



STATUS AND TRENDS
**DRINKING WATER AND
SANITATION**
in East Asia and the Pacific

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children

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Indicator definitions and population estimates used for MDG monitoring sometimes differ from those used by national governments, hence the coverage estimates presented in this report may be different from those used nationally, even when based on common data sources.

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STATUS AND TRENDS DRINKING WATER AND SANITATION

in East Asia and the Pacific

A regional perspective based on the 2008 Report of the
WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation

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Status and Trends of Drinking Water and Sanitation in East Asia and the Pacific

Purpose

This report presents the situation of drinking water and sanitation in the East Asia and the Pacific region¹. It is based on the coverage estimates issued in 2008 by the WHO/UNICEF Joint Monitoring Programme for water supply and sanitation (JMP)², which is the official United Nations mechanism for monitoring progress towards Millennium Development Goal Target 7c on drinking water and sanitation.

The WHO/UNICEF JMP coverage data provide an overview of regional and country progress. They also allow an assessment of the population currently using an improved drinking water source and basic sanitation, disaggregated by urban and rural areas. The estimates are drawn from data collected by national statistics offices and other relevant institutions through national censuses and nationally representative household surveys, including Demographic and Health Surveys (DHS), Multiple Indicator Cluster Surveys (MICS) and World Health Surveys among others.

For many of the Pacific island countries, there are insufficient data to assess progress towards the MDG targets. In the comparative graphs and charts of this report, only those Pacific island countries with 2006 populations exceeding 100,000 are included: Fiji, Federated States of Micronesia, Kiribati, Samoa, Solomon Islands and Vanuatu. Data on other island nations are included in the tables in the back. For a detailed analysis of the status and trends in the Pacific, the reader is referred to the recent publication by SOPAC (Pacific Islands Applied Geoscience Commission) and WHO³.

Definitions of access to drinking water and sanitation

MDG Target 7c calls on countries to “Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation.”

The indicators used in this document to assess the proportion of people with sustainable access to safe drinking water and to basic sanitation are the official MDG indicators:

The proportion of population using an improved drinking water source, urban and rural

The proportion of population using an improved sanitation facility, urban and rural

An improved drinking water source is defined as one that, by nature of its construction or through active intervention, is protected from outside contamination, in particular from contamination with fecal matter. To allow for international comparability of estimates, JMP uses the following classification to differentiate between “improved” and “unimproved” drinking water sources:

Improved drinking water sources	Unimproved drinking water sources
Piped water into dwelling, plot or yard	Unprotected dug well
Public tap/standpipe	Unprotected spring
Tubewell/borehole	Small cart with tank/drum
Protected dug well	Tanker truck
Protected spring	Surface water (river, dam, lake, pond, stream, channel, irrigation channel)
Rainwater	Bottled water ⁴

¹ Covers the countries in the UNICEF region of East Asia and the Pacific.

² Progress on Drinking Water and Sanitation: Special Focus on Sanitation. UNICEF, New York and WHO, Geneva, 2008. (http://www.wssinfo.org/en/40_MDG2008.html)

³ Sanitation, hygiene and drinking-water in the Pacific island countries: converting commitment into action. WHO, 2008. (http://www.wpro.who.int/publications/PUB_9789290614012.html)

⁴ Bottled water is considered to be improved only when the household uses water from another improved source for cooking and personal hygiene; where this information is not available, bottled water is classified on a case-by-case basis.

An improved sanitation facility is defined as one that hygienically separates human excreta from human contact. To allow for international comparability of estimates, JMP uses the following classification to differentiate between “improved” and “unimproved” types of sanitation facility:

Improved sanitation facilities ⁵	Unimproved sanitation facilities
Flush or pour-flush to:	Flush or pour-flush to elsewhere ⁶
■ piped sewer system	Pit latrine without slab or open pit
■ septic tank	Bucket
■ pit latrine	Hanging toilet or hanging latrine
Ventilated improved pit latrine (VIP)	No facilities or bush or field (open defecation)
Pit latrine with slab	Public or shared facilities
Composting toilet	

NB: Only users of “improved” drinking-water sources, and “improved” sanitation facilities are considered by JMP as “having access” as stated in the MDG Target.

Indicator definitions and population estimates used for MDG monitoring sometimes differ from those used by national governments. Hence the coverage estimates presented in this report may differ from those used nationally, even when based on common data sources.

The population estimates presented here and the urban/rural distribution of the population are those estimated by the United Nations Population Division (2006 revision).

This regional analysis is based on data from the following countries in the UNICEF region of East Asia and the Pacific:

East Asia	Pacific (Oceania)
Brunei Darussalam	Cook Islands
Cambodia	Federated States of Micronesia
China	Fiji
DPR Korea	Kiribati
Indonesia	Marshall Islands
Lao People’s Democratic Republic	Nauru
Malaysia	Niue
Mongolia	Palau
Myanmar	Samoa
Papua New Guinea	Solomon Islands
Philippines	Tonga
Republic of Korea	Tuvalu
Singapore	Vanuatu
Thailand	
Timor Leste	
Viet Nam	

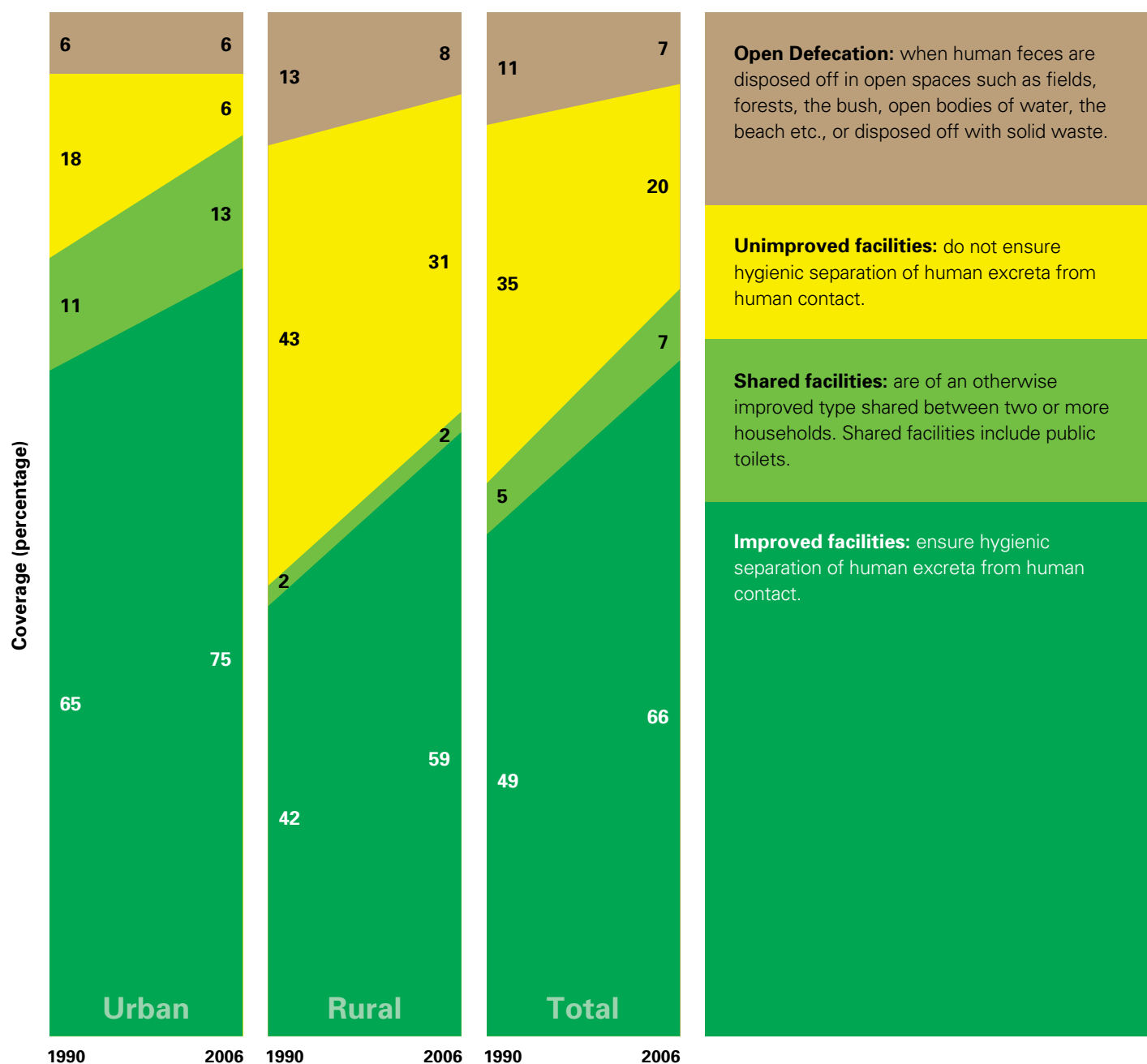
⁵ Only facilities which are not shared or public are considered improved.

⁶ Excreta are flushed to the street, yard or plot, open sewer, a ditch, a drainage way or other location.

Access to Sanitation - The Sanitation Ladder

Two-thirds of the population in East Asia and the Pacific use an improved sanitation facility, yet 144 million people still practice open defecation.

Figure 1: Trends in the proportion of population using either an improved, or shared, or unimproved sanitation facility, or practising open defecation, urban, rural & total, 1990 – 2006

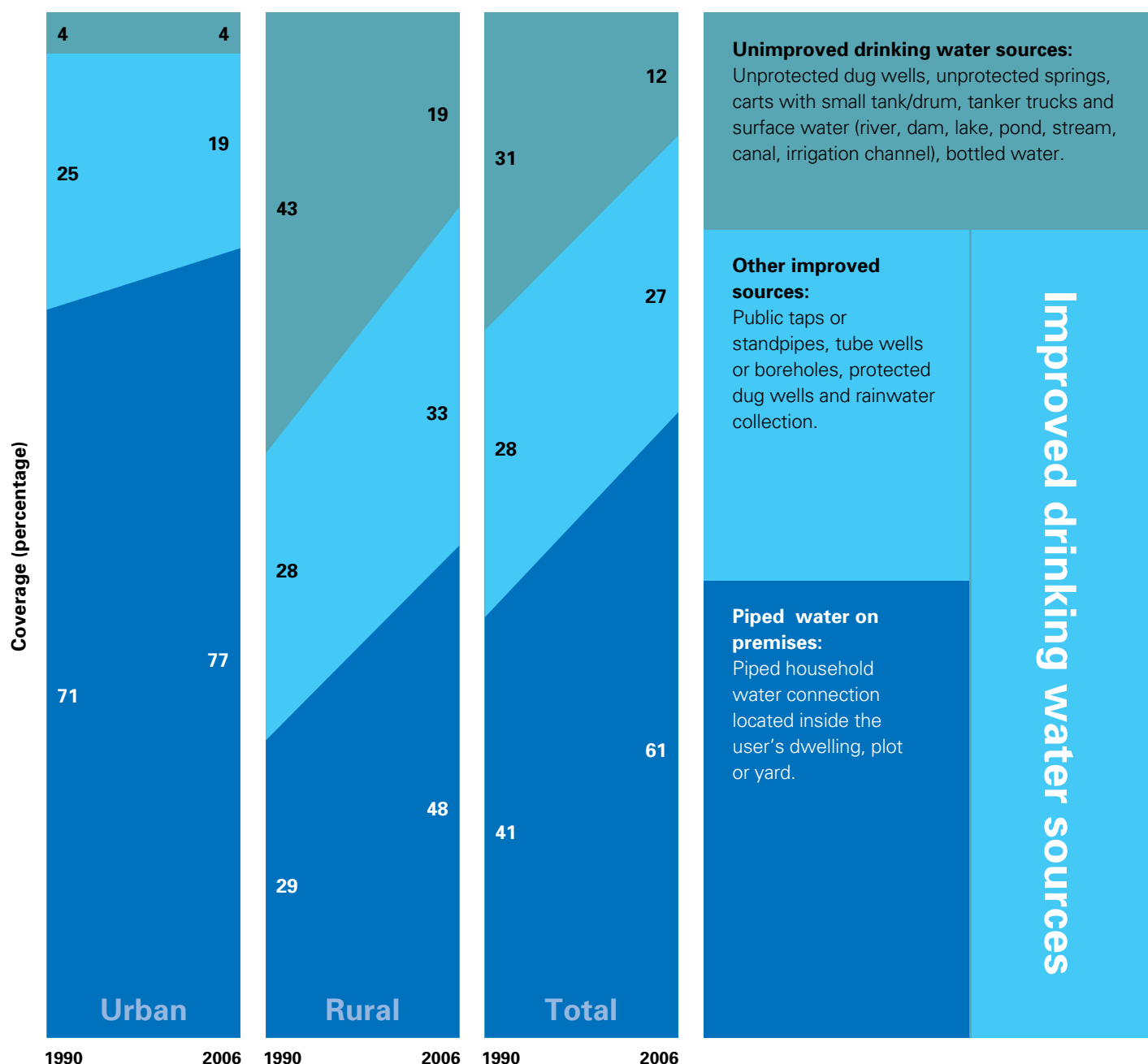


- Whereas only 49 per cent of the population in East Asia and the Pacific used an improved sanitation facility in 1990, by 2006 two-thirds of the population (66 per cent) used one.
- The rate at which the region gained access to sanitation, representing 482 million people since 1990, is sufficient to meet the MDG sanitation target of 75 per cent by 2015.
- The practice of open defecation in East Asia and the Pacific dropped from 11 per cent in 1990 to 7 per cent in 2006.
- The practice of sharing a facility of an otherwise acceptable type is much more prevalent in urban areas (13 per cent) than in rural areas (2 per cent).

Access to Drinking Water - The Drinking Water Ladder

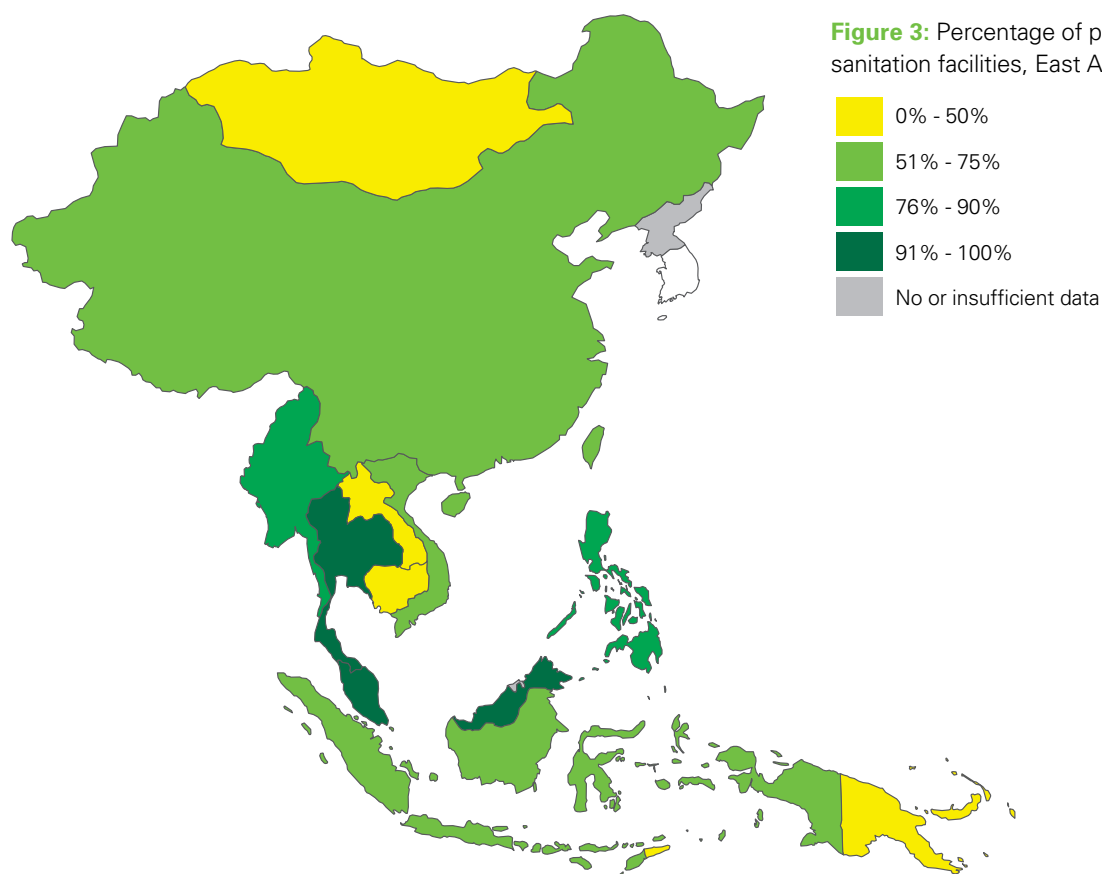
88 per cent of the population of East Asia and the Pacific uses an improved drinking water source.

Figure 2: Trends in the proportion of population using either a piped connection on premises, another improved drinking water source or an unimproved drinking water source, urban, rural & total, 1990-2006



- The proportion of the population with a piped drinking water supply into their dwelling, plot or yard has increased from 41 per cent in 1990 to 61 per cent in 2006.
- The proportion of the population using an unimproved source as their main source of drinking water has dropped from 31 per cent in 1990 to 12 per cent in 2006.
- East Asia and the Pacific as a whole has surpassed its 2015 MDG drinking water target, however serious disparities in coverage still exist between and within countries.
- The proportion of the urban population that relies on an unimproved source has stagnated at 4 per cent since 1990.

Access to Sanitation – Basic Facts and Figures



- Almost 1.3 billion people in East Asia and the Pacific had access to improved sanitation in 2006. Coverage increased from 49 per cent in 1990 to 66 per cent in 2006.
- The region's population without access to sanitation decreased by 174 million, from 847 million in 1990 to 673 million in 2006. Increases in coverage outpace population growth.
- The rate at which the region gained access to sanitation is sufficient to meet the MDG sanitation target of 75 per cent by 2015.
- In 7 countries of East Asia and the Pacific (Cambodia, Fed. States of Micronesia, Kiribati, Lao PDR, PNG, Solomon Islands and Timor Leste), sanitation coverage is less than 50 per cent.

Basic Figures in percentage

	Population (millions)			Population using improved sanitation			Population using shared sanitation			Population using unimproved sanitation			Population practising open defecation		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
1990	500	1,161	1,661	65%	42%	49%	11%	2%	5%	18%	43%	35%	6%	13%	11%
2000	715	1,155	1,870	71%	52%	60%	12%	2%	6%	12%	36%	26%	5%	10%	8%
2006	856	1,113	1,969	75%	59%	66%	13%	2%	7%	6%	31%	20%	6%	8%	7%
2015	1,070	1,033	2,103	-	-	75%*	-	-	-	-	-	-	-	-	-

* Regional MDG target

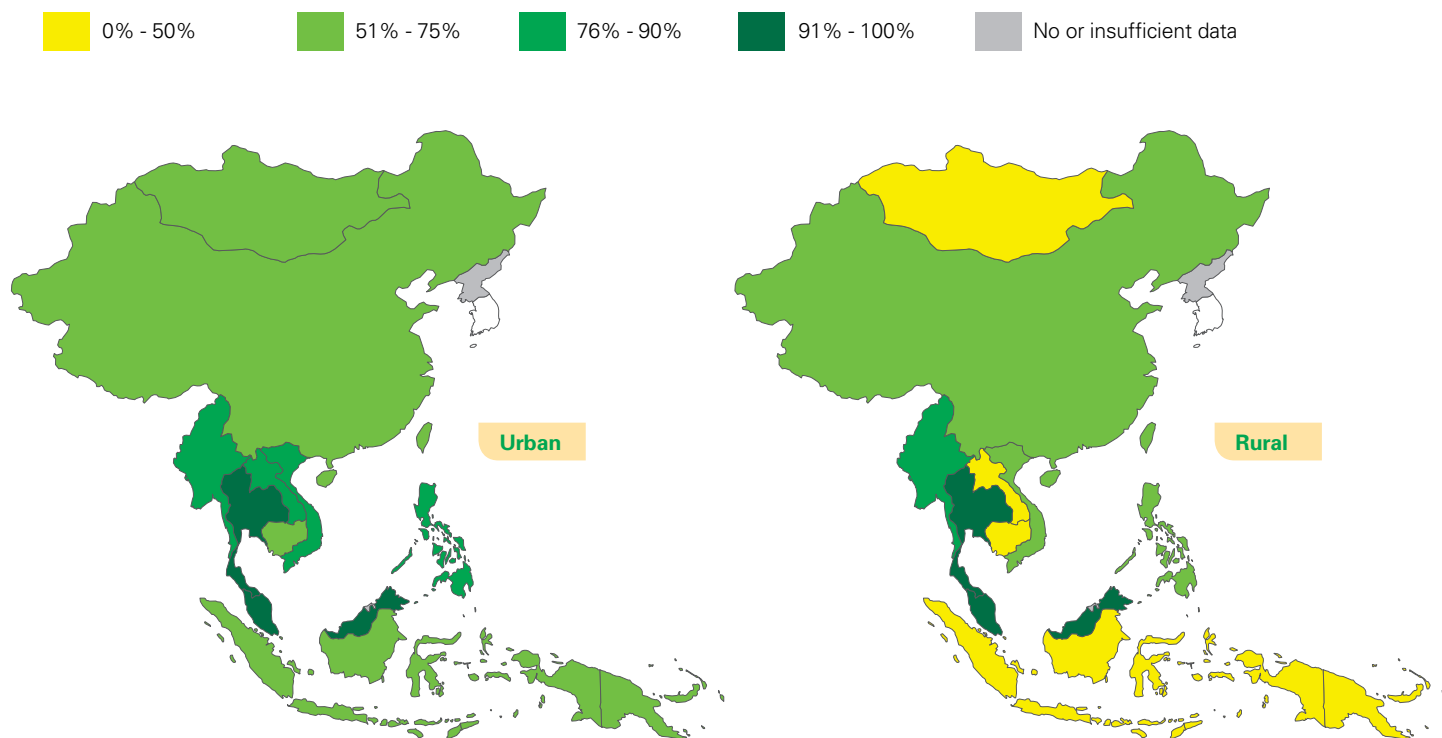
Basic Figures by population

	Population (millions)			Population using improved sanitation (millions)			Population using shared sanitation (millions)			Population using unimproved sanitation (millions)			Population practising open defecation (millions)		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
1990	500	1,161	1,661	325	490	814	54	21	75	93	504	598	28	146	174
2000	715	1,155	1,870	508	605	1,113	88	24	113	80	409	488	39	117	156
2006	856	1,113	1,969	644	652	1,296	111	26	136	50	342	393	51	93	144
2015	1,070	1,033	2,103	-	-	1,577**	-	-	-	-	-	-	-	-	-

** Regional MDG target corresponding to coverage of 75%

Disparities in Urban and Rural Sanitation Coverage

Figure 4: Percentage of urban / rural populations using improved sanitation sources in East Asia, 2006



Urban sanitation coverage in East Asia and the Pacific is 75 per cent

- However, since 1990, the urban population without improved sanitation increased by 37 million to 212 million.
- 111 million people in urban areas share a sanitation facility of an otherwise acceptable type.
- 51 million people in urban areas practise open defecation, 23 million more than in 1990.

Rural sanitation coverage increased from 42 to 59 per cent

- Since 1990, the rural population with improved sanitation increased by 162 million people.
- 342 million people in rural areas use sanitation facilities which do not meet minimum standards of hygiene.
- 93 million people in rural areas do not use any sanitation facility and practise open defecation. That is 53 million less than in 1990.
- 2 out of 3 people in East Asia and the Pacific without sanitation facilities live in rural areas.

Figure 5: Urban and rural sanitation coverage in East Asia and Pacific, 2006

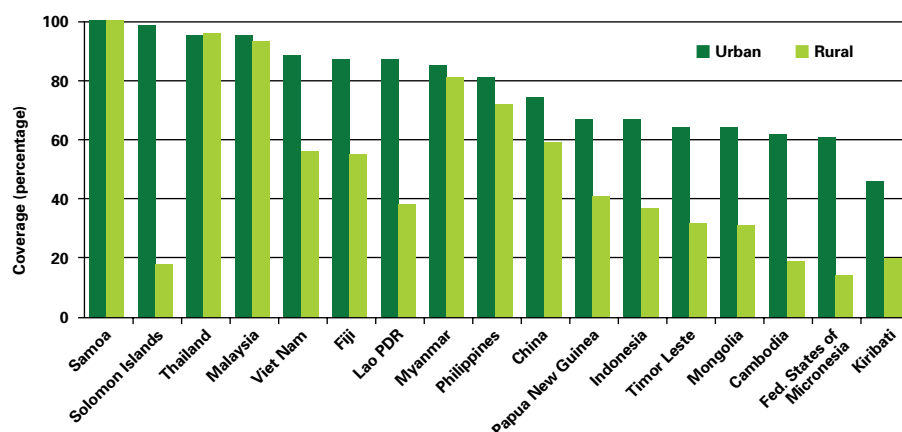
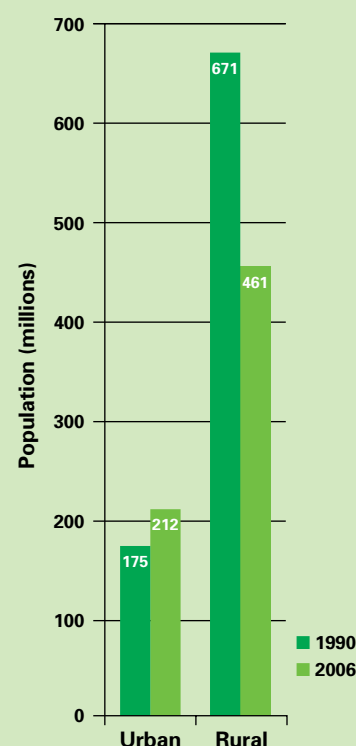


Figure 6: Urban / rural disparity in the population without improved sanitation in East Asia and the Pacific, 2006



Two out of 3 people in East Asia and the Pacific without improved sanitation facilities live in rural areas.

Sanitation Coverage by Country

Figure 7: Sanitation coverage, 2006 (ranked by the proportion practising open defecation)

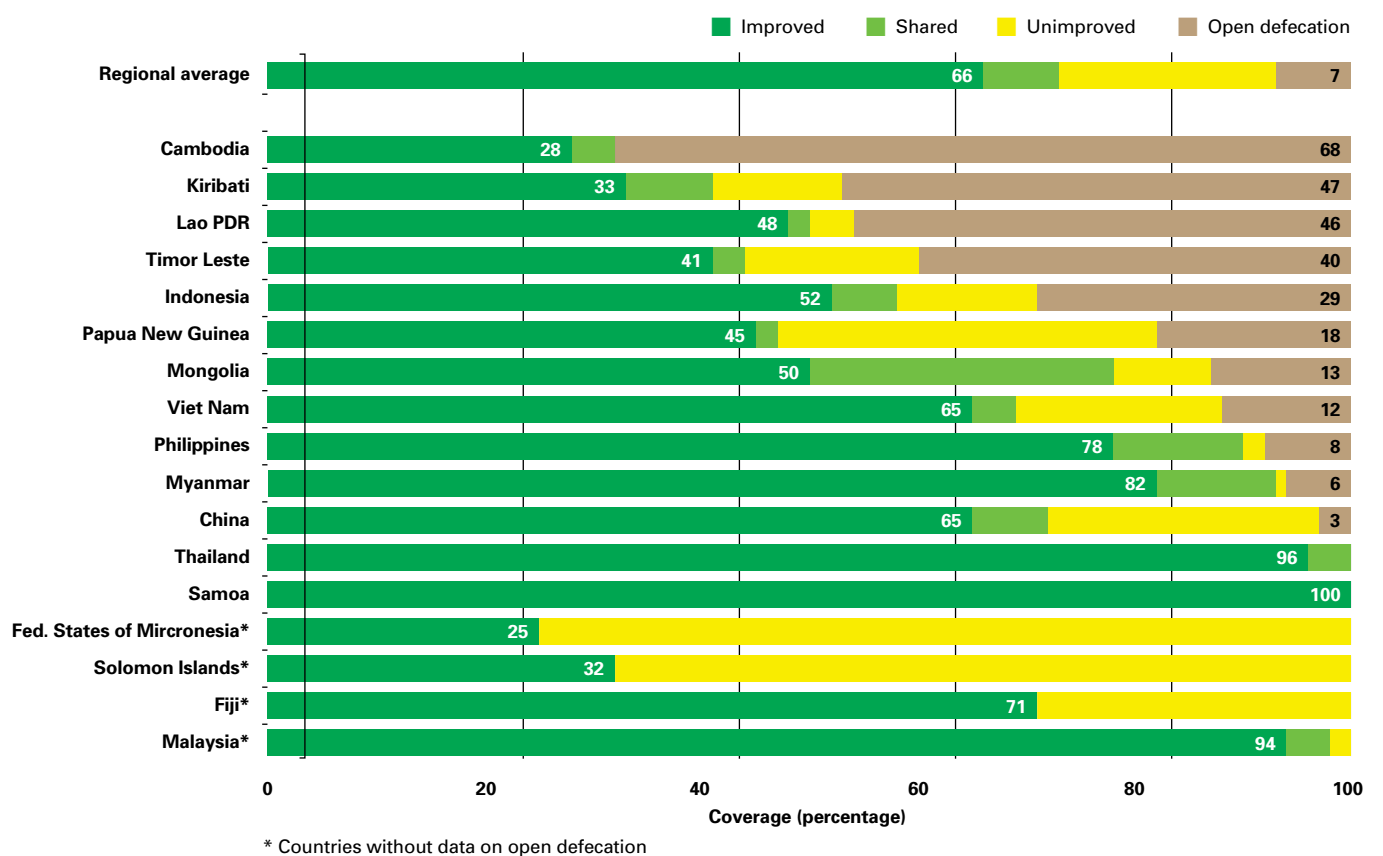
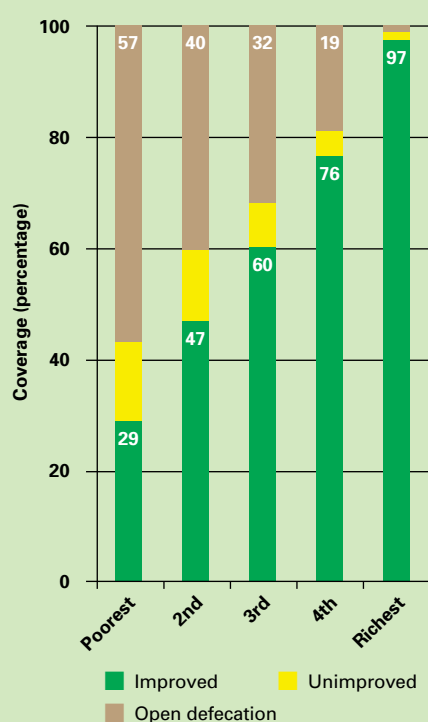
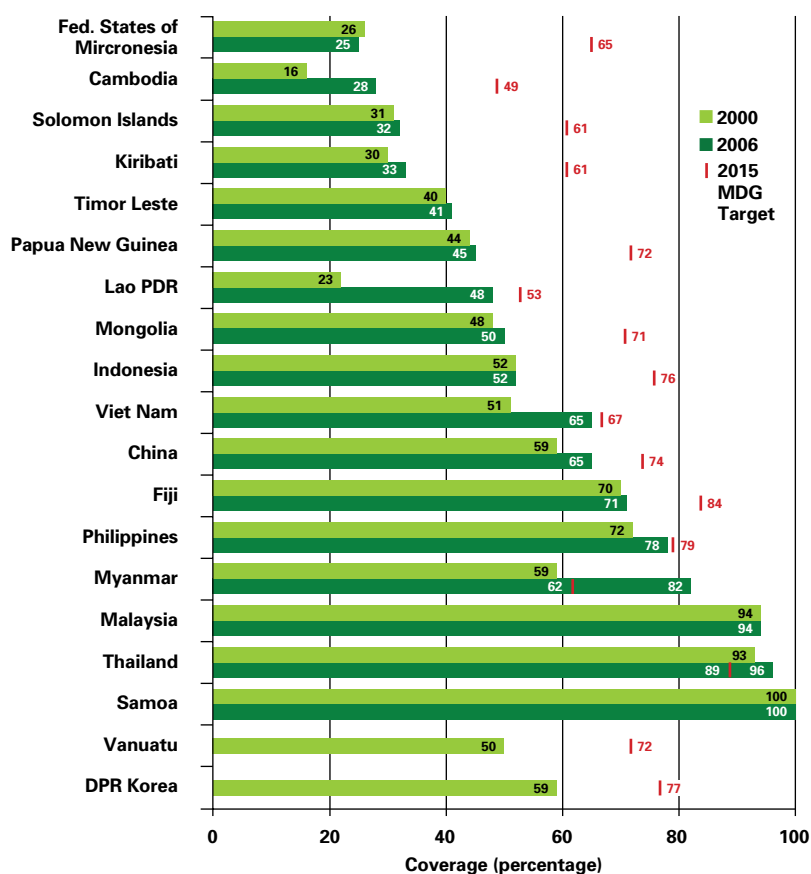


Figure 8: Sanitation coverage by wealth quintiles



Source: DHS and MICS (Cambodia, Lao PDR, Mongolia, Thailand, Viet Nam)

Figure 9: Improvements in sanitation, 2000-2006 (ranked by 2006 coverage), with 2015 MDG Target



Prevalence of Open Defecation

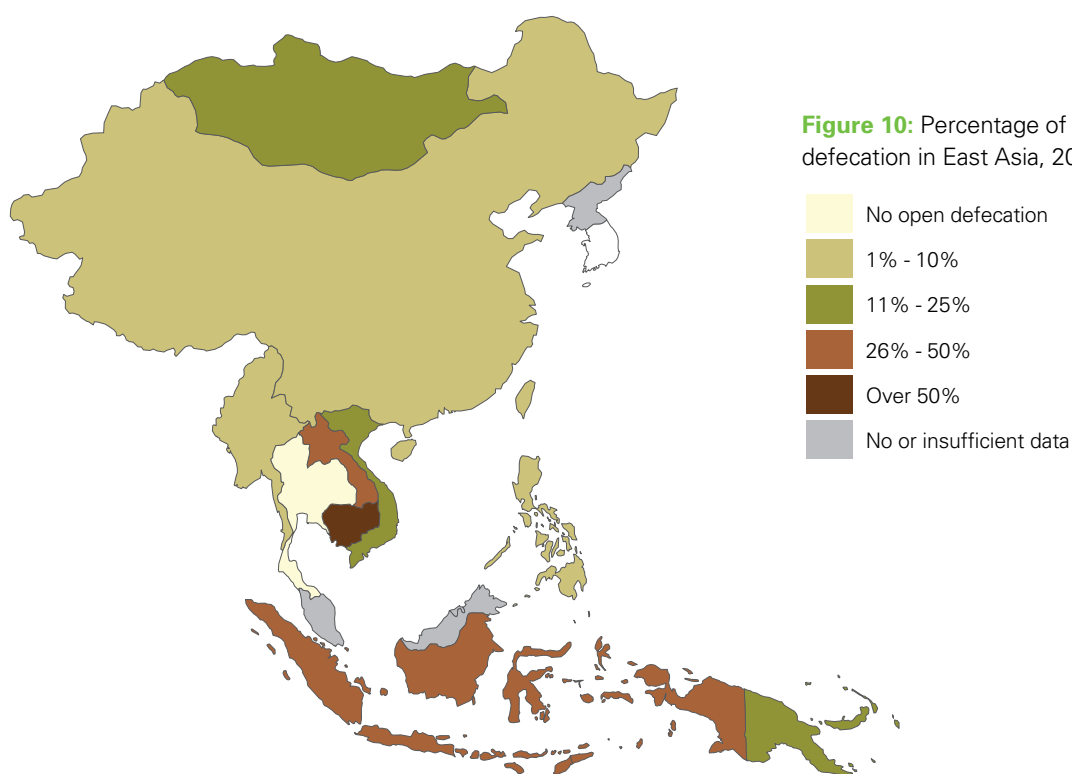


Figure 11: Countries with a decline of 15% or more in the practice of open defecation, 1990-2006

Open defecation is declining			
Country	Percentage of population practising open defecation		Percentage-point decline of open defecation
	1990	2006	1990-2006
Lao PDR	76%	46%	30%
Myanmar	22%	6%	16%
Thailand	18%	0%	18%
Viet Nam	30%	12%	18%

Figure 12: Population practising open defecation in countries with highest prevalence in 2006 (millions)

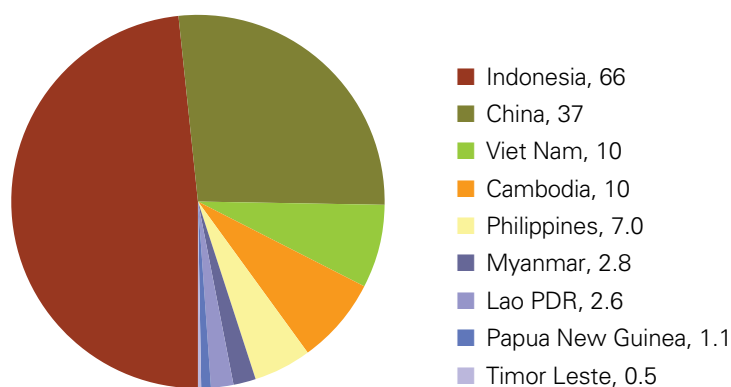
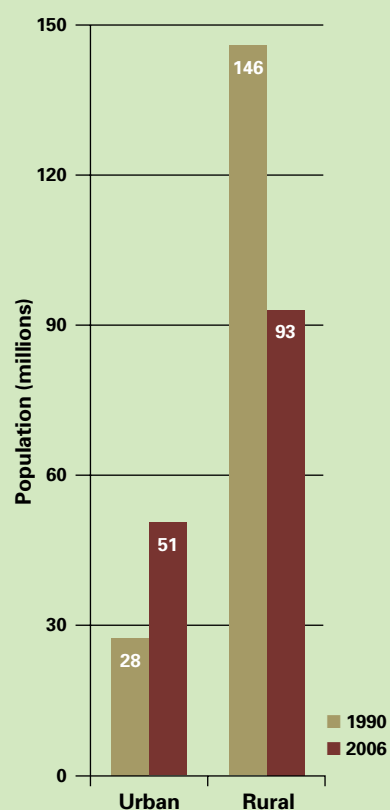


Figure 13: Urban / rural disparity in population practising open defecation, 1990 / 2006 (millions)



An increasing number of urban dwellers practice open defecation

Access to Improved Drinking Water Sources – Basic Facts and Figures

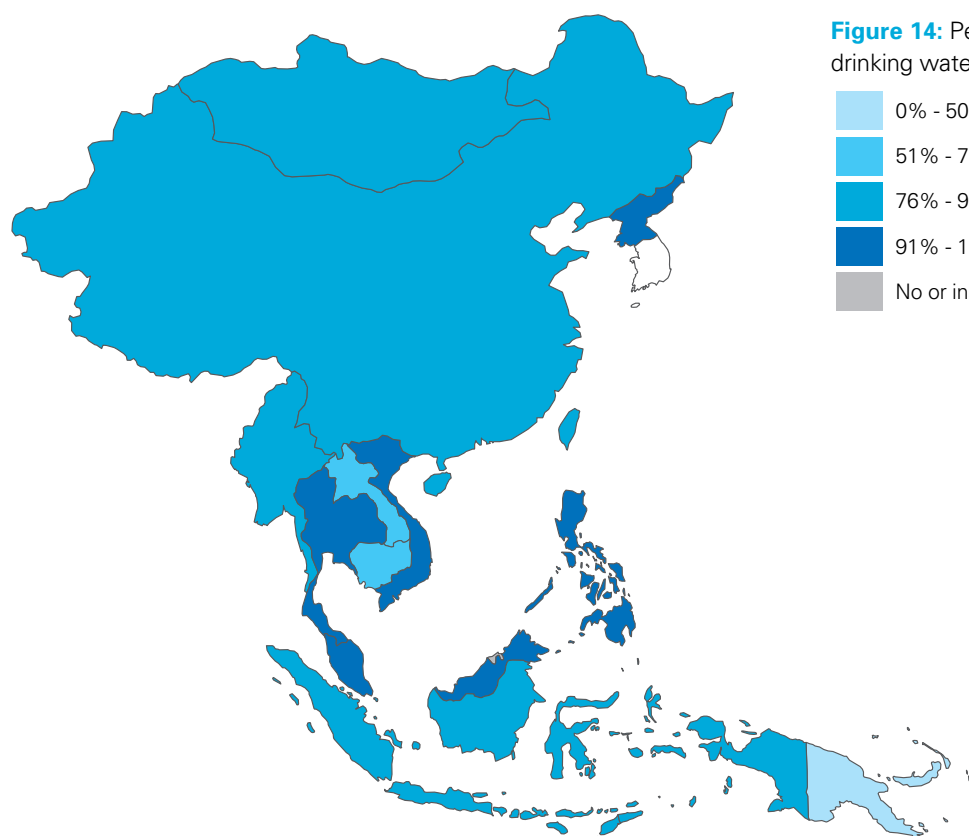
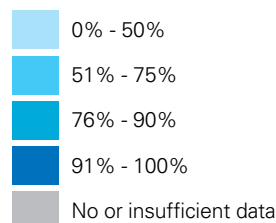


Figure 14: Percentage of population using improved drinking water sources, East Asia, 2006



- 1,725 million people in East Asia and the Pacific had access to improved drinking water sources in 2006. Coverage increased from 69 per cent in 1990 to 88 per cent in 2006.
- The region's population without access to improved drinking water sources was more than halved, from 518 million in 1990 to 244 million in 2006. Increases in coverage outpaced population growth.
- The rate at which East Asia and the Pacific gained access to improved drinking water sources, representing 582 million people since 1990, has allowed the region to surpass its MDG target in 2006, well ahead of 2015.
- Maintaining high coverage rates in urban areas remains a challenge as the urban population is set to grow by more than 200 million people over the 2006-2015 period.

Basic Figures in percentage

	Population (millions)			Population using improved water sources			Population using piped on premises			Population using another improved source			Population using an unimproved source		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
1990	500	1,161	1,661	96%	57%	69%	71%	29%	41%	25%	28%	28%	4%	43%	31%
2000	715	1,155	1,870	96%	72%	81%	75%	41%	54%	21%	31%	27%	4%	28%	19%
2006	856	1,113	1,969	96%	81%	88%	77%	48%	61%	19%	33%	27%	4%	19%	12%
2015	1,070	1,033	2,103	-	-	85%*	-	-	-	-	-	-	-	-	-

* Regional MDG target

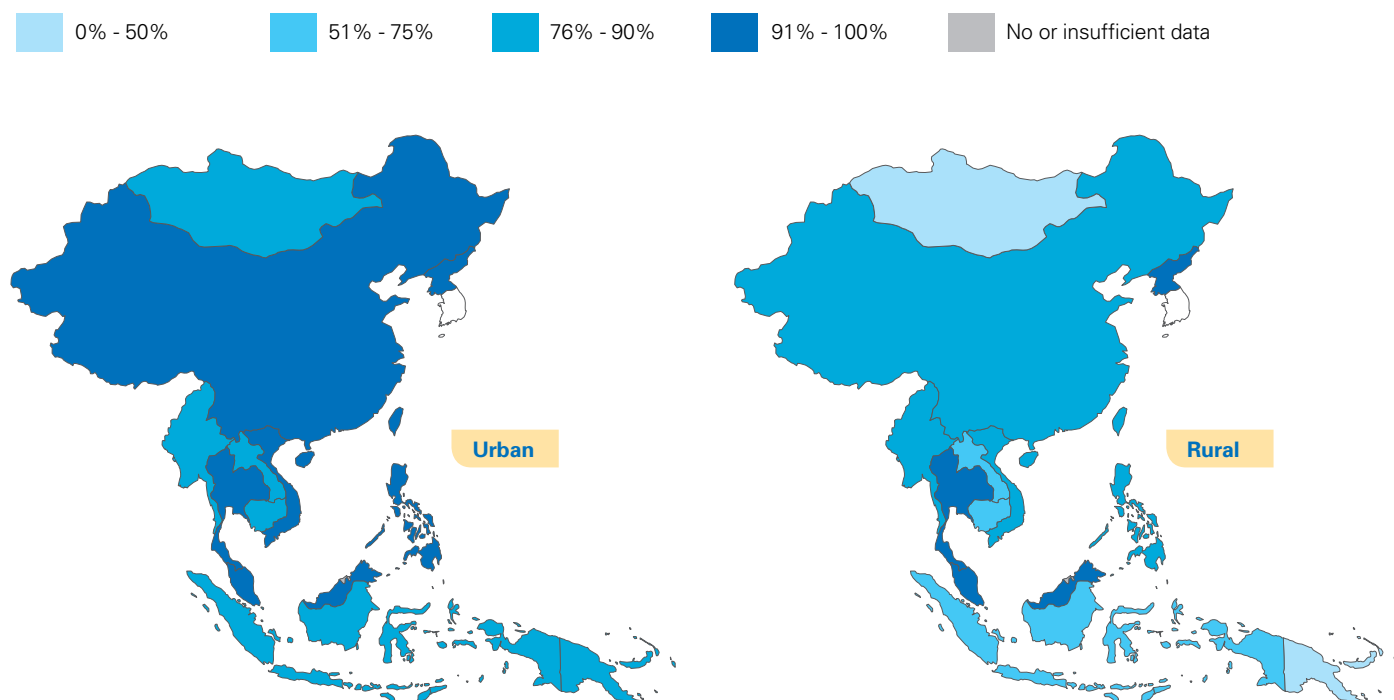
Basic Figures by population

	Population (millions)			Population using improved water sources (millions)			Population using piped on premises (millions)			Population using another improved source (millions)			Population using an unimproved source (millions)		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
1990	500	1,161	1,661	479	664	1,143	353	332	685	126	332	458	21	497	518
2000	715	1,155	1,870	683	827	1,510	534	478	1,013	149	349	497	32	328	360
2006	856	1,113	1,969	825	900	1,725	660	536	1,196	165	364	529	31	213	244
2015	1,070	1,033	2,103	-	-	1,787**	-	-	-	-	-	-	-	-	-

** Regional MDG target corresponding to coverage of 85%

Disparities in Urban and Rural Drinking Water Coverage

Figure 15: Percentage of urban / rural population using improved drinking water sources in East Asia, 2006



Urban drinking water coverage in East Asia and the Pacific is 96 per cent

- Of the 856 million people in urban areas, 660 million have a piped connection on premises, up by 307 million from 1990.
- Urban drinking water coverage remained high at 96 per cent throughout the period 1990 – 2006. This was achieved despite the fact that the urban population increased by a staggering 71 per cent from 500 million people in 1990 to 856 million in 2006.
- Since 1990, the urban population without access to an improved drinking water source increased by 10 million people to 31 million people in 2006.

Rural drinking water coverage increased from 57 to 81 per cent

- Since 1990, 236 million people in rural areas gained access to an improved drinking water source.
- Of the 1,113 million people in rural areas, 536 million have a piped connection on premises while 364 million use other improved drinking water sources.
- Since 1990, the rural population without access to improved drinking water sources decreased by 284 million people to 213 million people in 2006.
- 7 out of 8 people in East Asia and the Pacific without access to an improved drinking water source live in rural areas.

Figure 16: Drinking water coverage urban and rural, 2006

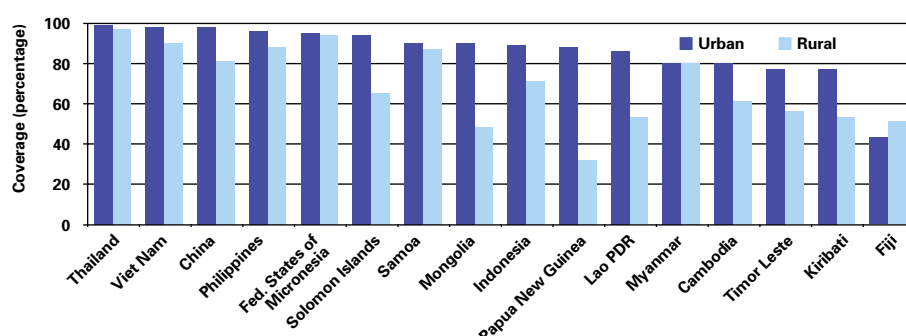
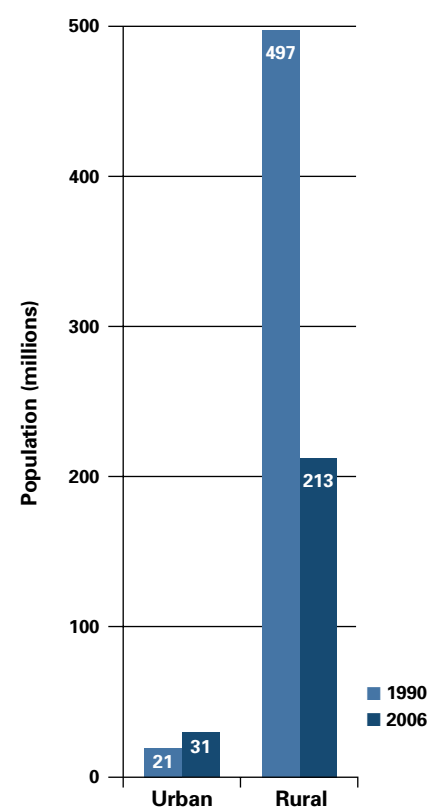


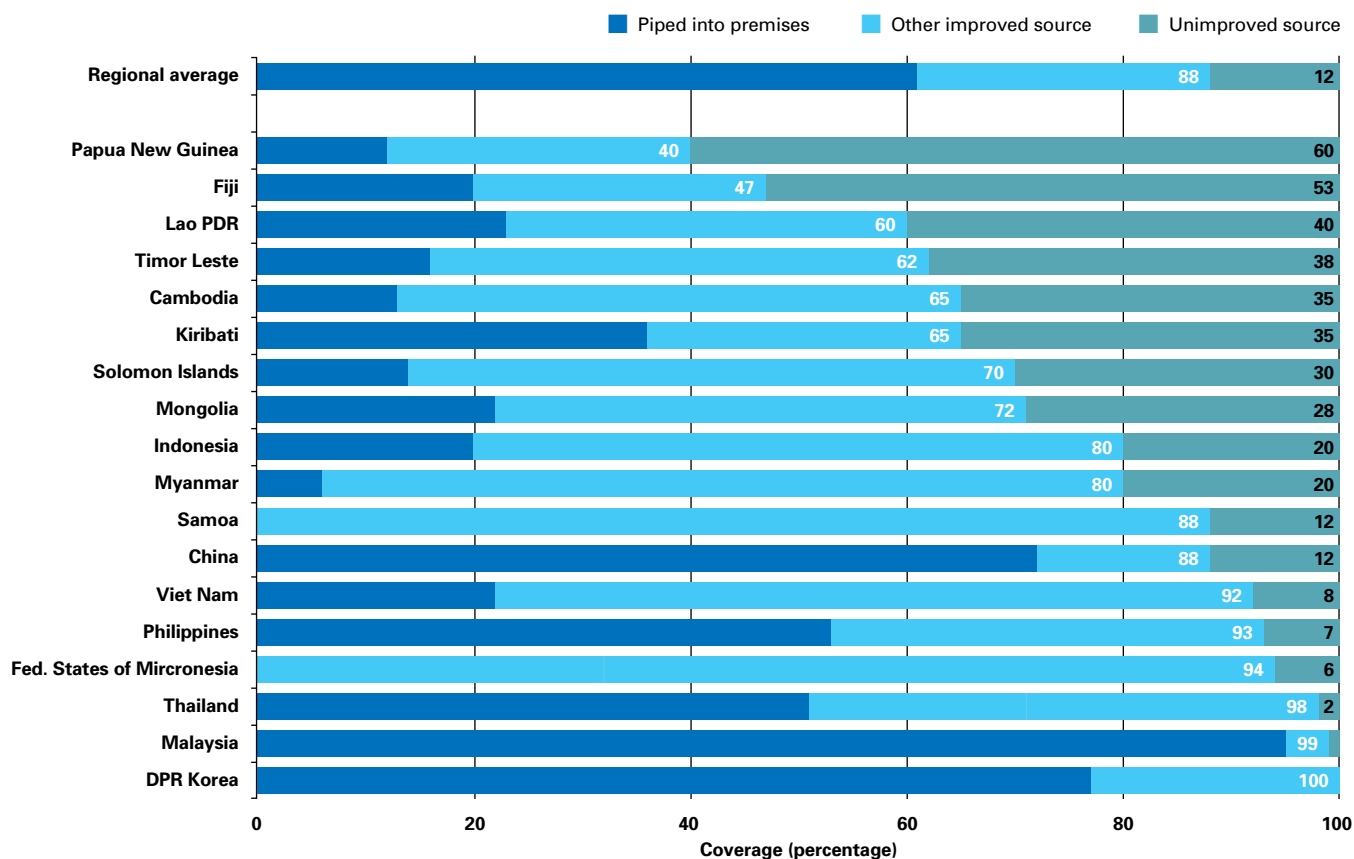
Figure 17: Urban / rural disparity in population without an improved drinking water source, 1990 / 2006 (millions)



The majority of people without an improved drinking water source live in rural areas

Drinking Water Coverage by Country

Figure 18: Drinking water coverage, 2006 (ranked by proportion of population using unimproved drinking water sources)



Note: White numbers show total improved drinking water sources.

Use of bottled water is a growing phenomenon

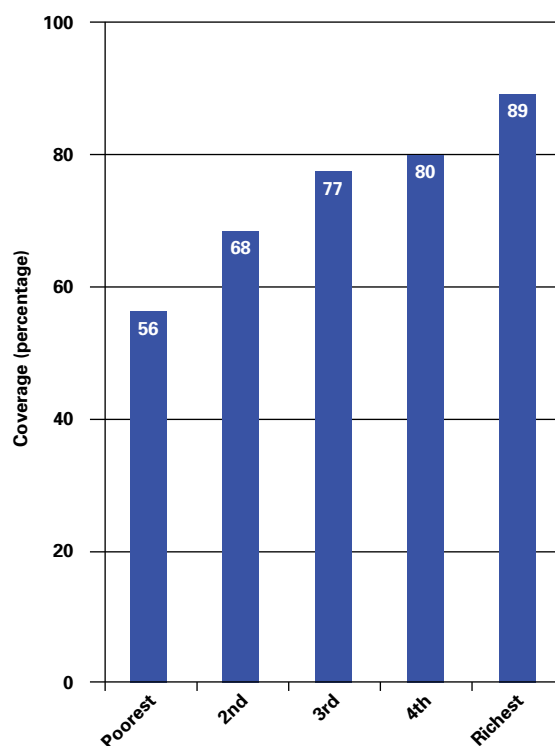
Surveys show that bottled water is a significant source of drinking water in some developing countries. The water comes in both bottles and plastic sachets and is usually packaged by private enterprises, both large and small. Tap water is often resold in bottles by public water vendors.

The WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation (JMP) considers bottled water a source of improved drinking water only when another improved source is also used for cooking and personal hygiene. For countries where information on the use of alternative sources is not yet available, bottled water is considered on a case-by-case basis.

Figure 19: Countries where more than 5% of the urban population use bottled water as their main drinking water source

Country	Bottled water users	
	Urban	Rural
Lao PDR	52%	6%
Thailand	45%	18%
Philippines	10%	1%
Cambodia	7%	1%
Indonesia	6%	1%

Figure 20: Improved drinking water coverage by wealth quintiles



Source: DHS and MICS (Cambodia, Lao PDR, Mongolia, Thailand, Viet Nam)

Drinking Water Trends

Figure 21: Improvements in use of drinking water sources, 2000-2006 (ranked by 2006 coverage), with 2015 MDG Target

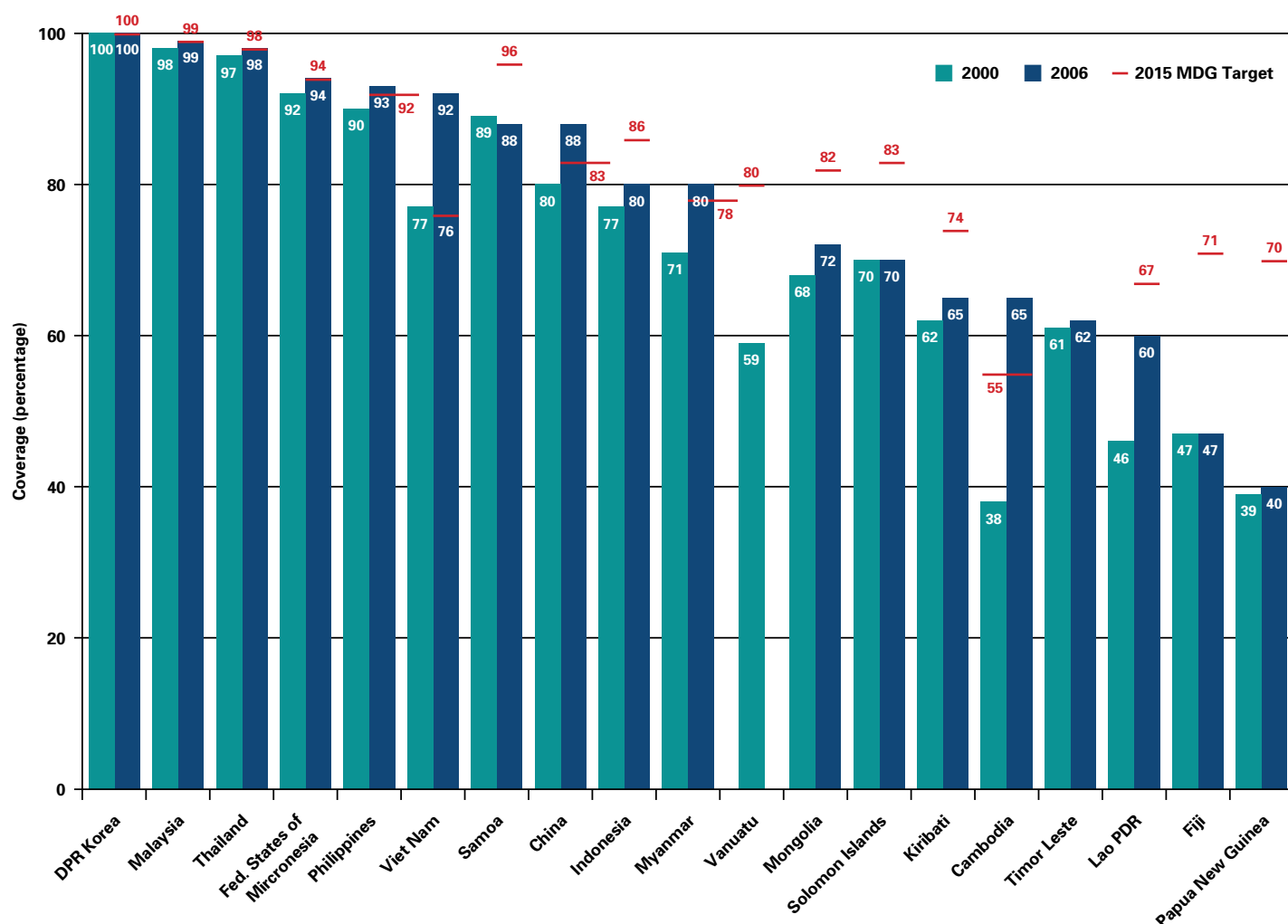


Figure 22: Percentage of households using different water treatment methods (selected countries, East Asia)

Drinking water treatment practices vary greatly among countries

Form of Treatment	Mongolia	Viet Nam	Lao PDR	Cambodia	Thailand
No treatment	0%	6%	30%	34%	56%
Boil	95%	90%	64%	60%	11%
Add bleach / chlorine	1%	6%	0%	0%	1%
Use water filter	2%	14%	1%	2%	15%
Let it stand and settle	0%	10%	7%	12%	13%
Strain through a cloth	2%	3%	2%	0%	6%
Solar disinfection	0%	0%	0%	0%	2%
Other	0%	2%	0%	2%	0%

Note: Multiple responses were possible, so totals do not add up to 100%.

Source: MICS and DHS surveys in 2005 and 2006.

Children and Sanitation – Basic Facts and Figures



- The percentage of children under five living in households which use an improved sanitation facility increased from 49 per cent in 1990 to 66 per cent in 2006.
- The percentage of children under five living in households which practice open defecation only slightly declined from 11 per cent in 1990 to 9 per cent in 2006; in urban areas that percentage increased from 6 per cent in 1990 to 7 per cent in 2006.
- Of the 145 million children under five, 95 million live in households that use an improved sanitation facility while 13 million children live in households that practice open defecation and which have no sanitation facility at all.

Sanitation Basic Figures: children under five (percentage)

	Population (millions)			Children under five living in households which use improved sanitation			Children under five living in households which share an improved type of sanitation			Children under five living in households which use unimproved sanitation			Children under five living in households which practice open defecation		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
1990	54	127	181	65%	42%	49%	11%	2%	5%	18%	42%	35%	6%	14%	11%
2000	60	96	157	72%	52%	59%	12%	2%	6%	10%	34%	25%	6%	12%	10%
2006	63	81	145	76%	58%	66%	12%	3%	7%	5%	28%	18%	7%	11%	9%
2015	74	72	146	-	-	-	-	-	-	-	-	-	-	-	-

Sanitation Basic Figures: children under five (population)

	Children under five (millions)			Children under five living in households which use improved sanitation (millions)			Children under five living in households which share an improved type of sanitation (millions)			Children under five living in households which use unimproved sanitation (millions)			Children under five living in households which practice open defecation (millions)		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
1990	54	127	181	35	53	88	6	2	8	10	55	64	3	17	21
2000	60	96	157	43	50	93	7	2	10	6	32	38	4	12	16
2006	63	81	145	48	47	95	8	2	10	3	23	27	4	9	13
2015	74	72	146	-	-	-	-	-	-	-	-	-	-	-	-

Children and Drinking Water – Basic Facts and Figures

- The percentage of children under five living in households with an improved drinking water source increased from 69 per cent in 1990 to 87 per cent in 2006
- The number of children under five living in households that do not use an improved drinking water source decreased threefold from 56 million in 1990 to 19 million in 2006



Drinking Water Basic Figures: children under five (percentage)

	Population (millions)			Children under five living in households that use an improved drinking water source			Children under five living in households that use piped water on premises			Children under five living in households that use another improved source			Children under five living in households that use an unimproved source		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
1990	54	127	181	95%	57%	69%	68%	27%	39%	27%	30%	30%	5%	43%	31%
2000	60	96	157	95%	71%	80%	72%	39%	51%	23%	32%	29%	5%	29%	20%
2006	63	81	145	96%	80%	87%	74%	44%	57%	22%	36%	30%	4%	20%	13%
2015	74	72	146	-	-	-	-	-	-	-	-	-	-	-	-

Drinking Water Basic Figures: children under five (population)

	Population (millions)			Children under five living in households that use an improved drinking water source (millions)			Children under five living in households that use piped water on premises (millions)			Children under five living in households that use another improved source (millions)			Children under five living in households that use an unimproved source (millions)		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
1990	54	127	181	52	73	125	37	35	72	15	38	53	2	54	56
2000	60	96	157	57	69	126	43	37	80	14	32	46	3	28	31
2006	63	81	145	61	65	126	47	36	82	14	29	44	2	16	19
2015	74	72	146	-	-	-	-	-	-	-	-	-	-	-	-

Water and Sanitation in Pacific Island Countries

Availability of updated nationally representative data on access to safe drinking water and basic sanitation for the Pacific Island Countries is limited. The JMP has data on file for 17 of the 19 countries in the region, but as is illustrated in the table below, these data are often several years old.

Country	Latest nationally representative survey or census on file	Country	Latest nationally representative survey or census on file
Cook Islands	Census 2001	Palau	Census 2000
Fiji	Reported 1999	Papua New Guinea	DHS 1996*
French Polynesia	Reported 1999	Samoa	Census 2001
Guam	Census 1990	Solomon Islands	Reported 1999
Kiribati	Census 2000	Tokelau	Census 2002
Marshall Islands	Census 1999	Tonga	Census 1986
Federated States of Micronesia	Census 2000	Tuvalu	Census 2002
Niue	Census 2001	Vanuatu	Census 1998
Northern Mariana Islands	Census 2000		

* Results of the PNG DHS 2006 were not yet available when the JMP 2008 report was prepared.

When available, data often are not sufficiently disaggregated by type of drinking water or sanitation facility. This complicates estimating regional averages for Oceania for different steps of the drinking water and sanitation ladders. The JMP calculates regional estimates only when data are available covering more than 50 per cent of the regional population. For the Pacific Islands there were not enough data available to estimate urban coverage by piped connections and urban coverage for those sharing a sanitation facility or those practicing open defecation.

For a detailed analysis of the status and trends in the Pacific, please refer to the recent publication by SOPAC (Pacific Islands Applied Geoscience Commission) and WHO.

Sanitation Basic Figures: in percentage

	Population (millions)			Population using improved sanitation			Population using shared sanitation			Population using unimproved* sanitation			Population practising open defecation		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
1990	1.5	5.0	6.4	80%	44%	52%	-	1%	-	20%	34%	48%	-	21%	-
2000	1.9	6.2	8.1	81%	44%	52%	-	1%	-	19%	35%	48%	-	20%	-
2006	2.2	7.0	9.2	80%	43%	52%	-	1%	-	20%	36%	48%	-	20%	-
2015	2.7	7.9	10.6	-	-	76%**	-	-	-	-	-	-	-	-	-

* Urban and Total estimates for unimproved sanitation include the proportion of the population that shares a facility and the proportion that practices open defecation

** Regional MDG target

Drinking Water Basic Figures: in percentage

	Population (millions)			Population using improved water source			Population using piped water on premises			Population using another improved source			Population using an unimproved source		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
1990	1.5	5.0	6.4	92%	39%	51%	-	7%	-	-	32%	-	8%	61%	49%
2000	1.9	6.2	8.1	-	41%	-	-	9%	-	-	32%	-	-	59%	-
2006	2.2	7.0	9.2	91%	37%	50%	-	6%	-	-	31%	-	9%	63%	50%
2015	2.7	7.9	10.6	-	-	76%**	-	-	-	-	-	-	-	-	-

** Regional MDG target

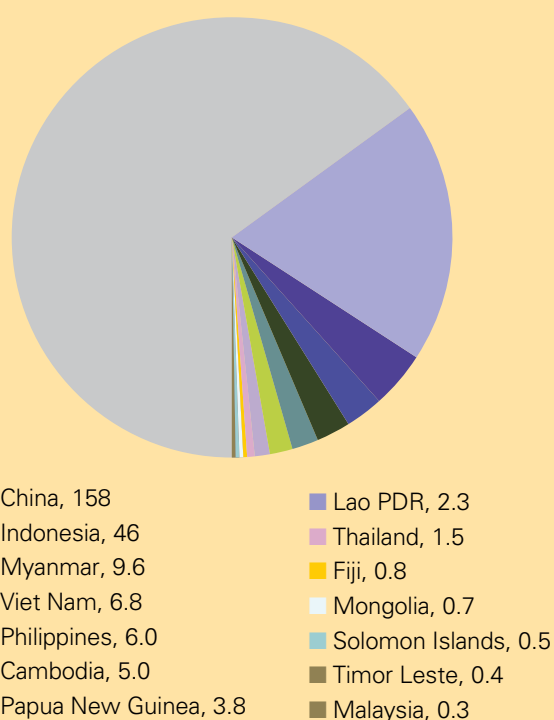
China's Size Impacts Regional Trends

China strongly influences the regional estimates

China's population makes up two thirds (67 per cent) of the regional population of East Asia and the Pacific. The impact of China on the drinking water estimates is greatest for piped drinking water connections on premises. China's piped-on-premises coverage is almost twice as high as that of the combined countries in the region (EAP without China). Piped supplies on premises in China increased from 49 per cent in 1990 to 72 per cent in 2006 compared to a rise from 21 per cent to 37 per cent over the same period in the rest of the region.

Half of the population in the region outside of China rely on other improved sources which include public taps, handpumps, improved dug wells, protected springs or rainwater.

Figure 23: Population who did not use an improved drinking water source in 2006, by country (millions)



China's sanitation coverage is virtually at the same level as the average of the rest of East Asia and the Pacific. However a quarter of the population in China practices fixed place defecation using unimproved facilities that do not meet the minimum standards of an improved facility which hygienically separates human waste from human contact – compared to only 8 per cent in the rest of the region.

Open defecation rates in China are comparatively low. Only 3 per cent of the population practices open defecation compared to an average of 18 per cent for the remaining countries in the region. Open defecation rates in these countries range from 0 per cent in Thailand to 29 per cent in Indonesia and 68 per cent in Cambodia.

Figure 24: Trends in Use of Drinking Water Sources, 1990-2006

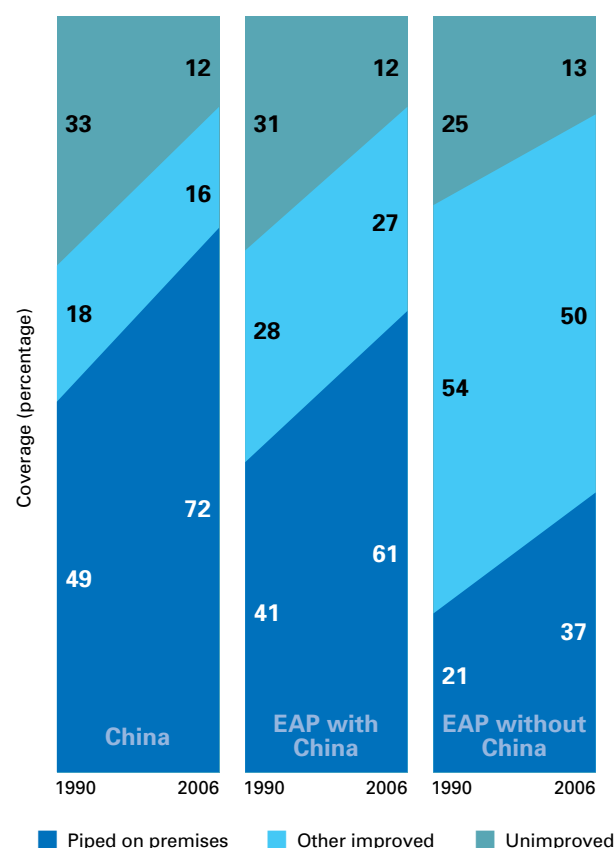
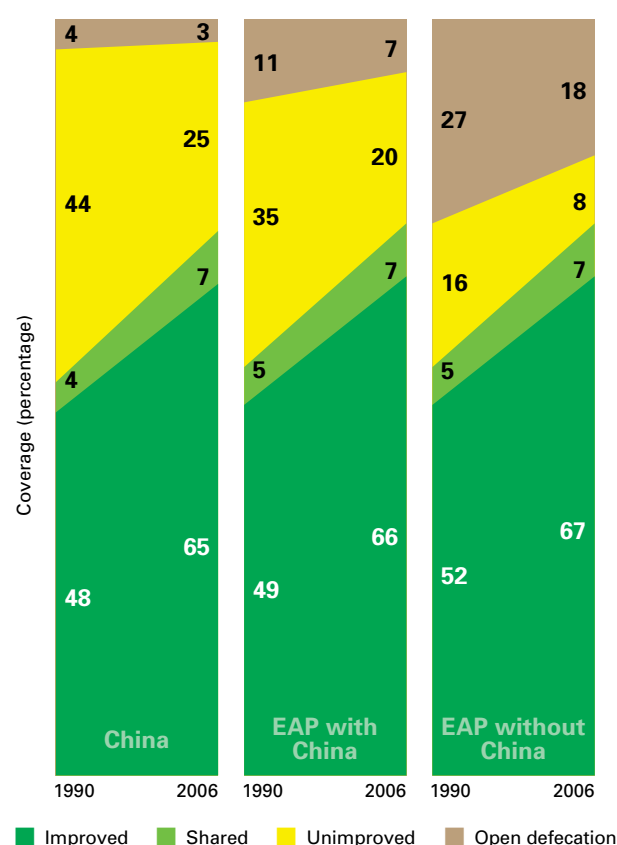


Figure 25: Trends in Sanitation, 1990-2006



Drinking Water and Sanitation Coverage: Country Estimates by Type of Drinking Water and Sanitation Facilities (2006)

Country, area or territory	Population		2006 Drinking water coverage (percentage)								
			Urban				Rural				
	Total (1,000)	Urban (%)	Improved	Piped into dwelling, yard or plot	Other improved	Unimproved	Improved	Piped into dwelling, yard or plot	Other improved	Unimproved	Improved
Brunei Darussalam	382	74	-	-	-	-	-	-	-	-	-
Cambodia	14,197	20	80	43	37	20	61	5	56	39	65
China	1,320,864	41	98	87	11	2	81	62	19	19	88
Cook Islands	14	75	98	-	-	2	88	-	-	12	95
DPR Korea	23,708	62	100	81	19	0	100	71	29	0	100
Fed. States of Micronesia	111	22	95	-	-	5	94	-	-	6	94
Fiji	833	51	43	32	11	57	51	7	44	49	47
Indonesia	228,864	49	89	34	55	11	71	7	64	29	80
Kiribati	94	52	77	49	28	23	53	22	31	47	65
Lao PDR	5,759	21	86	69	17	14	53	8	45	47	60
Malaysia	26,114	68	100	98	2	0	96	87	9	4	99
Marshall Islands	58	67	-	-	-	-	-	-	-	-	-
Mongolia	2,605	57	90	35	55	10	48	6	42	52	72
Myanmar	48,379	31	80	16	64	20	80	2	78	20	80
Nauru	10	100	-	-	-	-	-	-	-	-	-
Niue	2	37	100	100	0	0	100	-	-	0	100
Palau	20	34	79	-	-	21	94	-	-	6	89
Papua New Guinea	6,202	13	88	61	27	12	32	4	28	68	40
Philippines	86,264	63	96	69	27	4	88	24	64	12	93
Rep. of Korea	48,050	81	97	96	1	3	-	-	-	-	-
Samoa	185	23	90	-	-	10	87	-	-	13	88
Singapore	4,382	100	100	100	0	0	-	-	-	-	-
Solomon Islands	484	17	94	76	18	6	65	1	64	35	70
Thailand	63,444	33	99	84	15	1	97	35	62	3	98
Timor Leste	1,114	27	77	28	49	23	56	11	45	44	62
Tonga	100	24	100	-	-	0	100	-	-	0	100
Tuvalu	10	58	94	-	-	6	92	-	-	8	93
Vanuatu	221	24	-	-	-	-	-	-	-	-	-
Viet Nam	86,206	27	98	59	39	2	90	8	82	10	92
EAP region	1,968,676	43	96	77	19	4	81	48	33	19	88
WORLD	6,592,900	49	96	78	18	4	78	31	47	22	87

			2006 Sanitation coverage (percentage)											
Total			Urban				Rural				Total			
Piped into dwelling, yard or plot	Other improved	Unimproved	Improved	Shared facilities	Unimproved facilities	Open defecation	Improved	Shared facilities	Unimproved facilities	Open defecation	Improved	Shared facilities	Unimproved facilities	Open defecation
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	52	35	62	6	1	31	19	4	0	77	28	4	0	68
72	16	12	74	15	7	4	59	1	38	2	65	7	25	3
-	-	5	100	-	0	0	100	-	0	0	100	-	0	0
7	23	0	-	-	-	-	-	-	-	-	-	-	-	-
-	-	6	61	-	39	-	14	-	86	-	25	-	75	-
20	27	53	87	-	13	-	55	-	45	-	71	-	29	-
20	60	20	67	8	7	18	37	5	19	39	52	6	13	29
36	29	35	46	13	0	41	20	2	25	53	33	8	12	47
21	39	40	87	5	2	6	38	1	5	56	48	2	4	46
95	4	1	95	4	1	-	93	4	3	-	94	4	2	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	50	28	64	31	3	2	31	23	19	27	50	28	9	13
6	74	20	85	10	4	1	81	11	0	8	82	11	1	6
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	0	100	-	0	0	100	-	0	0	100	-	0	0
-	-	11	96	-	4	-	52	-	48	-	67	-	33	-
12	28	60	67	10	19	4	41	1	38	20	45	2	35	18
53	40	7	81	13	1	5	72	10	4	14	78	12	2	8
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	12	100	-	0	0	100	-	0	0	100	-	0	0
-	-	-	100	-	0	0	-	-	-	-	-	-	-	-
14	56	30	98	-	2	-	18	-	82	-	32	-	68	-
51	47	2	95	5	0	0	96	4	0	0	96	4	0	0
16	46	38	64	4	12	20	32	2	18	48	41	3	16	40
-	-	0	98	-	2	-	96	-	4	-	96	-	4	-
-	-	7	93	-	7	-	84	-	16	-	89	-	11	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	70	8	88	5	6	1	56	3	25	16	65	4	19	12
61	27	12	75	13	6	6	59	2	31	8	66	7	20	7
54	33	13	79	11	5	5	45	5	19	31	62	8	12	18

Drinking Water Coverage: Country Estimates by Type of Drinking Water Source (2000 - 2015)

	Population (thousands)			Total drinking water coverage		MDG drinking water target (JMP) 2015	Population with access (thousands)		Change in population with access 2000 - 2006
	2000	2006	2015	2000	2006		2000	2006	
Cambodia	12,780	14,197	16,641	38%	65%	55%	4,801	9,208	92%
China	1,269,961	1,320,864	1,388,600	80%	88%	83%	1,019,808	1,162,712	14%
DPR Korea	22,946	23,708	24,416	100%	100%	100%	22,946	23,708	3%
Indonesia	211,693	228,864	251,567	77%	80%	86%	163,513	182,804	12%
Lao PDR	5,224	5,759	6,699	46%	60%	67%	2,402	3,452	44%
Malaysia	23,274	26,114	30,047	98%	99%	99%	22,918	25,783	13%
Mongolia	2,470	2,605	2,858	68%	72%	82%	1,675	1,872	12%
Myanmar	45,884	48,379	51,998	71%	80%	78%	32,470	38,703	19%
Papua New Guinea	5,381	6,202	7,319	39%	40%	70%	2,120	2,452	16%
Philippines	76,213	86,264	101,090	90%	93%	92%	68,481	80,293	17%
Thailand	60,666	63,444	66,763	97%	98%	98%	58,617	61,954	6%
Timor Leste	819	1,114	1,504	61%	62%	-	501	687	37%
Viet Nam	79,094	86,206	96,467	77%	92%	76%	61,173	79,439	30%
Cook Islands	16	14	12	95%	95%	-	15	14	-7%
Fed. States of Micronesia	107	111	116	92%	94%	94%	99	105	6%
Fiji	802	833	874	47%	47%	71%	378	392	-
Kiribati	84	94	107	62%	65%	74%	52	61	17%
Marshall Islands	52	58	70	88%	-	-	45	-	-
Nauru	10	10	11	-	-	-	-	-	-
Niue	2	2	1	100%	100%	-	2	2	0%
Palau	19	20	21	90%	89%	-	17	18	6%
Samoa	177	185	198	89%	88%	96%	157	162	3%
Solomon Islands	415	484	589	70%	70%	83%	289	339	-
Tonga	98	100	104	100%	100%	100%	98	100	2%
Tuvalu	10	10	11	93%	93%	-	10	10	0%
Vanuatu	190	221	270	59%	-	80%	112	-	-

People having gained access to an improved drinking water source 2000 - 2006 (thousands)	People to gain access 2006 - 2015 to meet the MDG drinking water target (thousands)	Population without access (thousands)		Change in population without access (percentage) 2006	Number of children under 5 years of age without access (thousands) 2006	Population with access in 2015 when current trend continues (thousands)	Population without access in 2015 when current trend continues (thousands)	Population without access in 2015 when MDG target is met (thousands)
		2000	2006					
4,407	Target pop. met	7,979	4,989	-37%	594	16,641	0	Surpassed target
142,904	Target pop. met	250,153	158,152	-37%	10,105	1,388,600	0	Surpassed target
762	708	-	-	-	-	24,416	0	Surpassed target
19,291	33,379	48,180	46,060	-4%	4,371	211,316	40,251	Surpassed target
1,050	1,040	2,822	2,307	-18%	287	5,426	1,273	Surpassed target
2,865	3,962	356	331	-7%	35	29,747	300	Surpassed target
197	477	795	733	-8%	65	2,229	629	Surpassed target
6,233	2,038	13,414	9,676	-28%	829	48,878	3,120	Surpassed target
332	2,648	3,261	3,750	15%	543	2,928	4,391	Surpassed target
11,812	12,352	7,732	5,971	-23%	763	99,068	2,022	Surpassed target
3,337	3,199	2,049	1,490	-27%	106	66,095	668	Surpassed target
186	-	318	427	34%	73	-	-	-
18,266	Target pop. met	17,921	6,767	-62%	636	96,467	0	Surpassed target
-1	Target pop. met	1	0	-100%	0	-	-	-
6	4	8	6	-25%	1	113	3	Surpassed target
-	618	424	833	96%	90	411	463	Surpassed target
9	-	32	33	3%	0	-	-	-
-	-	7	-	-	0	-	-	-
-	-	10	10	-	0	-	-	-
0	-	0	0	-	0	-	-	-
1	-	2	2	0%	0	-	-	-
5	27	20	23	15%	3	170	28	Surpassed target
-	488	126	484	-	70	418	171	Surpassed target
2	4	0	0	-	0	104	0	Surpassed target
0	-	0	0	-	0	-	-	-
-	217	78	221	-	31	-	-	-

Sanitation Coverage: Country Estimates by Type of Sanitation Facility (2000 - 2015)

	Population (thousands)			Total sanitation coverage		MDG sanitation target (JMP) 2015	Population with access (thousands)		Change in population with access 2000 - 2006
	2000	2006	2015	2000	2006		2000	2006	
Cambodia	12,780	14,197	16,641	16%	28%	49%	2,058	3,938	91%
China	1,269,961	1,320,864	1,388,600	59%	65%	74%	745,778	861,202	15%
DPR Korea	22,946	23,708	24,416	59%	-	77%	13,491	-	-
Indonesia	211,693	228,864	251,567	52%	52%	76%	109,236	118,531	9%
Lao PDR	5,224	5,759	6,699	23%	48%	53%	1,217	2,769	128%
Malaysia	23,274	26,114	30,047	94%	94%	-	21,932	24,643	12%
Mongolia	2,470	2,605	2,858	48%	50%	71%	1,187	1,296	9%
Myanmar	45,884	48,379	51,998	59%	82%	62%	27,019	39,792	47%
Papua New Guinea	5,381	6,202	7,319	44%	45%	72%	2,391	2,759	15%
Philippines	76,213	86,264	101,090	72%	78%	79%	55,023	67,039	22%
Thailand	60,666	63,444	66,763	93%	96%	89%	56,190	60,699	8%
Timor Leste	819	1,114	1,504	40%	41%	-	327	452	38%
Viet Nam	79,094	86,206	96,467	51%	65%	67%	40,731	55,688	37%
Cook Islands	16	14	13	100%	100%	98%	16	14	-13%
Fed. States of Micronesia	107	111	116	26%	25%	65%	27	27	0%
Fiji	802	833	874	70%	71%	84%	565	595	5%
Kiribati	84	94	107	30%	33%	61%	25	31	24%
Marshall Islands	52	58	70	81%	-	88%	42	-	-
Nauru	10	10	11	-	-	-	-	-	-
Niue	2	2	1	100%	100%	100%	2	2	0%
Palau	19	20	21	65%	67%	81%	13	14	8%
Samoa	177	185	198	100%	100%	99%	177	185	5%
Solomon Islands	415	484	589	31%	32%	61%	127	153	20%
Tonga	98	100	104	96%	96%	98%	95	97	2%
Tuvalu	10	10	11	86%	89%	89%	9	9	0%
Vanuatu	190	221	270	50%	-	72%	95	-	-

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JMP Methodology

The WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation (JMP) is the official United Nations mechanism tasked with monitoring progress towards MDG Target 7c on drinking water and sanitation. JMP publishes updated coverage estimates every two years on the various types of drinking-water sources and sanitation facilities used worldwide. In line with the MDG indicator definition, which stipulates “use of improved facilities” as a proxy for “access to improved facilities”, the JMP measures and reports on the actual use of facilities. It is worth noting that the household surveys on which the JMP relies also measure “use” and not “access” – since access involves many additional criteria other than use. Measurability of many of these criteria at the national scale, which is the scale required by the JMP, poses a huge challenge.

Data sources and MDG data base

The water supply and sanitation coverage estimates presented in this report draw from data collected by national statistics offices and other relevant institutions through nationally representative household surveys and national censuses. The survey data used are mainly drawn from Demographic and Health Surveys (DHS), Multiple Indicator Cluster Surveys (MICS), World Health Surveys (WHS), Living Standards and Measurements Surveys (LSMS), Core Welfare Indicator Questionnaires (CWIQ), Health and Nutrition Surveys, Household Budget Surveys and Reproductive Health Surveys. JMP estimates are therefore based on nationally generated and owned data, JMP assembles, reviews and assesses these household survey and census data.

Population estimates

The population estimates and the proportion of the population living in urban and rural areas used in this report are those estimated by the United Nations Population Division (2006 revision). These estimates may differ from national population estimates.

Methodology to derive MDG coverage and progress estimates

For each country, survey and census data are plotted on a time scale from 1980 to the present. A linear trend line, based on the least-squares method, is drawn through these data points to estimate coverage for 1990 and 2006. The total coverage estimates are based on the aggregate of the population-weighted urban and rural coverage numbers, divided by the total population.

Trend analyses at country level have been made for the following categories:

Drinking water

- Piped water into dwelling, plot or yard
- Improved drinking water sources

Sanitation

- Improved sanitation facilities*
- Open defecation

*The coverage estimates for improved sanitation facilities presented in this report are discounted by the proportion of the population that shared an improved type of sanitation facility. This ratio (the proportion of the population that shares a sanitation facility of an otherwise adequate type among two or more households) derived from the latest household survey/census is subsequently subtracted from the trend estimates of improved sanitation facilities. This results in the estimates for shared sanitation facilities.

Differences with national coverage estimates

Indicator definitions and population estimates used by the JMP sometimes differ from those used by national governments. Estimates have been computed by JMP to ensure compatibility between countries and over time; thus they are not necessarily the official statistics of the concerned states, which may use alternative rigorous methods.



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