

Goal 7: Ensure Environmental Sustainability

Between 1990 and 2005, at least 50,000 sq km of **forest area** were lost to other uses, and economies that are major producers of tropical hardwoods reported losses of between 10% and 40% in forest areas. Per capita emissions of **carbon dioxide** are rising in most economies of the region including the five most populous economies. Slightly over half of the economies for which data are available have reached the target of providing urban households with **improved water sources**.

Introduction

Goal 7 has four targets:

- 7.A *Integrate the principles of sustainable development into country policies and programs and reverse the loss of environmental resources.* This target is applicable to the developed as well as to the developing economies of the region, hence the relevant figures and boxes below include data for Australia, Japan, and New Zealand.
- 7.B *Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss.* This is a new target introduced in the revised MDG framework.
- 7.C *Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation.* The cut-off point is 5%, so the target is considered to have been reached if 95% or more of the population have access to these facilities.
- 7.D *By 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers.* Slums are defined as dwellings in urban areas with at least one of the following characteristics: (i) lack of access to improved water supply; (ii) lack of access to improved sanitation; (iii) overcrowding (three or more persons per room); and (iv) dwellings made of nondurable material. This target is for the world as a whole and does not refer to any particular economy.

Only the third target can be unambiguously quantified, but the tables for the other targets give statistics that indicate in a broad fashion progress toward those targets.

Key Trends

Environmental resources include land, forests, natural species, air, water, and subsoil assets. Table 7.1 gives indicators relevant to some aspects of these resources. Figure 7.1 shows the increase and decrease in forest areas between 1990 and 2005. It only covers economies that have reported changes during this period.

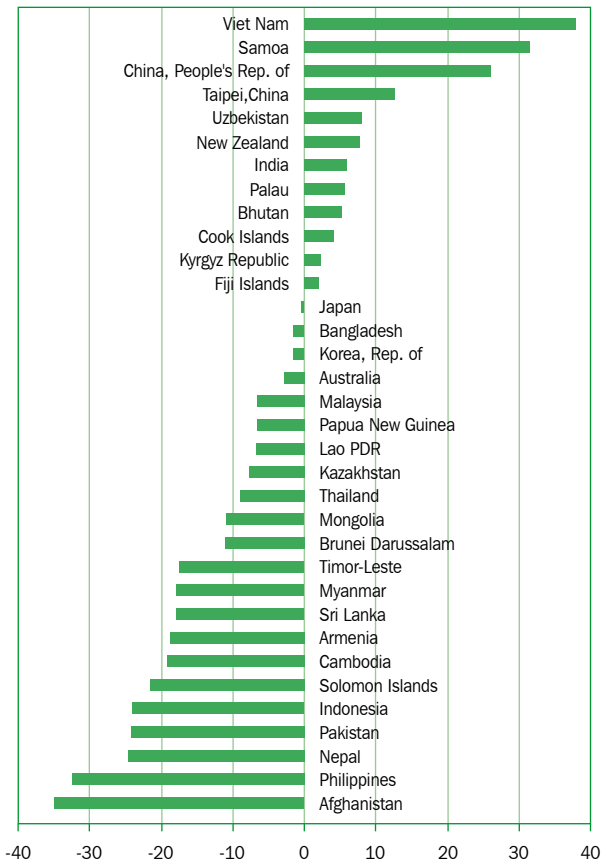
Four economies that are major sources of tropical hardwoods all reported reductions of between 10% and 40%, namely, Cambodia, Indonesia, Myanmar, and Philippines.

Some economies with large percentage changes in Figure 7.1 have relatively small forested areas. To show the physical change in forest areas, these changes need to be considered in conjunction with the size of the economies. Figure 7.2 shows the changes in forest area of 14 economies that reported large (more than 10,000

sq km) changes in forest areas between 1990 and 2005. The large increase reported by the People's Republic of China (PRC), and the smaller increases reported by India and Viet Nam were more than offset by the large decreases reported by Indonesia and the other 10 economies. The total decline in forest area for these economies was just over 50,000 sq km.

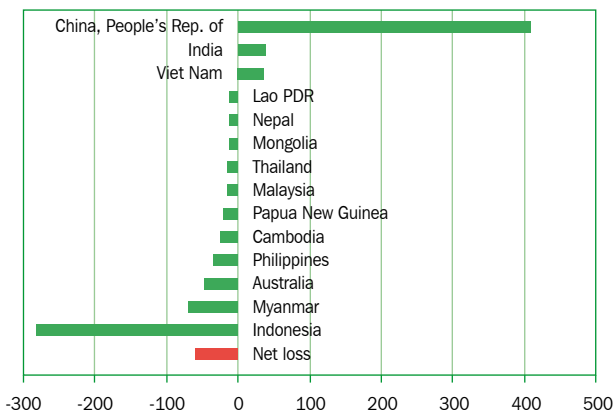
Figure 7.3 shows per capita emissions of carbon dioxide (CO₂) from consumption of carbon fuels for heating, transport, and electricity generation; emissions from cement production and gas flaring are also included. There is a positive correlation between per capita emissions and per capita income. Brunei Darussalam has the highest per capita GDP (in PPP terms) in the region and the highest per capita emissions. The developed member economies are also in the top part of Figure 7.3. On the other hand, Cambodia, Lao PDR, and Nepal are among the poorest economies in the region and have the lowest per capita CO₂ emissions.

Figure 7.1 Total Percentage Change in Proportion of Land Area Covered by Forests, 1990–2005



Source: Derived from Table 7.1.

Figure 7.2 Change in Land Area Covered by Forests, 1990–2005 (thousand square kilometers)



Sources: Derived from Table 7.1, Global Forest Resources Assessment 2008 (FAO), and Asia Pacific in Figures 2006 (UNESCAP).

Figure 7.3 Carbon Dioxide Emissions, 1990 and 2004 or Nearest Years (metric tons per capita)

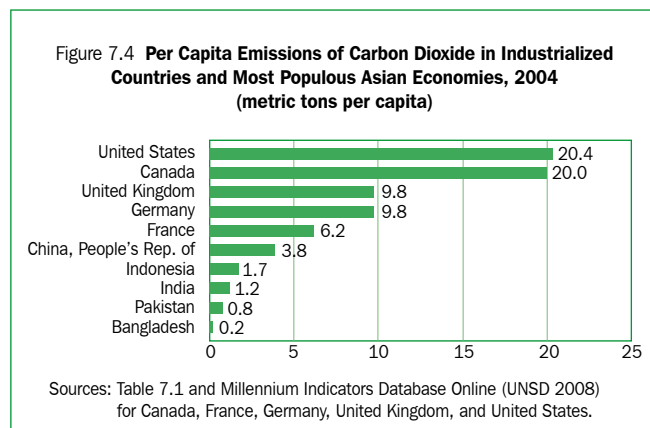


Source: Table 7.1.

Sixteen of the 44 economies in Figure 7.3 reduced per capita emissions between 1990 and 2004. Particularly large reductions were reported by Azerbaijan, Palau, and Tajikistan. Other economies reporting decreases include several countries of the former Soviet Union. Particularly large increases occurred in Republic of Korea; Malaysia; Taipei, China; and Thailand.

Among the five most populous developing economies, the PRC has the highest per capita emissions followed by Indonesia, India, and Pakistan; Bangladesh reports very low emissions. All five economies increased their emissions between 1990 and 2004; and although the increases were not large on a per capita basis, their contribution to global warming is substantial because of their huge populations.

Figure 7.4 puts into a global context carbon dioxide emissions by the five most populous economies of the Asia and the Pacific region. The differences between the five industrialized countries at the top of the table and the five Asian economies are striking. In 2004, each resident in the United States was emitting as much CO₂ as 83 Bangladeshis, 25 Pakistanis, 17 Indians, 12 Indonesians, or five Chinese.



If the huge populations of the five Asian economies were to emit CO₂ at the per capita levels currently typical of the industrialized countries, the consequences for climate change would be catastrophic. Future increases in per capita CO₂ emissions by Asian economies are inevitable as their living standards rise. Can these be counterbalanced by reduced per capita emissions in the industrialized countries of North America and Europe? France offers one possible solution. It has the lowest CO₂ emissions of the five industrialized countries because most of its electricity is generated by nuclear power.

Box 7.1 shows consumption of substances that deplete the ozone layer. Economies are grouped into four categories according to the levels of consumption for 2006 or the latest year. Low consumption levels were reported by the Pacific economies.

Box 7.1 **Consumption of All Ozone-Depleting Substances, 2006 or Latest Year (ODP metric tons)**

High consumers (over 1000)			
China, People's Rep. of	31549	Thailand	1464
Korea, Rep. of	6464	Japan	1058
India	5280		
Medium-high consumers (101-1000)			
Malaysia	965	Viet Nam	401
Philippines	809	Singapore	331
Pakistan	733	Bangladesh	218
Indonesia	554	Sri Lanka	118
Medium-low consumers (10-100)			
Afghanistan	99	Cambodia	35
Kazakhstan	80	Brunei Darussalam	29
Australia	69	Turkmenistan	22
Armenia	63	Lao PDR	19
New Zealand	38	Georgia	15
Low consumers (below 10)			
Kyrgyz Republic	9	Solomon Islands	1
Papua New Guinea	7	Bhutan	0
Fiji	5	Marshall Islands	0
Maldives	4	Micronesia, Fed. States of	0
Tajikistan	4	Samoa	0
Uzbekistan	4	Cook Islands	-
Mongolia	3	Kiribati	-
Azerbaijan	1	Nauru	-
Myanmar	1	Tonga	-
Nepal	1	Tuvalu	-
Palau	1	Vanuatu	-

Source: Table 7.1.

Target 7.C relating to access to improved water and sanitation is broken down into urban and rural areas. Box 7.2 shows progress toward achieving one of these targets, i.e., halving the proportion of urban households without access to improved water sources.

Slightly over half of the 40 economies in Box 7.2 (including PRC, India, and Pakistan) have achieved the target. Three Pacific economies are making progress but too slowly to reach the target by 2015. Regressing economies include Bangladesh and Indonesia, as well as a number of Pacific economies.

The data in Box 7.2 are also relevant for Target 7.D: *By 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers.* The revised MDG Framework includes lack of access to improved water supply as one of four criteria for defining slums, the others being lack of access to improved sanitation, overcrowding, and dwellings made from nondurable materials. As Box 7.2 shows, several economies are making progress in providing access to improved water sources for urban households. Table 7.3 also shows fairly good progress by a number of economies in the region in providing access to improved water sources for rural households and/or basic sanitation for both rural and urban households.

Box 7.2 Progress toward Halving the Proportion of Urban Households without Access to Improved Water Sources

Early achievers

Armenia	Malaysia
Azerbaijan	Maldives
Bhutan	Micronesia, Fed. States of
Cambodia	Pakistan
China, People's Rep. of	Philippines
Cook Islands	Singapore
Georgia	Sri Lanka
India	Thailand
Kazakhstan	Tonga
Korea, Rep. of	Uzbekistan
Kyrgyz Republic	Viet Nam

On track

Lao PDR

Slow progress

Kiribati	Tajikistan
Palau	Tuvalu

Regressing

Afghanistan	Nepal
Bangladesh	Papua New Guinea
Fiji Islands	Samoa
Indonesia	Solomon Islands
Marshall Islands	Timor-Leste
Mongolia	Vanuatu
Myanmar	

Source: Derived from Table 7.3.

Data Issues and Comparability

Data on forests and on land set aside for protecting biodiversity come from administrative sources supplemented by satellite imagery. They are broadly comparable and reasonably reliable. Information on CO₂ emissions comes mainly from international agencies and is derived by applying emission coefficients to estimates of fuel consumption, cement production, and gas flaring. Emissions by international carriers (ships and aircraft) are usually omitted because they cannot be assigned to a particular country.

Data on housing conditions come mainly from population or housing censuses or from sociodemographic and living standard surveys.

Goal 7 Targets

Table 7.1 **Target 7.A: Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources**

	7.1 Proportion of Land Area Covered by Forest (percent)		7.2 Carbon Dioxide Emissions (per capita, metric tons)		7.3 Consumption of All Ozone-Depleting Substances (ODP metric tons)	
	1990	2005	1990	2004	1990	2006
Developing Member Countries						
Central and West Asia						
Afghanistan	2.0	1.3	0.2	0.0	– (1991)	99
Armenia	12.3	10.0	1.1 (1992)	1.2	– (1991)	63
Azerbaijan	11.3	11.3	6.7 (1992)	3.8	3 (1991)	1
Georgia	39.7	39.7	2.8 (1992)	0.9	95 (1991)	15
Kazakhstan	1.3	1.2	15.8 (1992)	13.3	2356	80
Kyrgyz Republic	4.4	4.5	2.5 (1992)	1.1	134 (1991)	9
Pakistan	3.3	2.5	0.6	0.8	1456	733
Tajikistan	2.9	2.9	3.7 (1992)	0.8	93 (1991)	4
Turkmenistan	8.8	8.8	7.2 (1992)	8.8	145	22
Uzbekistan	7.4	8.0	5.5 (1992)	5.3	4 (1991)	4 (2005)
East Asia						
China, People's Rep. of	16.8	21.2	2.1	3.8	59674	31549
Hong Kong, China	...	...	4.6	5.4	...	...
Korea, Rep. of	64.5	63.5	5.6	9.8	– (1991)	6464
Mongolia	7.3	6.5	4.5	3.3	– (1991)	3
Taipei, China	51.6	58.1	5.8	12.5	...	...
South Asia						
Bangladesh	6.8	6.7	0.1	0.2	202	218
Bhutan	64.6	68.0	0.2	0.7	– (1991)	0
India	21.5	22.8	0.8	1.2	–	5280
Maldives	3.0	3.0	0.7	2.5	5	4
Nepal	33.7	25.4	0.0	0.1	25 (1991)	1
Sri Lanka	36.4	29.9	0.2	0.6	218	118
Southeast Asia						
Brunei Darussalam ^a	59.4	52.8	22.7	24.1	– (1991)	29
Cambodia	73.3	59.2	0.0	0.0	– (1991)	35
Indonesia	64.3	48.8	1.2	1.7	81 (1991)	554
Lao PDR	75.0	69.9	0.1	0.2	4 (1992)	19
Malaysia	68.1	63.6	3.1	7.0	4194	965
Myanmar	59.6	49.0	0.1	0.2	17 (1992)	1
Philippines	35.5	24.0	0.7	1.0	3477	809
Singapore	3.4	3.4	15.0	12.2	4855	331
Thailand	31.2	28.4	1.8	4.3	6984	1464
Viet Nam	28.8	39.7	0.3	1.2	430 (1991)	401
The Pacific						
Cook Islands	63.9	66.5	1.2	2.0	0 (1991)	–
Fiji Islands	53.6	54.7	1.1	1.3	42	5
Kiribati	3.0	3.0	0.3	0.3	0 (1991)	–
Marshall Islands	...	6.0 (1999)	...	...	1	0
Micronesia, Fed. States of	90.6	90.6	...	...	– (1991)	0
Nauru	...	–	14.4	14.2	– (1991)	–
Palau	82.9	87.6	15.7	11.9	– (1991)	1
Papua New Guinea	69.6	65.0	0.6	0.4	29 (1991)	7
Samoa	45.9	60.4	0.8	0.8	4 (1991)	0
Solomon Islands	98.9	77.6	0.5	0.4	2	1 (2005)
Timor-Leste	65.0	53.7	...	0.2	...	...
Tonga	5.0	5.0	0.8	1.2	0 (1991)	–
Tuvalu	33.3	33.3	...	...	– (1991)	– (2005)
Vanuatu	36.1	36.1	0.4	0.4	– (1991)	– (2005)
Developed Member Countries						
Australia	21.9	21.3	16.5	16.3	7434	69
Japan	68.4	68.2	8.7	9.8	120074	1058
New Zealand	28.8	31.0	6.6	7.8	1195	38

ODP = ozone-depleting potential.

a Brunei Darussalam is not a developing member country but an unclassified regional member country of ADB.

Sources: Millennium Indicators Database Online (UNSD 2008); *State of the World's Forests 2007* (FAO 2007); The Pacific Islands Regional MDG Report 2004 (SPC 2004); for Taipei, China: *International Energy Annual 2005* (EIA 2008) and economy sources.

Goal 7 Targets

Table 7.2 **Target 7.B: Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss**

	7.6 Proportion of Terrestrial and Marine Areas Protected (percent)	
	1990	2005
Developing Member Countries		
Central and West Asia		
Afghanistan	0.3	0.3
Armenia	9.1	10.0
Azerbaijan	6.1	7.3
Georgia	3.0	4.0
Kazakhstan	2.5	2.9
Kyrgyz Republic	2.9	3.6
Pakistan	9.0	9.1
Tajikistan	6.8	18.2
Turkmenistan	4.0	4.1
Uzbekistan	2.0	4.6
East Asia		
China, People's Rep. of	11.6	14.9
Hong Kong, China	...	...
Korea, Rep. of	3.8	3.9
Mongolia	4.1	13.9
Taipei, China ^a	9.2	19.0
South Asia		
Bangladesh	0.4	1.3
Bhutan	17.6 (1993)	26.4
India	4.8	5.4
Maldives	...	...
Nepal	6.8	16.3
Sri Lanka	15.5	17.2
Southeast Asia		
Brunei Darussalam ^b	32.9	38.3
Cambodia	0.1	21.6
Indonesia	6.6	9.1
Lao PDR	0.9	16.0
Malaysia	15.9	17.3
Myanmar	1.2	4.6
Philippines	4.0	6.5
Singapore	2.1	2.2
Thailand	13.0	19.0
Viet Nam	0.9	3.6
The Pacific		
Cook Islands	...	...
Fiji Islands	0.2	0.3
Kiribati	0.8	1.5
Marshall Islands	0.1	0.7
Micronesia, Fed. States of	0.1	0.1
Nauru	...	...
Palau	0.0	0.4
Papua New Guinea	3.3	3.6
Samoa	0.8	1.8
Solomon Islands	0.0	0.2
Timor-Leste	...	1.2
Tonga	0.1	27.8
Tuvalu	0.0 (1996)	0.0
Vanuatu	0.1	0.2
Developed Member Countries		
Australia	9.1	17.5
Japan	8.0	8.6
New Zealand	16.3	19.6

a Refers to nature protected areas as percent of national territory.

b Brunei Darussalam is not a developing member country but an unclassified regional member country of ADB.

Sources: Millennium Indicators Database Online (UNSD 2008); for Taipei, China: economy sources.

Goal 7 Targets

Table 7.3 **Target 7.C: Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation**

	7.8 Population Using Improved Water Sources (percent)				7.9 Population Using Improved Sanitation Facilities (percent)			
	1990		2006		1990		2006	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Developing Member Countries								
Central and West Asia								
Afghanistan	37 (1995)	17 (1995)	37	17	42 (1995)	29 (1995)	45	25
Armenia	99	75 (1995)	99	96	94	78 (1995)	96	81
Azerbaijan	82	51	95	59	90 (1995)	70 (1995)	90	70
Georgia	91	58	100	97	96	91	94	92
Kazakhstan	99	91	99	91	97	96	97	98
Kyrgyz Republic	97	65 (1995)	99	83	93 (1995)	92 (1995)	94	93
Pakistan	96	81	95	87	76	14	90	40
Tajikistan	91 (1995)	42 (1995)	93	58	88 (1995)	81 (1995)	95	91
Turkmenistan	...	...	...	...	...	...	...	...
Uzbekistan	97	85	98	82	97	91	97	95
East Asia								
China, People's Rep. of	97	55	98	81	61	43	74	59
Hong Kong, China	...	...	...	...	...	...	...	...
Korea, Rep. of	97	71 (1995)	97	71 (2000)	...	...	...	...
Mongolia	97	21	90	48	66 (1995)	23 (1995)	64	31
Taipei, China ^a	84	...	91 (2004)	...	...	...	...	...
South Asia								
Bangladesh	88	76	85	78	56	18	48	32
Bhutan	98 (2000)	79 (2000)	98	79	71 (2000)	50 (2000)	71	50
India	90	65	96	86	44	4	52	18
Maldives	100	95	98	76	100	42 (1995)	100	42
Nepal	97	70	94	88	36	6	45	24
Sri Lanka	91	62	98	79	85	68	89	86
Southeast Asia								
Brunei Darussalam ^b	...	...	...	...	...	...	...	...
Cambodia	47 (1995)	14 (1995)	80	61	43 (1995)	2 (1995)	62	19
Indonesia	92	63	89	71	73	42	67	37
Lao PDR	73 (1995)	34 (1995)	86	53	48 (1995)	6 (1995)	87	38
Malaysia	100	96	100	96	95	93 (2000)	95	93
Myanmar	86	47	80	80	47	15	85	81
Philippines	92	75	96	88	71	46	81	72
Singapore	100	...	100	...	100	...	100	...
Thailand	98	94	99	97	92	72	95	96
Viet Nam	87	43	98	90	62	21	88	56
The Pacific								
Cook Islands	99	87	98	88	100	91	100	100
Fiji Islands	43	51	43	51	87	55	87	55
Kiribati	76	33	77	53	26	20	46	20
Marshall Islands	95	97	83 (2000)	96 (2000)	88	51	93 (2000)	57 (2000)
Micronesia, Fed. States of	93	86	95	94	54	20	61	14
Nauru ^c	72 (1992)	...	82 (2002)	...	65 (1992)	...	97 (2002)	...
Palau	73	98	79	94	76	54	96	52
Papua New Guinea	88	32	88	32	67	41	67	41
Samoa	99	89	90	87	100	98	100	100
Solomon Islands	94	65	94	65	98	18	98	18
Timor-Leste	77 (2000)	56 (2000)	77	56	64 (2000)	32 (2000)	64	32
Tonga	100	100	100	100	98	96	98	96
Tuvalu	92	89	94	92	83	74	93	84
Vanuatu	93	53	86 (2000)	52 (2000)	78 (1995)	42 (1995)	78 (2000)	42 (2000)
Developed Member Countries								
Australia	100	100	100	100	100	100	100	100
Japan	100	100	100	100	100	100	100	100
New Zealand	100	82	100	82 (1995)	...	88	...	88 (1995)

a Refers to percent of total population served with tap water.

b Brunei Darussalam is not a developing member country but an unclassified regional member country of ADB.

c Refers to total population.

Sources: Millennium Indicators Database Online (UNSD 2008); The Pacific Islands Regional MDG Report 2004 (SPC 2004); for Taipei, China: economy sources.

Goal 7 Targets

Table 7.4 Target 7.D: By 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers

	7.10 Slum Population as Percentage of Urban Population ^a	
	1990	2005
Developing Member Countries		
Central and West Asia		
Afghanistan	98.5	98.5 (2001)
Armenia	...	...
Azerbaijan	...	...
Georgia	...	...
Kazakhstan	...	...
Kyrgyz Republic	...	...
Pakistan	78.7	47.5
Tajikistan	...	...
Turkmenistan	...	...
Uzbekistan	...	...
East Asia		
China, People's Rep. of	43.6	32.9
Hong Kong, China	...	...
Korea, Rep. of	68.5	37.0 (2001)
Mongolia ^b	68.5	57.9
Taipei, China	...	...
South Asia		
Bangladesh	87.3	70.8
Bhutan	70.0	44.1 (2001)
India	60.8	34.8
Maldives	...	...
Nepal	96.9	60.7
Sri Lanka	24.8	13.6 (2001)
Southeast Asia		
Brunei Darussalam ^c	...	...
Cambodia	71.7	78.9
Indonesia	32.2	26.3
Lao PDR ^d	66.1	79.3
Malaysia	...	...
Myanmar ^e	31.1	45.6
Philippines	54.9	43.7
Singapore	...	...
Thailand ^e	19.5	26.0
Viet Nam	60.5	41.3
The Pacific		
Cook Islands	...	...
Fiji Islands	...	...
Kiribati	...	...
Marshall Islands	...	...
Micronesia, Fed. States of	...	...
Nauru	...	...
Palau	...	...
Papua New Guinea	...	...
Samoa	...	...
Solomon Islands	...	...
Timor-Leste	...	...
Tonga	...	...
Tuvalu	...	...
Vanuatu	...	...
Developed Member Countries		
Australia	...	...
Japan	...	...
New Zealand	...	...

a The actual proportion of people living in slums is measured by a proxy, represented by the urban population living in households with at least one of the four characteristics: (i) lack of access to improved water supply; (ii) lack of access to improved sanitation; (iii) overcrowding (3 or more persons per room); and (iv) dwellings made of nondurable material.

b For 1990, only two shelter components (water and sanitation), from UNICEF/WHO were used to compute the estimate. For 2005, four shelter components (water, sanitation, sufficient living, and durable housing) from MICS 2000 were used.

c Brunei Darussalam is not a developing member country but an unclassified regional member country of ADB.

d For 1990, only two shelter components (water and sanitation) from UNICEF/WHO were used to compute the estimate. For 2005, three shelter components (water, sanitation, and durable housing) from MICS 2000 were used.

e For 1990, only two shelter components (water and sanitation) from UNICEF/WHO were used to compute the estimate. For 2005, four shelter components (water, sanitation, sufficient living, and durable housing) were used.

Source: Millennium Indicators Database Online (UNSD 2008).