institutions and Development database, OECD Development Centre	http://www.oecd.org/dev/genderinstitutionsanddevelopmentdatabase.htm
ESCAP, Transport Division	http://www.unescap.org/ttdw/common/tis/ah/Database.asp
UNESCO Institute for Statistics, Data Centre	http://www.uis.unesco.org

United Nations, International Merchandise Trade Statistics (United Nations Commodity Trade Statistics Database (UN Comtrade))	http://comtrade.un.org/
United Nations Conference on Trade and Development (UNCTAD), International Trade Statistics, Foreign Direct Investment	http://unctadstat.unctad.org/
United Nations Conference on Trade and Development (UNCTAD), World Investment Report 2013	http://unctad.org/en/pages/PublicationWebflyer.aspx?publicationid=588
United Nations Environment Programme, Emission Database for Global Atmospheric Research (EDGAR)	http://edgar.jrc.ec.europa.eu/
United Nations Millennium Development Goals Indicators	http://mdgs.un.org/
United Nations Office on Drugs and Crime	http://www.unodc.org/unodc/en/data-and-analysis/statistics/index.html
United Nations Service Trade Statistics Database	http://unstats.un.org/unsd/servicetrade/
WHO World Malaria Programme, World Malaria Report 2012	http://www.who.int/malaria/publications/world_malaria_report_2012/en/
World Bank, Development Research Group	http://data.worldbank.org/
World Bank, Poverty and Inequality database	http://databank.worldbank.org/data/views/variableselection/selectvariables.aspx?source=poverty-and-inequality-database
World Bank, World Development Indicators	http://data.worldbank.org/data-catalog/world-development-indicators
World Health Organization, Department of Mental Health and Substance Abuse	http://www.who.int/mental_health/prevention/en/
World Health Organization, Global Health Observatory (WHO/GHO) Database	http://apps.who.int/ghodata/
World Health Organization, Global Status Report on Road Safety 2013	http://www.who.int/violence_injury_prevention/road_safety_status/2013/en/index.html
United Nations, World Migrant Stock, The 2008 Revision	http://esa.un.org/migration/
United Nations, World Population Prospects, The 2012 Revision	http://esa.un.org/unpd/wpp/
World Tourism Organization (UNWTO)	http://unwto.org/
World Trade Organization (WTO)	http://stat.wto.org/Home/WSDBHome.aspx?Language=E
United Nations, World Urbanization Prospects, The 2011 Revision	http://esa.un.org/unpd/wup/

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