



1981-1990

The International Drinking Water Supply and Sanitation Decade

End of decade review
(as at December 1990)

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**The International
Drinking Water Supply
and Sanitation Decade**

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PREFACE

This document presents data on the status of water supply and sanitation services in developing countries as at December 1990, the end of the International Drinking Water Supply and Sanitation Decade. Read alongside WHO Offset Publication no. 85, *International Drinking Water Supply and Sanitation Decade - Review of National Baseline Data (as at December 1980)*, it indicates progress achieved since the start of the IDWSSD. To facilitate comparison of conditions between 1980 and 1990, this document has been produced in the same format and with similar table numbering to that in WHO Offset Publication no. 85.

The document should also be read in conjunction with WHO publications (out of series) *The International Drinking Water Supply and Sanitation Decade - Review of National Progress (as at December 1983)*, (as at December 1985), and (as at December 1988).

The fact that so much information could be collected so quickly after the 31 December 1990 assessment date represents a considerable achievement on the part of the individual countries, and is a clear indication of worldwide interest in the Decade. But, as stated in the previous publications, collection and collation of data on water supply and sanitation services poses many difficulties. This is due to the diversity of the ministries, agencies and local authorities with responsibility for services and also to the general lack of central sectoral information collection in the countries.

The information presented in the document, and on the basis of which analyses have been made, has been provided to WHO by governments. Neither time nor resources enabled any verification of the data to be undertaken.

Definitions also pose problems since no universal criteria exist dealing with, for example, adequate and safe water supply and appropriate sanitation, or for urban and rural populations. In fact, it might not be appropriate for standard definitions to be applied, since perceptions can be country-specific. Classifying urban and rural populations on the basis of size, for example, can be confusing since small communities in relatively developed countries can have all the necessary features for urban classification. A larger community in another country may lack these and be truly rural in nature.

This report represents, within the limits of these constraints, as full a picture as possible of the status of water supply and sanitation services nationally, regionally and globally, as well as the developments that have taken place during the ten-year period 1981-1990. It has been made possible by the efforts in collecting and collating dispersed information by the governments reporting to WHO. Staff members of the United Nations and the specialized agencies, particularly the WHO country and regional offices and the Resident Representatives of the United Nations Development Programme, have made major contributions to this document.

INTRODUCTION

The International Drinking Water Supply and Sanitation Decade 1981-1990 was a period of accelerated and concerted efforts by governments of the world's developing countries to expand water supply and sanitation services to the underserved populations.

During this period, the World Health Organization, in response to a need identified in the Plan of Action resulting from the United Nations Water Conference, Mar del Plata 1977, intensified the water supply and sanitation sector monitoring efforts it had initiated in the early 1960s. This publication is the last of a series prepared periodically during the Decade (1980, 1983, 1985, 1988 and 1990) presenting the information provided by governments, and through comparison with previous years' reporting, presents an assessment of what was achieved.

Although this report presents information on social, economic and health status as they relate to water supply and sanitation, a summary of the Decade is probably best encapsulated in a review of the success achieved in expanding services. After all, it was in terms of service coverage that the goals of the Decade were set:

- all people, whatever their stage of development and their social and economic conditions have the right to have access to drinking water in quantities and quality equal to their basic needs;
- all people, whatever their stage of development and their social and economic conditions have the right to have access to appropriate disposal of sewage;
- where human needs have not yet been satisfied, national development policies and plans should give priority to the supply of drinking water for the entire population, and to the final disposal of waste water;
- nations should prepare for 1990 programmes and plans to provide coverage for populations.

To do this, the comparison between the number of people served in 1980 and 1990 and the proportion of the population served in these two years is necessary.

During the course of the Decade, an estimated total of 1200 million people was provided with an adequate and safe water supply, and 770 million were provided with access to an appropriate means of sanitation. In doing so, the number of unserved by an adequate and safe water supply fell by approximately 450 million, while those unserved by an appropriate means of excreta disposal remained almost the same.

Overall, the Decade was a success in advancing water supply towards the ultimate goal of universal coverage, while in the case of sanitation, all that was achieved was to keep pace with population expansion.

With an estimated 42% urban population increase during the Decade, the urban population unserved only fell by about 30 million despite services having been expanded to 430 million. This clearly demonstrates the continuing effort required in the face of urban population expansion in developing countries. The situation is similar in the case of urban sanitation where the population unserved fell by only 30 million despite services having been provided to 425 million people.

A question which is often posed is, why did the Decade not achieve more? The answer to this lies in the constraints to progress cited by governments consistently throughout the 1980s, most serious among which are:

- funding limitations
- inadequate operation and maintenance
- inadequate cost recovery
- insufficient trained personnel

During the Decade, several approaches were developed which contributed to the stimulation of the sector. These were, in particular, the promotion of community participation and the greater involvement of women in the decision-making process, the improvement and application of appropriate technologies amenable to operation and maintenance at the community level and the integration of water supply and sanitation as full partners into primary health care.

During the course of monitoring all these developments, it became clear that a major obstacle to better planning and management of water supply and sanitation was the lack in most cases, of effective sector data collection, analyses, and monitoring systems. Based on the experience of the Decade monitoring exercise, a major effort should be made during the 1990s to support countries in developing such systems. As the WHO monitoring and sector advocacy work has evolved during the 1960s, then through the 1970s, with major developments having taken place during the Decade, so must this evolution and effort continue during the remainder of the century with the emphasis on improving sector programmes at country level

A. GLOBAL REVIEW

1. Socioeconomic and health situation

During the International Drinking Water Supply and Sanitation Decade, population trends have been much as anticipated, with an overall population increase in the world's developing countries of 23%; 42% in urban areas and 15% in rural areas.

The overall population increase during the Decade is estimated to be over 750 million, of whom 400 million are urban and 350 million are rural.

The impact of rapid urban population growth is most acute in the countries of Africa. In the period 1981-1990, urban growth was 79% in Africa, 37% in the Americas, 49% in South-East Asia, 53% in the Eastern Mediterranean and 25% in the Western Pacific Region.

The proportion of countries reporting life expectancy of less than 50 years in 1990 was 22%, slightly less than the 23% reported in 1980. Waterborne diseases in over 1% of the population was noted by 48% of reporting countries which is higher than the proportion of 33% at the start of the Decade; no measurable health improvement exists, probably indicating a reporting deficiency.

The proportion of countries reporting infant mortality over 100 per 1000 live births was 31%, slightly higher than the 28% reported for 1980.

Nevertheless, there appears to be continuing improvements in access to water supply and sanitation. The proportion of developing countries reporting more than half their population without access to safe and adequate water supply was 26% compared with 29% in 1988 and 45% at the start of the Decade, while 41% of countries reported more than half of their population without access to appropriate sanitation compared with 47% at the start of the Decade.

2. Targets and planning

Expanding water supply and sanitation services progressed steadily throughout the Decade. Of countries reporting, 98% had previously indicated having had formal Decade plans, and at the end of the Decade 87% had already reported having established plans to continue sector development through the 1990s. The objective of the water supply and sanitation sector is to advance towards realistic goals established for the year 2000 on the road towards universal coverage. This was reaffirmed as the ultimate goal at various international fora, including the World Summit for Children, September 1990.

At the end of the Decade it is worth noting how coverage levels globally generally fall short of the national targets established in the early 1980s.

Table A.1. Comparison between 1990 actual service coverage levels and targets established for the Decade (percentages)

Region	Urban water supply		Rural water supply		Urban sanitation		Rural sanitation	
	1990 actual cov.	1990 target cov.	1990 actual cov.	1990 target cov.	1990 actual cov.	1990 target cov.	1990 actual cov.	1990 target cov.
Africa	79	88	32	54	68	69	22	60
Americas	90	95	52	64	82	92	36	41
South East Asia	73	83	64	82	50	49	12	31
Eastern Mediterranean	91	99	51	63	79	86	20	31
Western Pacific	91	93	66	90	92	90	76	87
Total	85	91	62	81	74	76	42	58

Table A.1 above clearly shows that in few cases have Decade targets been achieved or almost achieved on a regional basis. The only exceptions are in the case of urban sanitation in Africa, South-East Asia and the Western Pacific and urban water supply in the Western Pacific. However, in several other instances notable progress has been made towards reaching the goals.

- Africa - Urban water (only 9 percentage points short of target)
- Eastern Mediterranean - Urban water (over 90% coverage attained)
- Western Pacific - Urban water (only 2 percentage points short of target)
- Eastern Mediterranean - Urban sanitation (only 7 percentage points short of target)

i.e. all in the urban sub-sector

The largest shortfalls in reaching Decade targets have generally been in the area of rural sanitation where the percentage shortfalls are estimated to be:

- Africa - 63%
- Americas - 12%
- South-East Asia - 61%
- Eastern Mediterranean - 35%
- Western Pacific - 13%

For comparison it is worth noting the corresponding shortfall in programme delivery for urban water supply.

Africa	- 10%
Americas	- 5%
South-East Asia	- 12%
Eastern Mediterranean	- 8%
Western Pacific	- 2%

Fig. A.2 Comparison of average shortfall in sub-sector programmes delivery (percentages)

Region	Urban water supply	Rural water supply	Urban sanitation	Rural sanitation
Africa	10	41	1	63
Americas	5	19	11	12
South-East Asia	12	22	0	61
Eastern Med.	8	19	8	35
Western Pacific	2	27	0	13
Global	7	23	3	28

The bias in favour of the urban sub-sector and water supply in both the urban and rural sub-sectors is apparent from Fig. A.2 above.

3. 1990 Service levels

The major achievements of the Decade include the apparent expansion of urban water supply service coverage in the world's developing countries from 75% in 1980 to 85% at the end of 1990, the expansion of urban sanitation coverage from 60% to 74% and the expansion of rural water supply from 34% to 59% service coverage. Although progress in expanding rural sanitation still leaves only an estimated 40% with services, this relatively high value masks the fact that except for the Western Pacific Region which has a reported 76% coverage largely due to China, the coverage in the other Regions is considerably lower: Africa 22%, America 36%, South-East Asia 12% and the Eastern Mediterranean 20%.

4. Closing the gap

A summary of the global water supply and sanitation coverage values in 1980 and 1990 is presented in Tables A.3 and A.4 below:

Table A.3 Summary of water supply service coverage levels : 1980 & 1990

Urban Water Supply

Region	1980			1990		
	Population (millions)	% Coverage	Population served (millions)	Population (millions)	% Coverage	Population served (millions)
Africa	82.70	66	54.58	147.62	79	116.60
Americas	236.72	78	184.64	324.08	90	291.67
South-East Asia	236.07	64	151.08	351.77	73	256.79
Eastern Med.	113.15	83	93.91	173.13	91	157.55
Western Pacific	267.83	81	216.94	335.51	91	305.31
Total	936.47	75	701.15	1332.11	85	1127.92

Rural Water Supply

Region	1980			1990		
	Population (millions)	% Coverage	Population served (millions)	Population (millions)	% Coverage	Population served (millions)
Africa	275.25	22	60.56	339.39	32	108.60
Americas	124.91	42	52.46	123.87	52	64.41
South-East Asia	823.27	31	255.21	958.33	64	613.33
Eastern Med.	174.27	30	52.28	217.77	51	111.06
Western Pacific	905.30	41	371.17	1019.14	66	672.63
Total	2303.00	34	791.68	2658.50	59	1570.03
Total Urban/Rural	3239.47	46	1492.83	3990.61	68	2697.95

Table A. 4 Summary of sanitation coverage levels: 1980 & 1990

Urban Sanitation

Region	1980			1990		
	Population (millions)	% Coverage	Population served (millions)	Population (millions)	% Coverage	Population served (millions)
Africa	82.70	54	44.66	147.62	68	100.38
Americas	236.72	56	132.56	324.08	82	265.75
South-East Asia	236.07	30	70.82	351.77	50	175.89
Eastern Med.	113.15	57	64.50	173.13	79	136.77
Western Pacific	267.83	93	249.08	335.51	92	308.67
Total	936.47	60	561.62	1332.11	74	987.46

Rural Sanitation

Region	1980			1990		
	Population (millions)	% Coverage	Population served (millions)	Population (millions)	% Coverage	Population served (millions)
Africa	275.25	20	55.05	339.39	22	74.67
Americas	124.91	20	24.98	123.87	36	44.59
South-East Asia	823.27	6	49.40	958.33	12	118.60
Eastern Med.	174.27	7	12.20	217.77	20	43.55
Western Pacific	905.30	63	570.34	1019.14	76	774.55
Total Rural	2303.00	31	711.97	2658.50	40	1055.96
Total Urban/Rural	3239.47	39	1273.59	3990.61	51	2043.42

Table A.5 Population estimates for the year 2000

Region	Urban Population (millions)	Rural Population (millions)	Total Population (millions)
Africa	253.79	416.51	670.30
Americas	416.72	122.81	539.53
South-East Asia	523.98	1069.09	1593.07
Eastern Mediterranean	260.35	259.43	519.78
Western Pacific	446.84	1102.71	1549.55
Western Pacific (ex China)	124.71	138.95	263.66
Total	1901.68	2970.55	4872.23
Total (ex China)	1579.55	2006.79	3586.34

Table A.6 Estimated population increase 1990-2000

Region	Urban Population (millions)	Rural Population (millions)	Total Population (millions)
Africa	106.17	77.12	183.29
Americas	92.64	-1.06	91.58
South-East Asia	172.21	110.76	282.97
Eastern Mediterranean	87.22	41.66	128.88
Western Pacific	111.33	83.57	194.90
Western Pacific (ex China)	32.67	11.83	44.50
Total	569.57	312.05	881.62
Total (ex China)	490.91	240.31	731.22

Urban water supply Fifteen per cent of the urban population of the world's developing countries was without access to an adequate and safe water supply at the end of 1990 representing around 205 million people. With an expected urban population increase of 570 million by the year 2000, the total urban population to be reached with extended water supply services to attain universal coverage by the end of the century is 775 million.

Urban sanitation At the end of the Decade an estimated 26% of the urban population was estimated to be without access to an appropriate means of excreta disposal. This represents a total of 345 million people unserved. The total urban population to be served with appropriate sanitation by the year 2000 for universal coverage to be attained is therefore almost 915 million.

Rural water supply At the end of 1990 an estimated 41% of the rural population of the world's developing countries was without access to an adequate and safe water supply. This represented a total of 1090 million unserved. The proportion unserved, however, varied considerably among Regions, being highest in Africa at 68%. During the 1990s the rural population of developing countries is expected to rise by about 312 million, meaning that for universal coverage to be attained, a total of about 1400 million rural residents will have to be served.

Rural sanitation Sixty per cent of the rural population of developing countries is estimated to be without access to an appropriate facility at the end of the IDWSSD. This represents a total of around 1603 unserved. The level of unserved varies greatly from region to region, being 88% in South-East Asia but only 24% in the Western Pacific Region. Allowing for population increases by the year 2000, a total of 1915 million will have to be provided with access to a service if universal coverage is to be attained.

5. **Staff and training**

From Table A.5 it can be seen that there are wide differences among the Regions in levels of staffing for sector operations. The Eastern Mediterranean Region reports approximately 1500 personnel required to serve 1 million people, approximately double the number reported at the start of the Decade. At the other end of the scale, Africa reported only 177 staff for every million people served, significantly lower than the value of 268 reported in 1980.

In general, no significant increase in the number of people per million served seemed to be required. Since lack of professional and sub-professional staff were two of the major constraints reported by the South-East Asia, the Eastern Mediterranean and the Western Pacific Regions, it can be deduced that it is largely a question of lack of quality rather than lack of numbers, i.e. capacity building, human resources development (HRD) and training are what is called for, rather than recruiting more personnel.

6. **Financial resources**

Analysis of the number of people served with different types of water supply and sanitation services combined with the reported per capita cost of such services provided an estimate of the total capital investment in the sector during the Decade (Table A.6.1).

Table A6.1 Estimated investment in water supply and sanitation 1981-1990 US\$ millions

Region	Urban water supply (millions)	Urban sanitation (millions)	Rural water supply (millions)	Rural sanitation (millions)	Total (millions)
Africa	5118	5836	1862	421	13237
Americas	14756	15354	892	445	31447
South-East Asia	5891	7191	7234	789	21105
Eastern Mediterranean	8833	10573	2705	1193	23304
Western Pacific	10922	14349	15678	3880	44829
Total	45520	53303	28371	6728	133922

Of the funds estimated to have been invested in water supply and sanitation during the Decade, approximately 55% was for the water sector, leaving 45% for sanitation development, a not too inequitable balance. The distribution of funding between urban and rural population, however, provides a somewhat different picture, with 74% of funding going to the urban needs and only 26% being allocated to the rural areas. The disparity is particularly serious in the case of sanitation where only 19% of the total investment is allocated to the rural areas. This latter situation is particularly serious since around 80% of those still unserved are in the rural areas. Of the total estimated sector investment during the Decade of US\$ 133 922 million, a calculated total of US\$ 46 063 million (34%) was from external sources.

Table A6.2 Breakdown of Investment between National and External Sources

Region	Total funding US\$ millions	External funding		Internal funding (US\$ millions)	
		US\$ millions	%	US\$ millions	%
Africa	13237	9796	74	3441	26
Americas	31447	15717	50	15730	50
South-East Asia	21105	9138	43	11967	57
Eastern Med.	23304	8273	36	15031	64
Western Pacific	44829	3139	7	41709	93
Total	133922	46062	34	87860	66

Of the total external funding, 21% was in Africa, 34% in the Americas, 20% in South-East Asia, 18% in the Eastern Mediterranean and only 7% in the Western Pacific Region.

7. Decade Approaches

Only 17% of reporting countries indicated that programmes were being implemented specifically addressing the plight of the urban poor and most of these were in Africa and the Americas. This appeared to be a problem of lesser concern in South-East Asia, the Eastern Mediterranean and the Western Pacific.

As far as involving the rural population in planning, 38% of reporting countries indicated that this was undertaken to some extent while 46% of countries reported such involvement in the construction and operational phases of programmes.

Only 37% of countries reported health and hygiene education being included as a part of primary school curricula, while just under 50% of countries reported programmes being specifically implemented to improve women's participation and the integration of water supply and sanitation as components of primary health care policies and programmes.

Fig. A.1. Global
Population coverage in 1980, 1983, 1985, 1988 & 1990 ^a

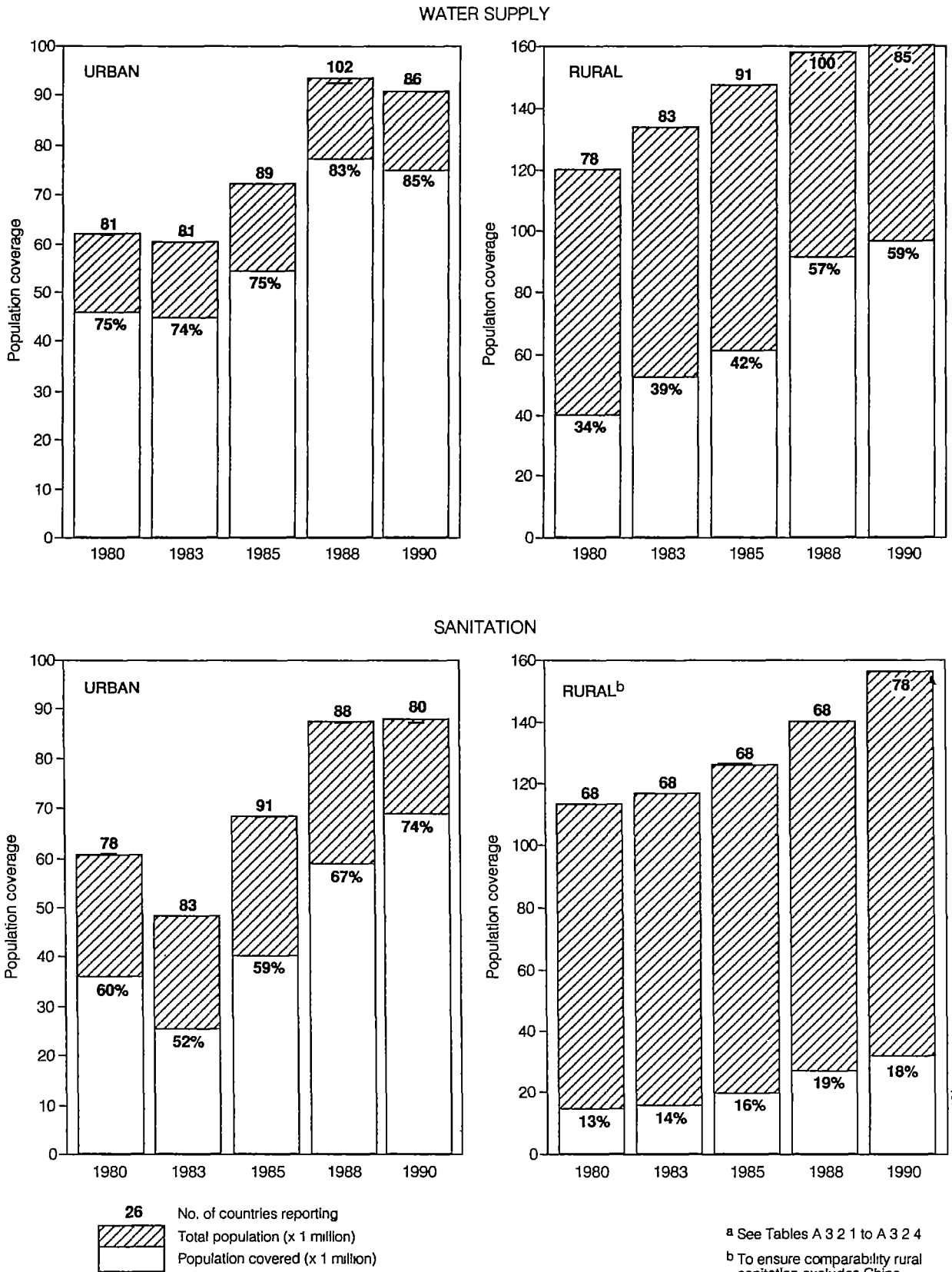


TABLE A.1 - GLOBAL 1990
 BASIC INDICATORS: DEMOGRAPHIC, ECONOMIC, HEALTH.

Region	Number of countries/ territories/ reporting	Estimated population increase, 1980-1990			Number of LDCs	Number of countries with							
		Total (%)	Urban (%)	Rural (%)		Fresh water resources		Life expectancy under 50 years	Infant mortality over 100 per 1000 live births	Waterborne disease in over 1% of population *	50% or more of population lacking safe water	50% or more of population lacking sanitation	
						Very limited	Not well known						
Africa	26	34.6	65.6	22.5	11	2	3	15	17	6	12	14	
Americas	22	23.9	36.9	-0.8	1	1	1	0	2	5	3	5	
South-East Asia	10	23.7	49.0	16.4	4	1	0	1	3	4	4	7	
Eastern Mediterranean	10	36.0	53.0	25.0	1	3	0	0	2	4	1	2	
Western Pacific	27	15.5	25.3	12.6	3	5	1	1	1	8	3	4	
TOTAL	95	23.2	43.3	15.4	20	12	5	17	25	27	23	32	
%	78				45	10	3	22	31	48	26	41	

TABLE A.2 - Global 1990
 COVERAGE 2000 TARGETS AND PLANS FOR ATTAINING THEM.

Region	No. of countries with total coverage targets ^a				No. of countries with low (50% or less) targets in rural areas		No. of countries that have prepared or are preparing formal 2000 plans
	Urban water supply	Urban sanitation	Rural water supply	Rural sanitation	-----		
					Water	Sanitation	
Africa	15	12	15	13	7	6	15
Americas	13	12	13	12	1	2	14
South-East Asia	7	7	9	9	1	5	8
Eastern Mediterranean	9	7	5	3	3	4	9
Western Pacific	17	15	17	18	0	1	13
TOTAL	61	53	59	55	12	18	59
%	69	60	66	85	20	32	87

(a) Targets of 95% or over considered as full coverage.
 Data on targets taken from 1980, 1983, 1985, 1988, & 1990 reporting.

TABLE A.3.1 - GLOBAL 1990
TOTAL POPULATION INCLUDED IN REPLIES TO EACH SUB-SECTOR BY REGION AND GLOBALLY.

Region	Population with drinking-water				Population with sanitation			
	Urban			Rural	Urban			Rural
	Total	By H.C. ^a	By P.S. ^b		Total	By S.C. ^c	By other	
Africa	117 155	63 733	108 708	255 494	110 792	69 001	67 576	237 189
Americas	250 565	244 638	244 638	91 280	245 525	244 848	239 807	89 727
South-East Asia	329 719	317 859	317 859	990 476	329 719	314 199	314 199	990 470
Eastern Mediterranean	120 328	84 074	84 074	164 824	120 328	84 398	84 398	131 582
Western Pacific	410 211	64 285	64 136	1 073 159	311 914	63 713	60 876	1 041 636
Western Pacific (Excl. China)	198 326	64 285	64 136	122 942	100 028	63 713	60 876	91 419
TOTAL	1 227 978	774 589	819 415	2 575 233	1 118 278	776 159	766 856	2 490 604
TOTAL (Excl. China)	1 016 093	774 589	819 415	1 625 016	906 392	776 159	766 856	1 540 387

(a) H.C. = House connection. (b) P.S. = Public standpost. (c) S.C. = Sewer connection.

Note: For calculating percentage coverage it is not possible to use the total urban and rural population figures for the countries responding to the questionnaire since all countries did not provide information on all sectors and sub-sectors. Percentage coverage has to be calculated therefore individually for each sub-sector using the appropriate population totals above.

TABLE A.3.2 - GLOBAL 1990
PERCENTAGE COVERAGE IN 1970, 1975, 1980, 1983, 1985, 1988 AND 1990.

Region	Year	Urban water supply		Urban sanitation		Urban Sanitation as percentage of urban water supply	Rural water supply	Rural sanitation	Rural sanitation as percentage of rural water supply
		House connection	Stand-post	Sewer connection	By other means				
Africa	1970	33	33	8	39	71	13	23	177
	1975	37	31	15	60	110	21	28	133
	1980	29	31	11	43	85	22	20	91
	1983	33	28	17	40	93	26	25	96
	1985	33	33	12	59	108	25	25	100
	1988	42	32	13	41	73	31	21	68
	1990	49	20	32	41	106	32	22	69
Americas	1970	61	15	36	40	100	24	24	100
	1975	67	14	35	45	99	32	25	78
	1980	71	7	42	14	72	42	20	48
	1983	74	12	42	32	86	40	18	45
	1985	71	13	41	39	95	47	27	57
	1988	74	14	51	39	102	57	31	54
	1990	80	11	50	33	91	52	36	69
South-East Asia	1970		46*		33*	72	8	4	50
	1975		63*		31*	49	17	4	24
	1980		64*		30*	47	31	6	19
	1983		66*		31*	47	43	7	16
	1985		65*		33*	51	47	10	21
	1988		71*		41*	58	68	11	16
	1990		73*		50*	58	66	12	18
Eastern Mediterranean	1970	56	23	7	55	78	19	12	63
	1975	52	28	10	53	79	16	14	88
	1980	53	30	42	15	69	30	7	23
	1983	68	28	41	47	92	26	7	27
	1985	78	16	49	41	96	28	9	32
	1988	75	23	38	56	96	49	20	41
	1990	87	8	41	50	96	51	20	39
Western Pacific	1970	65	10	27	54	108	23	19	83
	1975	75	16	24	57	89	30	43	143
	1980	77	4	17	76	115	41	63	154
	1983	54	16	14	67	116	45	57	127
	1985	70	6	12	82	124	48	66	138
	1988	81	26	28	61	83	55	69	125
	1990	81	15	31	46	80	66	76	115

(a) Most countries did not provide separate data, so combined figures are given.

TABLE A.3.2.1 - GLOBAL 1990
COMPARISON OF COVERAGE AS OF 1980, 1985 AND 1990 - URBAN WATER SUPPLY.

Region	1980			1985			1990			Number of reporting countries		
	Population (000)	Coverage (000)	(%)	Population (000)	Coverage (000)	(%)	Population (000)	Coverage (000)	(%)	1980	1985	1990
Africa	20 788	13 723	66	95 738	74 336	78	93 155	76 387	82	21	35	24
Americas	218 109	169 302	78	195 748	165 086	84	250 565	226 408	90	21	23	21
South-East Asia	232 601	148 834	64	300 929	194 307	65	329 719	242 260	73	9	8	9
Eastern Mediterranean	65 498	54 117	83	63 790	56 838	89	120 328	109 963	91	12	12	10
Western Pacific (Excl. China)	55 768	45 446	81	70 739	52 790	75	198 326	189 441	96	18	11	23
Western Pacific	-	-	-	-	-	-	420 211	373 781	89	-	-	24
TOTAL (Excl. China)	592 764	431 422	73	726 944	543 357	75	992 093	844 459	85	81	89	87

Source: For 1980, International Drinking Water Supply and Sanitation Decade; Review of National Baseline Data (as at December 1980), WHO Offset Publication No. 85, WHO, Geneva 1984.

For 1985, International Drinking Water Supply and Sanitation Decade; Review of Mid-Decade Progress (as at December 1985), CWS/87/5.

TABLE A.3.2.2 - GLOBAL 1990
COMPARISON OF COVERAGE AS OF 1980, 1985 AND 1990 - URBAN SANITATION.

Region	1980			1985			1990			Number of reporting countries		
	Population (000)	Coverage (000)	(%)	Population (000)	Coverage (000)	(%)	Population (000)	Coverage (000)	(%)	1980	1985	1990
Africa	20 788	11 214	54	50 927	37 305	73	86 792	62 490	72	20	34	22
Americas	218 109	122 822	56	219 433	172 433	79	245 525	201 862	82	20	24	19
South East Asia	232 601	70 075	30	300 929	100 205	33	329 719	165 602	50	9	9	9
Eastern Mediterranean	63 608	36 052	57	54 114	36 997	68	120 328	95 523	79	12	12	10
Western Pacific (Excl. China)	55 688	51 905	93	57 991	54 287	94	100 028	73 696	74	17	12	21
Western Pacific	-	-	-	-	-	-	311 914	285 581	92	-	-	22
TOTAL (Excl. China)	590 794	292 068	49	683 394	401 227	59	882 392	599 173	68	78	91	81

Source: For 1980, International Drinking Water Supply and Sanitation Decade; Review of National Baseline Data (as at December 1980), WHO Offset Publication No. 85, WHO, Geneva 1984.

For 1985, International Drinking Water Supply and Sanitation Decade; Review of Mid-Decade Progress (as at December 1985), CWS/87/5.

TABLE A.3.2.3 - GLOBAL 1990
COMPARISON OF COVERAGE AS OF 1980, 1985 AND 1990 - RURAL WATER SUPPLY.

Region	1980			1985			1990			Number of reporting countries		
	Population (000)	Coverage (000)	(%)	Population (000)	Coverage (000)	(%)	Population (000)	Coverage (000)	(%)	1980	1985	1990
Africa	82 935	17 981	22	275 538	68 096	25	225 494	72 158	32	20	34	24
Americas	115 289	48 628	42	117 076	55 437	47	91 280	47 313	52	20	24	20
South-East Asia	787 360	241 664	31	850 751	402 718	47	990 476	656 021	66	9	9	10
Eastern Mediterranean	115 109	34 532	30	117 615	32 550	28	164 824	84 408	51	12	12	9
Western Pacific (Excl. China)	98 656	40 075	41	107 549	51 312	48	122 942	65 379	53	17	12	23
Western Pacific	-	-	-	-	-	-	1 073 159	713 556	66	-	-	24
TOTAL (Excl. China)	1 199 349	382 880	32	1 468 529	610 113	42	1 595 016	925 279	58	78	91	86

Source: For 1980, International Drinking Water Supply and Sanitation Decade; Review of National Baseline Data (as at December 1980), WHO Offset Publication No. 85, WHO, Geneva 1984.

For 1985, International Drinking Water Supply and Sanitation Decade; Review of Mid-Decade Progress (as at December 1985), CWS/87/5.

TABLE A.3.2.4 - GLOBAL 1990
COMPARISON OF COVERAGE AS OF 1980, 1985 AND 1990 - RURAL SANITATION.

Region	1980			1985			1990			Number of reporting countries		
	Population (000)	Coverage (000)	(%)	Population (000)	Coverage (000)	(%)	Population (000)	Coverage (000)	(%)	1980	1985	1990
Africa	74 335	14 787	20	135 945	33 855	25	207 189	45 582	22	18	26	22
Americas	73 268	14 675	20	115 511	30 808	27	89 727	31 890	36	16	20	19
South-East Asia	787 360	49 431	6	850 751	82 105	10	990 470	122 641	12	8	9	10
Eastern Mediterranean	92 412	6 315	7	95 585	8 571	9	131 582	26 642	20	9	10	7
Western Pacific (Excl. China)	98 226	62 221	63	60 404	39 749	66	91 419	43 585	48	17	11	21
Western Pacific	-	-	-	-	-	-	1 041 636	793 585	76	-	-	22
TOTAL (Excl. China)	1 125 601	147 429	13	1 258 196	195 088	16	1 510 387	270 340	18	68	76	79

Source: For 1980, International Drinking Water Supply and Sanitation Decade; Review of National Baseline Data (as at December 1980), WHO Offset Publication No. 85, WHO, Geneva 1984.

For 1985, International Drinking Water Supply and Sanitation Decade; Review of Mid-Decade Progress (as at December 1985), CWS/87/5.

TABLE A.4 1.1 - GLOBAL 1990
PROJECTED NEW POPULATION COVERAGE AND TARGETS FOR SELECTED COUNTRIES (1990) - URBAN WATER SUPPLY.

Region	No. of countries selected ^a	% of total regional urban population ^b	1990 urban population	Urban coverage				Beneficiaries shortfall (%)
				1990 coverage		1990 target		
				Number (000) ^a	(%)	Number (000) ^a	(%)	
Africa	17	55	81 555	64 811	79	71 768	88	9
Americas	20	77	250 565	226 408	90	238 037	95	5
South-East Asia	9	94	329 719	242 260	73	273 667	83	10
Eastern Mediterranean	8	70	120 328	109 963	91	119 125	99	8
Western Pacific	22	59	198 326	189 441	96	184 443	93	-3
TOTAL	76	74	980 493	832 883	85	887 040	90	6

(a) For those countries that provided the necessary data for 1990 coverage and 1990 targets.

(b) Based on the total population of developing countries/territories in the WHO Regions (excluding China).

TABLE A.4.1.2 - GLOBAL 1990
PROJECTED NEW POPULATION COVERAGE AND TARGETS FOR SELECTED COUNTRIES (1990) - URBAN SANITATION.

Region	No. of countries selected ^a	% of total regional urban population ^b	1990 urban population	Urban coverage				Beneficiaries shortfall (%)
				1990 coverage		1990 target		
				Number (000) ^a	(%)	Number (000) ^a	(%)	
Africa	12	51	75 192	50 823	68	51 882	69	1
Americas	13	76	245 525	201 862	82	225 883	92	10
South-East Asia	9	94	329 719	165 602	50	161 562	49	-1
Eastern Mediterranean	8	70	120 328	95 523	79	103 482	86	7
Western Pacific	19	30	100 028	73 696	74	90 025	90	16
TOTAL	61	65	870 792	587 506	67	632 835	73	5

(a) For those countries that provided the necessary data for 1990 coverage and 1990 targets.

(b) Based on the total population of developing countries/territories in the WHO Regions (excluding China).

TABLE A.4.2.1 - GLOBAL 1990

PROJECTED NEW POPULATION COVERAGE AND TARGETS FOR SELECTED COUNTRIES (1990-2000) - RURAL WATER SUPPLY.

Region	No. of countries selected ^a	% of total regional rural population ^b	1990 rural population	Rural coverage				Shortfall in beneficiaries	
				1990 coverage		1990 target		-----	
				Number (000) ^a	(%)	Number (000) ^a	(%)	(%)	(000)
Africa	15	62	211 814	68 809	32	114 380	54	22	45 571
Americas	16	74	91 280	47 313	52	58 419	64	12	11 106
South-East Asia	9	97	990 476	656 021	66	812 190	82	16	156 169
Eastern Mediterranean	6	76	164 824	84 408	51	103 839	63	12	19 431
Western Pacific	15	12	127 116	83 897	66	90 252	71	5	6 356
TOTAL	61	60	1 585 510	940 448	59	1 179 081	74	15	238 633

Values for 1990 targets taken from last available figures; 1988 Decade reporting by countries.

(a) For those countries that provided the necessary data for 1990 coverage and 1990 targets.

(b) Based on the total population of developing countries/territories in the WHO Regions (excluding China).

TABLE A.4.2.2 - GLOBAL 1990

PROJECTED NEW POPULATION COVERAGE AND TARGETS FOR SELECTED COUNTRIES (1990-2000) - RURAL SANITATION.

Region	No. of countries selected ^a	% of total regional rural population ^b	1990 rural population	Rural coverage				Shortfall in beneficiaries		Ratio ^c
				1990 coverage		1990 target		(%)	(000)	
				Number (000) ^a	(%)	Number (000) ^a	(%)			
Africa	14	61	207 189	46 401	22	124 313	60	38	77 912	0.63
Americas	14	72	89 727	31 890	36	36 788	41	5	4 898	0.13
South-East Asia	9	93	990 476	122 641	12	237 714	24	12	115 073	0.48
Eastern Mediterranean	3	60	131 582	26 642	20	40 790	31	11	14 148	0.35
Western Pacific	12	10	103 746	49 798	48	65 360	63	15	15 562	0.24
TOTAL	52	57	1 522 720	277 372	18	504 966	33	15	227 594	0.45

Values for 1990 targets from last available figures; 1988 Decade reporting by countries.

(a) For those countries that provided the necessary data for 1988 and 1990 targets.

(b) Based on the total population of developing countries/territories in the WHO Regions (excluding China).

(c) Ratio of additional people to be served by 1990 to number served in 1988.

TABLE A.5 - GLOBAL 1990
STAFF AND TRAINING

Region	Total staff employed per million population median of national figures - 1990	Ultimate projected staff per million population median of national figures - 2000
Africa	177.0	133.0
Americas	683.0	832.0
South-East Asia	208.0	257.5
Eastern Mediterranean	1 508.5	558.0
Western Pacific	1 019.0	1 032.0

TABLE A.6 - GLOBAL 1990

UNIT COSTS OF CONSTRUCTION (US \$ PER CAPITA) AND OF WATER
MEDIAN VALUES OF NATIONAL AVERAGES

PRODUCTION (US \$/METER CUBED)

Region	Construction						Operation			
	Urban water supply		Urban sanitation		Rural water supply	Rural sani- tation	Average cost of water	Average water tariff	% of countries	
	House connection	Stand- post	Sewer connection	By other means					Where average tariff exceeds average costs	With progressive tariff
Africa	91.0	55.0	120.0	100.0	44.5	22.0	0.45	0.46	42	68
Americas	152.5	68.5	120.0	70.0	80.0	25.0	0.26	0.27	57	40
South-East Asia	111.7	47.7	151.5	36.0	27.7	10.7	0.17	0.23	43	57
Eastern Mediterranean	225.0	135.0	360.0	65.0	90.0	72.9	0.53	0.22	33	78
Western Pacific	225.0	107.0	600.0	155.0	75.5	38.7	0.38	0.15	33	62

TABLE A.7 - GLOBAL 1990

INCREASE IN INVESTMENT RATE NEEDED TO MEET DECADE TARGETS SET BY COUNTRIES

Region	Multiplication factor		
	Minimum	Median	Maximum
Africa	0.47	1.77	5.52
Americas	0.86	1.56	11.16
South-East Asia	1.05	2.48	2.73
Eastern Mediterranean	1.58	3.48	5.37
Western Pacific	0.23	0.86	19.48

TABLE A.8 - GLOBAL 1990
RANKING AND FREQUENCY OF CONSTRAINTS *

Constraints	No. of countries indicating constraint			Ranking index ^b
	Very severe	Severe	Moderate	
Funding limitations	33	32	13	176
Operation and maintenance	21	40	13	156
Inadequate cost-recovery framework	22	32	16	146
Insufficiency of trained personnel (professional)	19	27	23	134
Logistics	17	29	21	130
Insufficiency of trained personnel (sub-professional)	14	29	28	128
Intermittent water service	12	22	25	105
Inadequate or outmoded legal framework	6	23	35	99
Inappropriate institutional framework	8	19	36	98
Insufficient health education efforts	6	23	32	96
Inadequate water resources	10	11	40	92
Insufficient knowledge of water resources	4	16	43	87
Lack of definite government policy for sector	8	8	47	87
Non-involvement of communities	6	14	39	85
Lack of planning and design criteria	1	19	41	82
Inappropriate technology	3	15	40	79
Import restrictions	5	9	36	69

(a) Number of reporting countries = 95

(b) Ranking index = (No. very severe x 3) + (No. severe x 2) + (No. moderate x 1).

TABLE A.9 - GLOBAL 1990
GLOBAL APPROACHES DURING 1990

Region	Number of countries						
	Reporting improved services for the urban poor	Where rural communities participated in improvements to water supply and sanitation facilities is reported			Where primary school children received health education is reported	With programmes being implemented to promote the increased participation of women	With rural programmes implemented as integral components of primary health care
		Planning	Building	Operation			
Africa	5	7	7	8	7	17	14
Americas	4	8	10	9	4	6	4
South-East Asia	2	4	7	7	5	5	6
Eastern Mediterranean	1	2	2	2	3	2	4
Western Pacific	3	13	15	15	14	13	12
TOTAL	15	34	41	41	33	43	40
‡	17	38	46	46	37	48	45

B. REGIONAL REVIEWS

1. AFRICAN REGION

1.1 Socioeconomic and health situation

Of the Region's 45 developing countries, 26 submitted reports on the status of water supply and sanitation services at the end of 1990. They represent 73% of the total regional population.

During the course of the IDWSSD, the regional population overall rose by 36%; the population in the urban areas grew by 79%, while the rural population increased by only 23%.

Health conditions have remained relatively unchanged during the course of the Decade within the Region which continues to suffer the consequences of poor water supply and sanitation despite the considerable progress made in expanding levels of services coverage particularly in the rural areas. Over half of the population in 12 out of 24 reporting countries was without an adequate and safe water supply and in 14 out of 20 (70%), more than half, was without access to appropriate sanitation. Most countries reported life expectancy similar to that at the start of the Decade, i.e. ranging from 42 to 60 years with the medium value of 48. The medium value for infant mortality rate, 123 per 1000 live births, was very similar to that at the start of the Decade, (December 1980), i.e. the corresponding figure was 126.

The economic situation of the Region has remained poor with drought, civil conflict and the depression having seriously affected many countries. The GNP medium value of reporting countries in 1980 was US\$ 275 and the corresponding value in 1990 was US\$ 320.

1.2 Targets and planning

Water supply

Overall during the course of the Decade, an estimated total of 110 million people in Africa was provided with access to an adequate and safe water supply. This raised the overall level of service coverage from 32 to 46%, a remarkable achievement particularly when the population increase (36%) is taken into consideration. However, for national Decade targets to have been attained, an additional 88 million people would have had to have been served; 110 million actually served as opposed to 198 million targeted to be served represents an approximate 44% shortfall in programme delivery.

Progress in the urban areas has been particularly impressive with the level of water supply service coverage having risen during the Decade from an estimated 66% to 79% even if this fell short of the aggregated regional target of 88%. To attain 79% coverage, a total of 62 million was served, while 75 million would have had to be served to attain the Decade target, a shortfall in programme delivery of 17% approximately.

In rural areas the aggregated national target for Africa was 54% coverage, requiring an additional 123 million people to have been served. The estimated actual number of people served amounted to 48 million, i.e. a shortfall in programme delivery of 61%.

Table 1.2.1 Urban water supply service coverage

	1980	1980 (Actual coverage)	1990 (Target)
Urban population estimate (millions)	82.70	147.62	147.62
Estimated % service coverage	66	79	88
Estimated population served or to be served (millions)	54.58	116.60	129.91

Table 1.2.2 Rural water supply service coverage

	1980	1990 (Actual coverage)	1990 (Target)
Rural population estimate (millions)	275.25	339.39	339.39
Estimated % service coverage	22	32	54
Estimated population served or to be served (millions)	60.56	108.60	183.27

Table 1.2.3 Overall (urban/rural) water supply service coverage

	1980	1990 (Actual coverage)	1990 (Target)
Total population estimate (millions)	357.95	487.01	487.01
Estimated population served or to be served (millions)	115.14	225.20	313.18
Estimated % service coverage	32	46	64

Sanitation

Overall during the Decade service coverage rose from 28% to 36% with an additional 75 million people being provided with services. However, achievement fell far short of expectations since during the course of the Decade it had been hoped to expand services to an additional 206 million people and hence raise coverage to 63%. The shortfall in programmes delivery was approximately 64%.

Most of the shortfall was in the rural areas where only around 20 million people were reached compared to the 149 million originally targeted for.

Table 1.2.4 Urban sanitation service coverage

	1980	1990 (Actual coverage)	1990 (Target)
Urban population estimate (millions)	82.70	147.62	147.62
Estimated % service coverage	54	68	69
Estimated population served or to be served (millions)	44.66	100.38	101.86

Table 1.2.5 Rural sanitation service coverage

	1980	1990 (Actual coverage)	1990 (Target)
Rural population estimate (millions)	275.25	339.39	339.39
Estimated service coverage	20	22	60
Estimated population served or to be served (millions)	55.05	74.67	203.63

Table 1.2.6 Overall (urban/rural) sanitation service coverage

	1980	1990 (Actual coverage)	1990 (Target)
Total population (millions)	357.95	487.01	487.01
Estimated population served or to be served	99.71	175.05	305.49
Estimated % service coverage	28	36	63

1.3 Staff and training

Lack of sufficient adequately trained professional personnel at the end of the Decade was considered by reporting countries to be the fifth most serious constraint to sector development, while lack of sub-professional personnel was considered the sixth. At the start of the Decade, reporting countries tended to consider the issue of lack of personnel as more serious, which could indicate that during the Decade some progress was made in alleviating the problem.

Information provided by countries on sector staffing was seldom complete and few conclusions could be reached. However, the total staff in the sector employed per million population ranged from 64 in the case of Ethiopia to 1725 in the case of Mauritius and the Central African Republic.

Of the 20 reporting countries, 15 reported the employment of community-based workers, although the numbers of those employed was in no case indicated.

Of 21 reporting countries, 14 reported the existence of a human resources development plan, while 13 out of 22 countries indicated that a specific budget existed for this purpose. Of these latter, only three felt that the funds allocated were sufficient, Botswana, Nigeria and Senegal.

1.4 Financial resources

Funding limitations has persisted throughout the Decade as the most serious constraint to Decade progress identified by governments in Africa, with inadequate cost recovery being perceived as the third most serious. The importance of cost recovery as a perceived impediment to progress has increased significantly since the start of the Decade, possibly because of the attention directed towards better sector planning and management.

Table 1.4.1 Unit costs of water supply and sanitation facilities (US\$ per capita)

	1980	1985	1990	Average
(a) Urban water supply by house connection	100	106	91 ✓	99
(b) Urban water supply by stand post	46	55	55 ✓	52
(c) Rural water supply	32	40	44.5 ✓	38.8
(d) Urban sanitation by sewer	150	150	120 ✓	140
(e) Urban sanitation by other means	53	116	100 ✓	89.7
(f) Rural sanitation	15	25	24.5 ✓	21.5

Thirteen countries provided information on the annual sector investment during the Decade and on the proportion of this provided from external sources. The median value for the proportion of funds from external sources was 85%, somewhat higher than the values of 75% reported at mid-Decade, 1985. However, the weighted average by population of the proportion of funding coming from external funding for the Region as a whole was calculated to be 74%.

Table 1.4.2 Breakdown of population served 1981-1990 (during the IDWSSD)

	Number served 1980	Number served 1990	Number additionally served
Urban water supply	54.58	116.60	62.02
Urban sanitation	44.66	100.38	55.72
Rural water supply	60.56	108.60	48.04
Rural sanitation	55.05	74.67	19.62

Based on the number of people served and the fact that 65% of the urban population served with water was through a house connection (HC), and 30% of the urban population with access to appropriate sanitation was connected to a public sewer (SC) or had a house connection to a septic tank, the following calculation of investment during the Decade has been calculated.

Table 1.4.3 Estimated water supply and sanitation investment 1981-1990

Sub-sector	Number served (millions)	Unit costs US\$	Total investment US\$ (millions)
Urban water (HC)	40.3	99.0	3989.7
Urban water (SP)	21.7	52.0	1128.4
Urban sanitation (SC)	16.7	140	2338.0
Urban sanitation (OM)	39.0	89.7	3498.3
Rural water	48.0	38.8	1862.4
Rural sanitation	19.6	21.5	421.4
Total			13238.2 ✓

According to current sector investment patterns, of the US\$ 13 238 million invested in new capital construction during the IDWSSD in Africa, around US\$ 9796 came from external sources.

1.5 Decade approaches

Decade approaches refer to programme orientation towards rural and urban poor, support to investment programmes through health education, integration of water supply and sanitation with other elements of primary health care, and the fuller involvement of women in sector planning and management. Information was unfortunately limited, but that provided is contained in Tables 1.5 and 1.9.

Five countries reported programmes being implemented which specifically addressed the needs of the urban low-income/marginal residents.

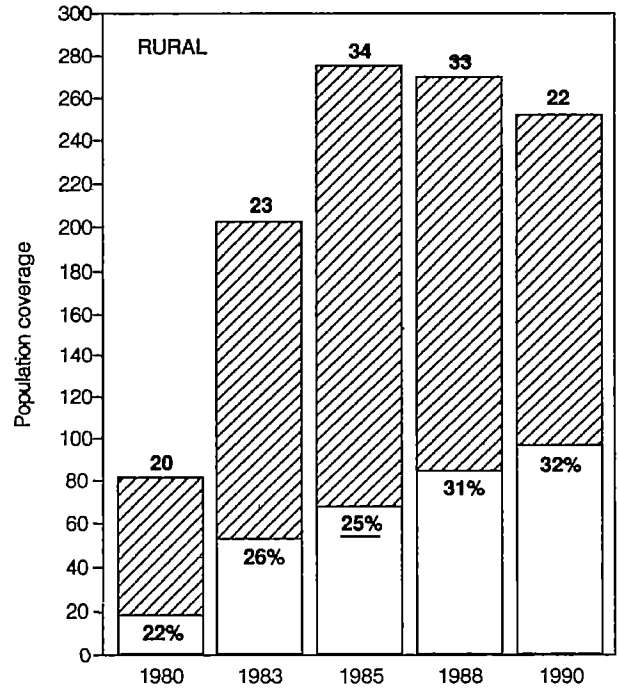
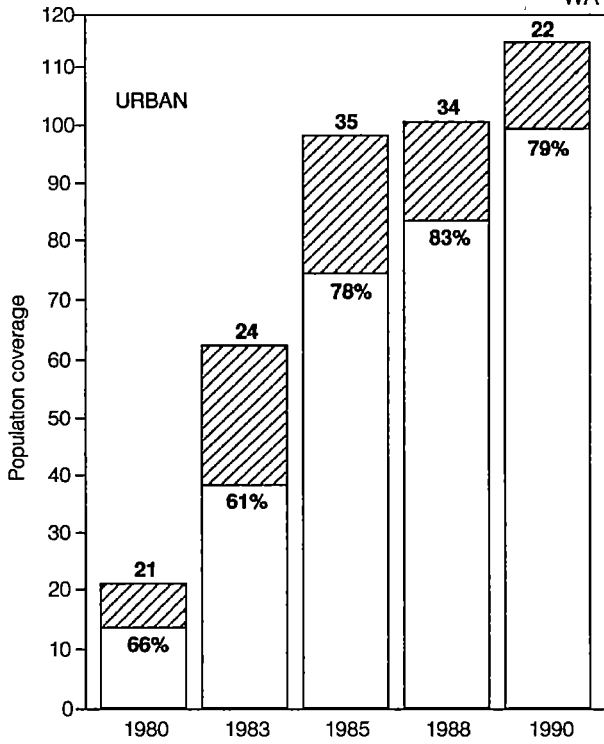
In rural areas seven countries reported between 5% and 100% of the population involved in the planning of projects, and with some responsibility for their construction, while eight countries reported between 5% and 100% with operational responsibilities.

Three countries out of seven reported all primary school children receiving health education within their curriculum while three others reported between 80 and 95% of children receiving such teaching.

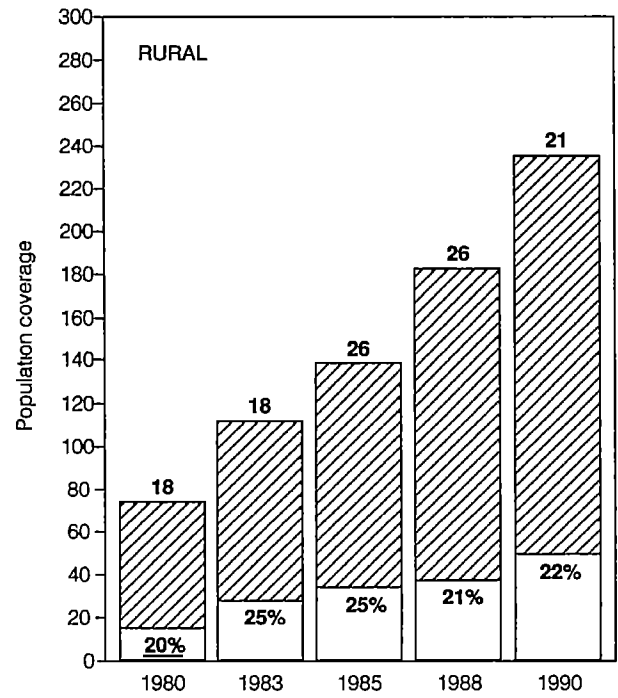
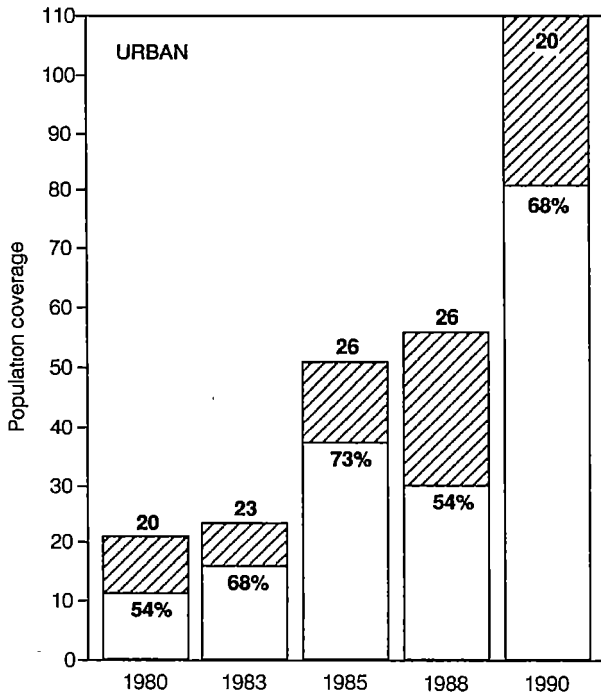
As far as the promotion of women's participation in the decision-making process is concerned, 89% of reporting countries reported positive action in this direction, mainly through special projects or within pilot areas. And, out of 18 reporting countries, 78% reported rural water supply and sanitation programmes being implemented as integral components of a wider primary health care approach.

Fig. 1.1 African Region
Population coverage in 1980, 1983, 1985, 1988 & 1990 ^a

WATER SUPPLY



SANITATION



26 No. of countries reporting
 (Hatched) Total population (x 1 million)
 (White) Population covered (x 1 million)

^a See Tables A.3.2.1 to A.3.2.4

TABLE 1.1 - AFRICAN REGION (1990)
 BASIC INDICATORS: DEMOGRAPHIC, ECONOMIC, HEALTH

Country/territory	Population (000)	Population growth rate (%)	GNP per capita (US \$)	Life expectancy (years)	Infant mortality per 1000 live births	Waterborne diseases cases per 100 000	Population without safe water (%)	Population without sanitation (%)
Angola	10 020	2.7	-	44.5	137	-	60	78
Benin	4 860	3.0	340	49.0	106	60	44	55
Botswana	1 300	3.7	1 050	60.2	37	-	11	13
Burkina Faso	8 713	2.9	350	48.0	134	-	33	-
Burundi	5 356	2.6	216	45.5	750	-	53	81
Cameroon	11 867	2.9	-	53.4	88	8 100	-	-
Central African Republic	2 850	2.8	390	48.0	197	8 000	93	54
Congo	2 343	3.6	-	51.1	123	4 107	-	-
Cote d'Ivoire	12 595	-	-	-	-	-	31	54
Equatorial Guinea	356	2.3	-	48.8	120	-	62	65
Ethiopia	51 400	3.0	114	47.0	144	-	79	-
Gabon	1 365	2.6	3 000	51.2	99	54 000	50	43
Gambia	1 437	5.5	220	44.0	142	245	34	43
Ghana	9 165	2.6	-	47.5	91	-	9	39
Guinea	4 661	2.8	-	44.0	148	-	41	-
Mali	8 474	2.9	255	42.0	175	-	61	76
Mauritius	1 070	1.2	1 100	-	20	-	0	0
Namibia	1 500	3.0	-	-	-	-	63	87
Niger	7 744	3.4	-	47.7	134	-	47	86
Nigeria	123 779	3.3	308	50.5	-	200	0	-
Rwanda	7 590	3.6	320	50.2	119	-	31	77
Senegal	7 757	3.8	650	48.0	191	-	56	53
Sierra Leone	4 078	2.3	150	47.0	150	2 000	61	62
Uganda	16 583	2.5	250	46.1	101	-	67	43
Zaire	35 140	3.1	250	53.0	110	-	61	77
Zimbabwe	9 369	2.8	580	60.0	71	-	16	60

TABLE 1.2 - AFRICAN REGION 1990
 COVERAGE TARGETS (% of population) (2000) AND DECADE PLANS

Country/territory	Urban water supply		Urban sanitation		Rural		Status of Decade plan preparation	Year by which total coverage planned for or reached
	House connection	Stand- post	Sewer connection	By other means	Water supply	Sani- tation		
Angola	30	70	18	22	50	40	Yes	-
Benin	40	4	0	60	43	20	Yes	2020
Botswana	90	10	100	0	95	85	Yes	2007
Burkina Faso	49	51	46	39	65	60	Yes	-
Cameroon	-	-	-	-	-	-	Partial	2000
Central African Republic		60	0	100	50	100	Yes	2000
Congo	100	0	40	60	100	100	Yes	2000
Equatorial Guinea	-	-	-	-	-	-	No	-
Gabon	50	50	2	83	85	50	Yes	2020
Gambia	40	30	20	30	48	10	Yes	2010
Ghana	20	20	10	30	60	60	Partial	2010
Guinea	85	15	-	-	-	-	Yes	2005
Mali	30	50	5	45	43	35	No	2025
Niger	-	-	-	-	-	-	No	-
Nigeria	80	20	2	80	80	80	Yes	2005
Rwanda	-	-	-	-	70	85	Yes	-
Senegal		79	-	-	38	-	Yes	-
Sierra Leone	28	64	5	65	75	50	Yes	2025
Uganda	20	40	20	55	30	60	No	-
Zaire		81	-	-	39	-	Yes	2010
Zimbabwe		95		95	80	22	Yes	2000

TABLE 1.3 - AFRICAN REGION (1990)
1990 LEVELS OF SERVICE
POPULATIONS PROVIDED BY GOVERNMENTS

Country/territory	Population				Drinking water				Sanitation					
	Total (000)		Rural (000)		Urban		By P.S. (000)		Rural		Urban		By other (000)	
	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Angola	10 020	3 707	6 313	2 707	2 030	677	2 030	1 263	927	371	556	1 263	556	1 263
	(37)	(63)	(15)	(73)	(55)	(18)	(55)	(20)	(25)	(10)	(15)	(20)	(15)	(20)
Benin	4 860	1 908	2 952	1 393	630	763	630	1 269	1 145	0	1 145	1 033	1 145	1 033
	(39)	(61)	(33)	(73)	(33)	(40)	(33)	(43)	(60)	(0)	(60)	(35)	(60)	(35)
Botswana	1 286	258	1 028	258	26	232	26	905	258	237	21	874	21	874
	(20)	(80)	(10)	(100)	(10)	(90)	(10)	(88)	(100)	(92)	(8)	(85)	(8)	(85)
Burkina Faso	8 713	1 425	7 288	-	-	770	-	5 102	-	0	-	-	-	-
	(16)	(84)	-	-	-	(54)	-	(70)	-	(0)	-	-	-	-
Burundi	5 356	354	4 972	354	288	85	288	2 138	244	25	219	783	219	783
	(7)	(93)	(7)	(92)	(75)	(17)	(75)	(43)	(64)	(7)	(57)	(16)	(57)	(16)
Cameroon	12 000	4 600	7 400	1 945	-	-	-	3 300	-	-	-	-	-	-
	(38)	(62)	-	(42)	-	-	-	(45)	-	-	-	-	-	-
Central African Republic	2 850	1 900	950	1 80	92	89	92	494	431	0	431	875	431	875
	(33)	(67)	(19)	(19)	(10)	(10)	(9)	(26)	(45)	(0)	(45)	(46)	(45)	(46)
Cote d'Ivoire	12 595	5 870	6 725	3 346	-	-	-	5 380	4 755	1 820	2 935	6 725	2 935	6 725
	(47)	(53)	(57)	(57)	-	-	-	(80)	(81)	(31)	(50)	(100)	(50)	(100)
Equatorial Guinea	356	132	224	86	70	16	70	40	72	38	33	54	33	54
	(37)	(63)	(41)	(65)	(53)	(12)	(53)	(18)	(54)	(29)	(25)	(24)	(25)	(24)
Ethiopia	51 500	46 400	5 100	-	5 198	-	5 198	-	-	-	-	-	-	-
	(90)	(10)	-	-	(11)	-	(11)	-	-	-	-	-	-	-
Gambia	1 437	793	644	793	381	381	381	309	793	238	555	173	555	173
	(55)	(45)	(45)	(100)	(48)	(48)	(48)	(48)	(100)	(30)	(70)	(27)	(70)	(27)
Ghana	15 021	4 958	10 063	3 124	1 388	1 735	1 388	-	3 124	645	2 479	6 038	2 479	6 038
	(33)	(67)	(33)	(67)	(28)	(35)	(28)	-	(63)	(13)	(50)	(60)	(50)	(60)
Guinea	7 279	1 763	5 516	1 763	1 569	194	1 569	2 041	-	-	-	-	-	-
	(24)	(76)	(89)	(100)	(89)	(11)	(89)	(37)	-	-	-	-	-	-
Mali	8 474	1 695	6 779	694	558	136	558	258	1 373	17	1 356	678	1 356	678
	(20)	(80)	(80)	(41)	(33)	(8)	(33)	(4)	(81)	(1)	(80)	(10)	(80)	(10)
Mauritius	1 070	450	620	450	442	8	442	620	450	200	250	620	250	620
	(42)	(58)	(58)	(100)	(98)	(2)	(98)	(100)	(100)	(44)	(56)	(100)	(56)	(100)
Namibia	1 500	290	1 210	262	-	-	-	447	70	-	-	131	-	131
	(19)	(81)	(19)	(90)	-	-	-	(37)	(24)	-	-	(11)	-	(11)
Niger	7 743	1 161	6 582	1 132	-	-	-	2 985	820	19	801	276	801	276
	(15)	(85)	(85)	(98)	-	-	-	(45)	(71)	(2)	(69)	(4)	(69)	(4)
Nigeria	123 779	30 945	92 834	30 945	-	-	-	20 426	24 756	-	-	10 322	-	10 322
	(25)	(75)	(75)	(100)	-	-	-	(22)	(80)	-	-	(11)	-	(11)
Rwanda	7 590	676	6 915	567	216	351	216	4 633	594	0	594	1 175	594	1 175
	(9)	(91)	(91)	(84)	(32)	(68)	(32)	(67)	(88)	(0)	(88)	(17)	(88)	(17)
Senegal	7 757	3 557	4 200	2 312	1 067	1 245	1 067	1 092	2 027	462	1 565	1 596	1 565	1 596
	(46)	(54)	(54)	(65)	(30)	(35)	(30)	(26)	(57)	(13)	(44)	(38)	(44)	(38)
Sierra Leone	4 078	1 301	2 777	1 040	260	780	260	550	710	10	700	850	700	850
	(32)	(68)	(68)	(80)	(20)	(60)	(20)	(55)	(55)	(1)	(54)	(31)	(54)	(31)
Uganda	16 583	1 876	14 707	1 126	375	750	375	4 412	600	375	225	8 824	225	8 824
	(11)	(89)	(89)	(60)	(20)	(32)	(20)	(30)	(32)	(20)	(12)	(60)	(12)	(60)
Zaire	35 140	11 981	23 159	8 150	-	-	-	5 508	5 488	-	-	2 546	-	2 546
	(34)	(66)	(66)	(88)	-	-	-	(24)	(46)	-	-	(11)	-	(11)
Zimbabwe	9 369	2 300	7 069	2 185	1 311	874	1 311	5 639	2 185	1 726	459	1 542	459	1 542
	(25)	(75)	(75)	(95)	(57)	(38)	(57)	(80)	(95)	(75)	(20)	(22)	(20)	(22)
TOTAL	356 356	129 380	226 977	64 811	10 529	14 469	10 529	68 809	50 823	6 183	14 325	46 401	14 325	46 401
	(36)	(64)	(64)	(79)	(37)	(20)	(37)	(32)	(68)	(19)	(45)	(22)	(45)	(22)

TABLE 1.4 - AFRICAN REGION 1990
PRESENT (1990-top line) AND TARGET (2000-bottom line) POPULATION COVERAGE (in thousands)

Country/territory	Urban population	Water supply			Sanitation			Rural population	Safe water	Adequate sanitation
		House connections	Stand- posts	Sewer connections	By other means					
Angola	3 707	677	2 030	371	556	6 313	1 263	1 263		
Benin	6 030	1 809	4 221	1 085	1 327	7 370	3 685	2 948		
Botswana	2 783	1 948	630	0	1 145	2 952	1 269	1 033		
Burundi	330	300	26	237	21	3 411	3 002	1 874		
Central African Republic	950	252	288	25	219	1 305	1 240	1 109		
Equatorial Guinea	1 237	92	89	0	431	6 440	6 440	3 864		
Gambia	284	16	70	38	33	2 256	1 128	875		
Ghana	4 232	1 500	1 200	560	2 100	4 932	2 965	2 965		
Guinea	6 800	1 320	1 320	660	1 980	11 800	7 080	7 080		
Mali	1 206	1 074	131	-	-	3 455	1 263	14		
Mauritius	2 872	862	1 436	172	1 356	6 779	258	678		
Niger	1 161	600	0	19	801	6 582	2 985	276		
Nigeria	30 945	-	-	1 378	55 114	92 834	20 426	10 322		
Rwanda	68 893	216	351	0	594	90 256	72 205	72 205		
Senegal	3 557	1 067	1 245	462	1 565	8 992	6 294	1 175		
Sierra Leone	1 301	260	780	10	700	5 366	2 039	1 596		
Uganda	2 171	608	1 389	109	1 411	2 777	2 550	850		
Zaire	11 981	382	765	382	1 052	14 707	4 412	8 824		
	16 552	8 150*	13 407*	-	5 488*	23 159	5 508	11 603		
						30 133	11 752	2 548		

* No breakdown given

TABLE 1.4A - AFRICAN REGION 1990
 DECADE TARGETS FOR URBAN WATER SUPPLY

Sub-sector	Population 1980 (000)	Population 1990 (000)	1980 Coverage		1990 Coverage		1990 Target	
			(000)	(%)	(000)	(%)	(000)	(%)
Urban water	82 698	147 620	54 581	66	121 048	82	129 906	88
Rural water	275 245	339 389	60 554	22	108 604	32	183 270	54
Urban sanitation	82 698	147 620	44 657	54	106 286	72	101 858	69
Rural sanitation	275 245	339 389	55 049	20	74 666	22	203 633	60

TABLE 1.5 - AFRICAN REGION 1990
STAFF RESOURCES 1990 (top line) AND PROJECTED REQUIREMENTS FOR 2000 (bottom line)

Country/ territory	Planning and management	Craftsmen technical	Artisanal	Admini- stration clerical	Unskilled workers	Total per million population	Increase in community based workers (Yes/No)	HRD master plan (Yes/No)	Established training budget and is it sufficient (Yes/No)
Angola	-	-	-	-	-	-	Yes	No	No
Benin	20	75	125	65	450	151	Yes	No	No
Botswana	25	50	100	25	30	177	Yes	Yes	Yes/Yes
Burkina Faso	40	70	120	30	50	190	No	Yes	No
Burundi	-	-	-	-	-	105	Yes	Yes	Yes/No
Cameroon	-	-	-	-	-	-	Yes	No	Yes/No
Central African Republic	6	90	60	590	1 100	1 725	No	Yes	Yes/-
Equatorial Guinea	-	-	-	-	-	-	Yes	No	No
Ethiopia	49	594	545	710	1 376	64	-	-	Yes/No
Gabon	6	65	53	9	0	97	Yes	Yes	Yes/No
Gambia	12	75	53	12	0	76	-	-	-
Ghana ^a	6	10	150	5	200	443	No	Yes	No
Guinea	22	1 450	-	-	-	-	Yes	Yes	Yes/No
Mali	30	-	-	-	-	-	-	No	No
Mauritius	-	-	-	-	-	-	Yes	No	No
Niger	6	90	60	590	1 100	1 725	No	Yes	Yes/-
Nigeria	-	-	-	-	-	-	Yes	No	No
Rwanda	100	1 000	10 000	1 300	15 000	221	Yes	Yes	Yes/Yes
Senegal	200	2 400	20 000	1 700	30 000	362	-	-	-
Sierra Leone	-	23	46	-	69	-	No	Yes	Yes/No
Uganda	-	-	-	-	-	-	Yes	Yes	Yes/Yes
Zaire	10	100	130	100	270	150	Yes	Yes	No
	25	200	300	150	350	251	-	-	-
	4	900	400	-	-	-	Yes	Yes	Yes/No
	20	2 800	3 000	-	-	-	-	-	-
	252	1 936	0	761	3 331	179	Yes	Yes	Yes/No
	-	-	-	-	-	-	-	-	-

^a Water supply only.

TABLE 1.6 - AFRICAN REGION 1990
UNIT COSTS OF CONSTRUCTION (US\$ PER CAPITA) AND OF WATER PRODUCTION (US\$/m3)

Country/territory	Construction				Operation				
	Urban water supply		Urban sanitation		Rural water supply	Rural sanitation	Average cost of water production	Average water tariff	Progressive water tariff
	House connections	Stand-posts	Sewer connections	By other means					
Angola	120	50	120	30	30	10	0.45	0.50	No
Benin	130	25	-	-	-	-	0.55	0.50	Some Areas
Botswana	91	55	255	196	130	52	0.75	0.54	Yes
Burkina Faso	-	-	-	-	-	-	-	-	Yes
Burundi	-	-	-	-	-	-	-	-	Yes
Cameroon	-	-	-	-	-	-	-	-	Yes
Central African Republic	320	150	-	550	150	35	0.60	0.90	No
Ethiopia	-	-	44	116	24	-	0.48	0.48	No
Gabon	-	-	-	-	-	-	-	-	Some Areas
Ghana	-	-	-	-	-	-	-	-	Some Areas
Guinea	-	-	-	-	-	-	0.00	0.00	No
Mali	40	59	1 042	80	59	14	0.57	0.29	Some Areas
Mauritius	75	-	300	180	80	40	0.35	0.25	Yes
Niger	-	-	-	-	-	-	0.45	0.74	Yes
Nigeria	22	11	-	16	5	11	0.02	0.01	No
Senegal	-	-	-	-	-	-	-	-	Yes
Sierra Leone	100	55	100	100	30	30	-	-	No
Uganda	500	300	500	400	60	50	-	-	-
Zaire	91	-	92	16	15	12	0.40	0.43	Yes
Zimbabwe	74	27	105	37	-	10	0.16	0.17	Yes

TABLE 1.7 - AFRICAN REGION 1990
INVESTMENT ESTIMATES 1981-1990

Country/territory	Estimated cost to reach country decade targets US\$ millions	Annual sector investment				Investment acceleration needed (fold)
		Total US\$ millions	Percentage of total development investment	External		
				US\$ millions	(%)	
Angola	443.9	8.0	-	1.5	18.0	5.52
Benin ^c	104.0	12.1	-	11.3	93.4	0.86
Botswana	-	0.1	-	-	-	-
Burundi ^d	-	2.4	-	2.0	85.0	-
Cameroon ^b	-	80.4	-	-	-	-
Central African Republic	-	71.8	-	70.2	97.8	-
Congo	53.7	-	-	-	-	-
Ethiopia	-	30.4	1.5	20.4	67.1	-
Gabon	119.0	25.5	-	0.0	0.0	0.47
Gambia ^a	-	3.5	-	3.5	100.0	-
Guinea ^d	109.0	4.7	-	4.5	95.7	2.33
Mali	35.2	0.8	-	0.8	96.8	4.45
Mauritius	-	10.0	-	7.5	75.0	-
Niger	-	44.9	-	-	-	-
Sierra Leone	-	3.3	-	1.0	30.3	-
Zaire	762.5	63.4	-	57.3	90.3	1.20
Zimbabwe ^d	-	21.4	-	16.2	75.6	-

^a Rural water supply only.

^b Excluding rural sanitation.

^c Excluding urban sanitation.

^d Rural water supply only.

TABLE 1.8 - AFRICAN REGION 1990
RANKING AND FREQUENCY OF CONSTRAINTS ^a

Constraints	No. of countries indicating constraint			Index ^b
	Very severe	Severe	Ranking moderate	
Funding limitations	11	7	5	52
Logistics	11	7	2	49
Inadequate cost-recovery framework	8	10	2	46
Operation and maintenance	6	12	4	46
Insufficiency of trained personnel (professional)	5	10	6	41
Insufficiency of trained personnel (sub-professional)	4	7	10	36
Insufficient health education efforts	2	10	8	34
Inadequate or outmoded legal framework	4	7	6	32
Intermittent water service	5	5	5	30
Non-involvement of communities	1	7	12	29
Inappropriate institutional framework	3	4	11	28
Insufficient knowledge of water resources	3	4	10	27
Lack of definite government policy for sector	4	-	14	26
Inappropriate technology	2	4	12	26
Lack of planning and design criteria	1	5	12	25
Import restrictions	2	2	11	21
Inadequate water resources	2	-	12	18
Insufficient quality control mechanisms. (Uganda)	1	-	-	3
Political/Military instability. (Angola)	1	-	-	3
Lack of inter-ministerial coordination. (Zaire)	-	1	-	2

^a Number of reporting countries 26

^b Ranking index = 3 x (No. very severe) + 2 x (No. severe) + (No. moderate)

TABLE 1.9 - AFRICAN REGION 1990
DECADE APPROACHES DURING 1981-1990

Country/territory	Improved services for the urban poor			Percent of rural communities participating in improvements			Primary school children receiving health education (%)	Promotion of women's participation (Yes/No)	Water supply and sanitation in rural areas as part of PHC (Yes/No)
	Total urban poor population (00Q)	Population affected by improvements (%)	Urban water development fund used (%)	Planning (%)	Building (%)	Operation (%)			
Angola	-	-	-	-	-	-	-	Yes ^g	Yes ^h
Benin	1 310	10	5	0	0	95	100	No	No
Botswana	10	5	88	5	10	10	95	Yes ^o	Yes
Burkina Faso	-	-	-	-	-	-	-	Yes	Yes
Burundi	-	-	-	-	-	-	-	Yes	Yes
Cameroon	-	-	-	-	-	-	-	Yes ^d	-
Central African Republic	1 740	15	18	60	50	50	30	Yes ^w	No
Equatorial Guinea	-	-	-	-	16	-	-	Yes ^e	Yes ^f
Ethiopia	-	-	-	-	-	-	-	Yes	Yes
Gabon	-	-	-	0	0	0	100	No	No
Ghana	3 500	85	60	100	55	70	-	Yes ^k	Yes ^l
Gambia	-	-	-	-	-	-	-	Yes ^c	No
Guinea	-	-	-	90	100	100	-	Yes ^t	-
Mali	-	-	-	-	-	-	-	Yes ^r	Yes ^u
Nigeria	248	-	-	5	5	5	80	Yes ⁱ	Yes ^j
Rwanda	-	-	-	0	-	-	-	Yes	Yes
Sierra Leone	260	10	20	60	50	50	90	Yes ^m	Yes ⁿ
Uganda	-	-	-	-	-	-	-	-	Yes ^q
Zaire	-	-	-	50	-	70	100	Yes ^a	Yes ^b
Zimbabwe	-	-	-	-	-	-	-	Yes ^v	Yes ^v

- (a) Les femmes sont systematiquement membres de Comite de Developpement des Villages.
- (b) La participation des autres dans le programme de l'eau et de l'assainissement est evedente. Cependant, l'integration est totale dans certaines zones de dante comme elle est absente dans d'autres.
- (c) Presently, training modules targeting women are being developed.
- (d) Programme "eau et assainissement (assistance UNICEF).
- (e) La creation d'ecoles de formation pour les adultes. L'inclusion des femmes dans les comites de sante et du developpement par district ainsi que leur responsabilite fans ce secteur.
- (f) La composition d'une equipe de SSP dans chaque district, l'integration des agents d'assainissement dans l'equipe et la colaboration avec les divers projets appuyant le secteur.
- (g) Des projets integres d'approv. in eau et d'assainissement dans les provinces de Malanje, Bengo, Namibe, Huila et Benguela.
- (h) En partie.
- (i) The Rusapiba project, where women maintain handpump.
- (j) Better life programmes and the Rusafiva project and involvement of women in primary health care programmes.
- (k) Present trend is to increase the level of community participation in general. Recent dynamic development if women's organizations for development indicates great future involvement of women.
- (l) Especially in guinea worm affected places, provision of water supply goes hand in hand with primary health education on prevention of the disease.
- (m) Women in development workshops on specific activities and traditional practices women cooperatives.
- (n) Participation in national development committees. Activities of women in development.
- (o) Women are currently being involved in planning.
- (q) Integrated training of extension staff in all fields of community development.
- (r) On exige la presence d'qu moins deux femmes dans les comites de gestion des points d'eau.
- (s) Dans le programme de developpement sanitaire axe sur les soins de sante primaire l'hydraulique villageoise accupe un volet assez important.
- (t) Insertion des femmes au sein du collectif au comite des points d'ear.
- (u) Women in all water point committees, women trained and/or employed as pump caretakers, pump minders, well supervisors, latrine builders. Have established NAC working group on gender participation.
- (v) Primarily with Health Education but also some links with nutrition through small gardens, etc.
- (w) Mise en place des comites de gestion d'eau geres par des femmes. (80%)

2. AMERICAN REGION

2.1 Socioeconomic and health situation

Of the Region's 32 Member States, excluding Canada and the United States, 22 submitted reports on the status of water supply and sanitation at the end of the IDWSSD. They represented 85% of the regional population. The information related to socioeconomic and health conditions in the Region is presented in Table 2.1.

Health conditions have remained much as at the start of the Decade, with unsatisfactory water supply and sanitation contributing to the poor health existing in many of the countries of the Region. A particular manifestation of this is the cholera epidemic which broke out in the Region in January 1991. Over half the population in three countries out of 18 reporting countries was without access to an adequate and safe water supply, while another seven countries reported more than 25% of their population without access to such services.

As in the past years, all countries reported a life expectancy of over 50 years, and only two countries in fact reported it to be less than 60 years. Infant mortality was less than 100 per 1000 live births in all but two reporting countries (Bolivia and Haiti were the exceptions) and was 20 or less in four. The median value for infant mortality, excluding Bolivia and Haiti, was 40 per 1000 live births, a similar value to that reported in 1985 and 1988. Three countries out of 12 reported over 5% of their populations affected by waterborne diseases, almost the same as at the start of the Decade. Reported per capita gross national product ranged from US\$ 122 in the case of Guyana to US\$ 9496 in the case of the Bahamas with a median value of US\$ 1241, very similar to the value of US\$ 1143 at the mid-Decade 1985.

2.2 Targets and planning

Water Supply

Overall, (urban/rural) water supply service coverage increased from 66% to 79% during the course of the Decade through the expansion of services to an additional 119 million people. To have attained the Decade goal of 86% service coverage for the Region, a further 31 million people would have had to have been served. This represents a 21% shortfall overall in programme delivery.

In the urban areas during the course of the Decade an additional 107 million people were served. Since this represents 90% of all of those served with water during the Decade, it is clear that most of the effort and the highest priority were accorded to the urban subsector. If the Decade target for the urban water supply subsector was to have been achieved, a total of 123 million people would have had to receive access to an adequate and safe water supply, instead of the 107 million actually reached, the shortfall in programme delivery being 13%.

The rural water supply service coverage rose from 42% to 52% during the Decade. In the face of an almost static rural population, this only corresponds to services having been extended to an additional 12 million people. The regional Decade target for rural water supply was to have attained a coverage level of 64%. To have done this, 27 million rather than 12 million people would have had to have been served, the programme's shortfall being 56%.

Table 2.2.1 Urban water supply service coverage

	1980 Coverage	1990 (Actual coverage)	1990 (Target)
Urban population estimate (millions)	236.72	324.08	324.08
Estimated % service coverage	78	90	95
Estimated population served or to be served (millions)	184.64	291.67	307.88

Table 2.2.2 Rural water supply service coverage

	1980 Coverage	1990 (Actual coverage)	1990 (Target)
Rural population estimate (millions)	124.91	123.87	123.87
Estimated % service coverage	42	52	64
Estimated population served or to be served (millions)	52.46	64.41	79.28

Table 2.2.3 Overall (urban/rural) water supply service coverage

	1980 Coverage	1990 (Actual coverage)	1990 (Target)
Total population estimate (millions)	361.63	447.95	447.95
Estimated population served or to be served (millions)	237.10	356.08	387.16
Estimated % service coverage	66	79	86

Sanitation

Overall during the Decade, sanitation service coverage rose from 44% to 69% through the provision of services to an additional 153 million people. Despite these efforts the aggregated regional target of 78% coverage was not attained. In fact to have done this, a total of 191 million people would have had to have been served. This represents a 20% shortfall in programme delivery.

Table 2.2.4 Urban sanitation service coverage

	1980 Coverage	1990 (Actual coverage)	1990 (Target)
Urban population estimate (millions)	236.72	324.08	324.08
Estimated % service coverage	56	82	92
Estimated population served or to be served (millions)	132.56	265.75	298.15

Table 2.2.5 Rural sanitation service coverage

	1980 Coverage	1990 (Actual coverage)	1990 (Target)
Rural population estimate (millions)	124.91	123.87	123.87
Estimated service coverage	20	36	41
Estimated population served or to be served (millions)	24.98	44.59	50.79

Table 2.2.6 Overall (urban/rural) sanitation service coverage

	1980 Coverage	1990 (Actual coverage)	1990 (Target)
Total population (millions)	361.63	447.95	447.95
Estimated population served or to be served	157.54	310.34	348.94
Estimated % service coverage	44	69	78

Progress during the Decade in expanding urban sanitation has been encouraging, with coverage having been increased from 56% in 1980 to 82% at the end of 1990. This represents a total of 133 million additional people served. To have attained the aspired-for coverage level of 92%, a total of 166 million would have had to be served, representing a programme delivery shortfall of 20%.

Achievement in expanding sanitation services in rural areas was also encouraging, with coverage having risen from 20% to 36% in ten years through services having been expanded to 20 million people. This is 6 million short of the number required to have been served if the regional target of 41% coverage was to have been achieved. The shortfall in rural sanitation programme delivery is 23%.

Table 2.2.7 Programme delivery shortfalls - Americas

	% Shortfall
Urban water supply	13
Rural water supply	56
Urban sanitation	20
Rural sanitation	23

2.3 Staff and training

The importance of insufficient trained professional and sub-professional staff has slipped in importance as a perceived constraint to the implementation of sector programmes since the start of the IDWSSD. At the start of the Decade, lack of professional personnel was rated as the fifth in importance out of a list of 17 constraints, and lack of sub-professional personnel was rated fourth. At the end of the Decade, the corresponding ratings were 11 and seven, respectively (Table 2.8).

Staffing levels varied from 26 per million people served in Peru to 3917 in the British Virgin Islands. This wide variation clearly is the result of a diversity of systems, approaches and conditions. The median value was 818, which is higher than the value of 645 recorded in 1983. Nine countries projected staff levels up to the year 2000, but in only three were significant increases in personnel needs foreseen.

Of 20 reporting countries, 16 indicated that a budgetary provision had been set aside for staff training; however, of these 16 countries only three considered that the amount allocated was sufficient. 50% of reporting countries indicated that they had established a plan for human resources development for the sector, while 75% indicated that community-based workers were used in the delivery of services to rural communities.

2.4 Financial resources

Funding limitations have remained the single most serious constraint to Decade programme implementation cited by governments, closely followed by lack of adequate cost-recovery mechanisms.

Table 2.4.1 Unit costs of water supply and sanitation facilities (US\$ per capita)

	1980	1985	1990	Average
(a) Urban water supply by house connection	125	160	152.5	145.8
(b) Urban water supply by stand post	88	83	68.5	79.8
(c) Rural water supply	62	81	80	74.3
(d) Urban sanitation by sewer	165	150	120	145
(e) Urban sanitation by other means	62	80	70	70.7
(f) Rural sanitation	18	25	25	22.7

Fifteen countries provided information on the annual rate of sector investment during the Decade and on the proportion of this coming from external sources. The median value for the projection of funds from external sources was 36.6%, which compares well with the mid-Decade estimate of 33.5%.

Table 2.4.2 Breakdown of population served 1981-1990 (during the IDWSSD)

	Number served 1980	Number served 1990	Number additionally served
Urban water supply	184.64	291.67	107.03
Urban sanitation	132.56	265.75	133.19
Rural water supply	52.46	64.41	11.95
Rural sanitation	24.98	44.59	19.61

Of those served with water supply in urban areas, an estimated 88% will be through house connections (HC) and 12% will be by stand post (SP), and of those to be provided with sanitation 60% will be by sewer connection (SC) and 40% by other means (OM).

Table 2.4.3 Estimated water supply and sanitation investment 1981-1990

Sub-sector	Number served (millions)	Unit costs US\$	Total investment US\$ (millions)
Urban water (HC)	94.2	145.8	13734.4
Urban water (SP)	12.8	79.8	1021.4
Urban sanitation (SC)	79.9	145.0	11585.5
Urban sanitation (OM)	53.3	70.7	3768.3
Rural water	12.0	74.3	891.6
Rural sanitation	19.6	22.7	444.9
Total			31446.1

According to current sector investment patterns, of the US\$ 31 446 million invested in new capital construction during the IDWSSD in Latin America and the Caribbean, approximately US\$ 15 717 million came from external sources. Weighted average of proportion of funding from external sources is 49.98%.

2.5 Decade approaches

The orientation of national water supply and sanitation programmes towards alleviating the plight of the urban poor, and towards health education, community participation, and women's involvement is reflected in the information contained in Tables 2.5 and 2.9.

Four countries reported programmes specifically designed to address the problem of the urban poor/peri-urban residents; however, of these only one, Honduras, indicated that these efforts affected a significant proportion of such disadvantaged people.

Community-based workers were reported by 15 out of 20 countries as being used to support developments in rural areas. Two out of 10 reporting countries indicated 100% involvement of rural communities in the planning of projects, while the same number reported absolutely no such involvement taking place. Another six countries reported between 10% and 80% community involvement in project planning.

On the other hand, four countries reported the full involvement of the communities in project construction, while two reported absolutely no such involvement, and six countries reported such involvement ranging from 10% to 80%.

Only one country, Trinidad and Tobago, reported that all primary school children had health education materials related to water supply, sanitation and personal hygiene included in their curriculum.

Only 50% of countries reported the implementation of programmes specifically intended to promote the participation of women, and only 36% reported water supply and sanitation programmes in rural areas implemented as components of primary health care.

Fig. 2.1. American Region
Population coverage in 1980, 1983, 1985, 1988 & 1990 ^a

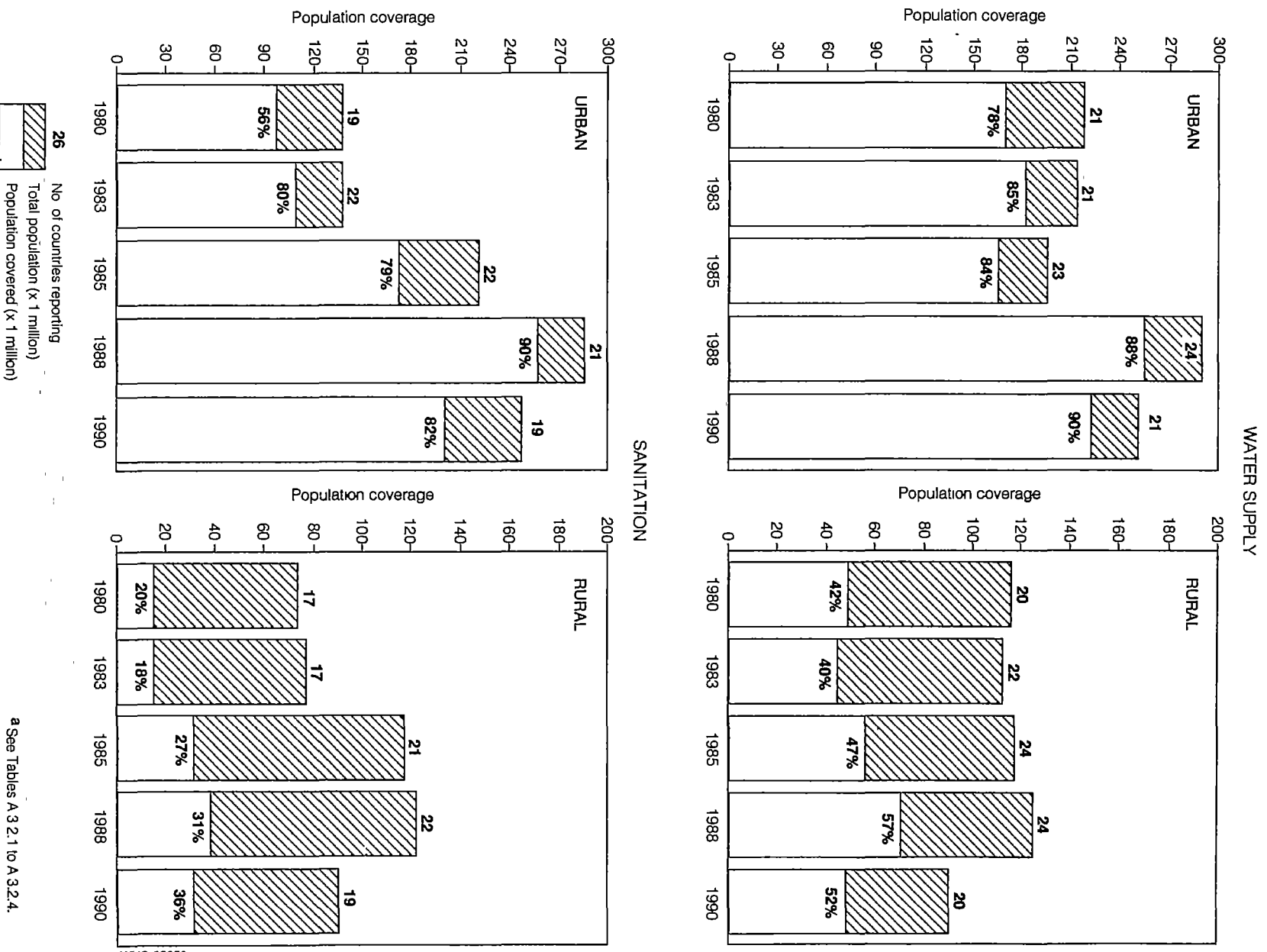


TABLE 2.1 - AMERICAN REGION 1990
 BASIC INDICATORS - DEMOGRAPHIC, ECONOMIC, HEALTH

Country/territory	Population (000)	Population growth rate (%)	GNP per capita (US\$)	Life expectancy (years)	Infant mortality per 1000 live births	Waterborne diseases cases per 100 000	Population without safe water (%)	Population without sanitation (%)
Bahamas	254	1.2	9 496	68.0	21	-	6	19
Barbados	257	0.6	-	69.8	18	4	0	0
Belize	184	3.1	1 250	68.5	19	33	27	53
Bolivia	7 322	2.8	570	53.1	102	36	47	73
Brazil	150 368	2.0	1 964	65.0	61	-	13	29
British Virgin Islands	14	2.2	8 973	71.4	38	-	0	0
Colombia	32 977	2.5	-	64.8	33	1 717	15	36
Cuba	10 603	1.1	-	75.7	11	10 155	2	8
Dominican Republic	7 169	2.2	680	66.3	63	-	33	13
Ecuador	10 782	2.8	1 241	65.7	45	61	45	52
El Salvador	5 252	1.9	-	63.5	55	2 821	53	41
Guatemala	9 197	2.9	330	62.0	59	144	39	41
Guyana	755	-0.01	122	65.0	49	-	21	14
Haiti	5 835	1.8	300	54.2	180	60 000	59	75
Honduras	4 880	3.7	-	63.6	63	582	36	38
Mexico	81 907	2.3	2 500	69.1	38	37	-	-
Nicaragua	3 935	-	-	-	-	-	46	-
Paraguay	4 277	-	900	67	42	-	68	53
Peru	22 332	2.5	184	63.4	81	-	-	-
Trinidad & Tobago	1 234	1.7	3 815	-	10	-	4	2
Uruguay	3 034	0.7	2 736	71.4	-	-	-	-
Venezuela	19 735	-	-	-	22	27 599	-	-

TABLE 2.2 - AMERICAN REGION 1990
 COVERAGE TARGETS (% of population) (2000) AND SECTOR PLANS

Country/territory	Urban water supply		Urban sanitation		Rural		Status of Decade plan preparation	Year by which total coverage planned for or reached
	House connection	Stand- post	Sewer connection	By other means	Water supply	Sani- tation		
Bahamas		100*	-	-	100	-	Yes/1990	-
Barbados	100	0	12	88	100	100	Yes/1990	1990
Belize	95	5	10	20	90	90	Yes	2005
Bolivia	-	-	-	-	-	-	Yes	-
Brazil	90	9	50	45	65	40	Yes	-
British Virgin Islands	100	0	75	25	100	100	Yes/1988	1990
Colombia	90	5	74	22	95	80	Partial	2015
Cuba	90	10	50	50	100	100	Yes/1991	2000
Ecuador	85	5	70	15	80	80	No	2005
El Salvador	87	5	60	30	45	60	Yes	2020
Guatemala	85	15	75	25	73	78	Yes	-
Guyana	91	9	44	55	95	86	Yes	2040
Haiti	60	30	20	60	70	50	No	2050
Mexico	-	-	-	-	-	-	Yes/1991	-
Paraguay	-	-	-	-	-	-	Yes	-
Trinidad & Tobago	98	2	54	44	94	95	Being prepared (1992)	2010

* No breakdown given.

TABLE 2.3 - AMERICAN REGION 1990
1990 LEVELS OF SERVICE
POPULATIONS PROVIDED BY GOVERNMENTS

Country/territory	Population with service										
	Population			Drinking water				Sanitation			
	Total	Urban	Rural	Total	Urban		Rural	Total	Urban		Rural
	(000)	(000)	(000)	(000)	By H.C.	By P.S.	(000)	(000)	By S.C.	By other	(000)
(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	
Bahamas	254	210	44	206	-	-	33	206	38	168	1
		(83)	(17)	(98)	-	-	(75)	(98)	(18)	(80)	(2)
Barbados	257	90	167	90	88	2	167	90	4	86	167
		(35)	(65)	(100)	(98)	(2)	(100)	(100)	(4)	(96)	(100)
Belize	184	87	97	83	80	3	51	66	40	26	21
		(47)	(53)	(95)	(92)	(3)	(53)	(76)	(46)	(30)	(22)
Bolivia	7 322	3 763	3 559	2 859	-	-	1 054	1 438	-	-	516
		(51)	(49)	(76)	-	-	(30)	(38)	-	-	(14)
Brazil	150 368	114 280	36 088	108 200	97 200	11 000	22 150	95 700	45 700	50 000	11 600
		(76)	(24)	(95)	(85)	(10)	(61)	(84)	(40)	(44)	(32)
British Virgin Islands	14	6	8	6	5	1	8	6	1	5	8
		(43)	(57)	(100)	(83)	(17)	(100)	(100)	(17)	(83)	(100)
Colombia	32 977	23 084	9 893	20 035	15 235	4 800	8 090	19 392	11 772	7 620	1 800
		(70)	(30)	(87)	(66)	(21)	(82)	(84)	(51)	(33)	(18)
Cuba	10 603	7 793	2 810	7 793	6 468	1 325	2 571	7 793	3 047	4 746	1 916
		(73)	(27)	(100)	(83)	(17)	(91)	(100)	(39)	(61)	(68)
Dominican Republic	7 169	4 354	2 815	3 569	2 002	1 567	1 266	4 135	1 741	2 394	2 111
		(61)	(39)	(82)	(46)	(36)	(45)	(95)	(40)	(55)	(75)
Ecuador	10 782	5 977	4 805	3 783	3 584	199	2 097	3 368	2 619	749	1 849
		(55)	(45)	(63)	(60)	(3)	(44)	(56)	(44)	(13)	(38)
El Salvador	5 252	2 311	2 941	2 011	1 895	116	439	1 964	1 317	647	1 121
		(44)	(56)	(87)	(82)	(5)	(15)	(85)	(57)	(28)	(38)
Guatemala	9 197	3 501	5 696	3 214	2 741	473	2 425	2 524	2 108	416	2 939
		(38)	(62)	(92)	(78)	(14)	(43)	(72)	(60)	(12)	(52)
Guyana	755	215	540	215	196	19	382	209	70	139	439
		(28)	(72)	(100)	(91)	(9)	(71)	(97)	(33)	(65)	(81)
Haiti	5 835	1 661	4 174	930	266	664	1 461	731	0	731	710
		(28)	(72)	(56)	(16)	(40)	(35)	(44)	(0)	(44)	(17)
Honduras	4 880	2 108	2 772	1 796	1 691	105	1 343	1 878	1 143	735	1 163
		(43)	(57)	(85)	(80)	(5)	(48)	(89)	(54)	(35)	(42)
Mexico	81 907	58 400	23 507	55 045	51 689	3 356	-	49 564	40 728	8 836	-
		(71)	(29)	(94)	(89)	(6)	-	(85)	(70)	(15)	-
Nicaragua	3 935	2 382	1 553	1 816	1 534	282	322	-	710	-	-
		(61)	(39)	(76)	(64)	(12)	(21)	-	(30)	-	-
Paraguay	4 277	1 954	2 322	1 185	-	-	199	600	-	-	1 400
		(46)	(54)	(61)	-	-	(9)	(31)	-	-	(60)
Peru	22 332	14 866	7 466	10 050	8 369	1 681	1 778	11 334	10 050	1 284	1 500
		(67)	(33)	(68)	(56)	(11)	(24)	(76)	(68)	(9)	(20)
Trinidad & Tobago	1 234	864	370	864	777	87	325	864	284	580	340
		(70)	(30)	(100)	(90)	(10)	(88)	(100)	(33)	(67)	(92)
Uruguay	3 034	2 659	375	2 659	2 530	129	-	-	376	-	-
		(88)	(12)	(100)	(95)	(5)	-	-	(14)	-	-
Venezuela	19 735	16 576	3 159	-	-	-	1 152	-	-	-	2 289
		(84)	(16)	-	-	-	(36)	-	-	-	(72)
TOTAL	382 303	267 141	115 162	226 408	196 350	25 808	47 313	201 862	121 747	79 163	31 890
		(70)	(30)	(90)	(80)	(11)	(52)	(82)	(50)	(33)	(36)

TABLE 2.4 - AMERICAN REGION 1990
PRESENT (1990-top line) AND PROJECTED (2000-bottom line) POPULATION COVERAGE (in thousands)

Country/territory	Urban Population	Water supply		Sanitation		Rural Population	Safe water	Adequate sanitation
		House connections	Stand- posts	Sewer connections	By other means			
Bahamas	210		206*	38	168	44	33	1
	248		248*	-	-	52	52	-
Barbados	90	88	2	4	86	167	167	167
	88	88	0	12	75	171	171	171
Belize	87	80	3	40	26	97	51	21
	120	114	6	12	24	130	117	117
Bolivia	3 763		2 859*		1 438*	3 559	1 054	516
	4 927		3 341*		2 188*	4 000	1 324	1 284
Brazil	114 280	97 200	11 000	45 700	50 000	36 088	22 150	11 600
	143 200	128 880	12 888	71 600	64 440	35 800	23 270	14 320
British Virgin Islands	6	5	1	1	5	8	8	8
	6	6	0	5	1	11	11	11
Columbia	23 084	15 235	4 800	11 772	7 620	9 893	8 090	1 800
	27 578	24 820	1 379	20 408	6 067	11 819	11 228	9 455
Cuba	7 793	6 468	1 325	3 047	4 746	2 810	2 571	1 916
	8 200	7 380	820	4 100	4 100	3 300	3 300	3 300
Ecuador	5 977	3 584	199	2 619	749	4 805	2 097	1 849
	7 629	6 485	381	5 340	1 144	4 615	3 692	3 692
El Salvador	2 311	1 895	116	1 317	647	2 941	439	1 121
	3 167	2 755	158	1 900	950	3 572	1 607	2 143
Guatemala	3 501	2 741	473	2 108	416	5 696	2 425	2 939
	4 669	3 969	700	3 502	1 167	7 553	5 514	5 876
Guyana	215	196	19	70	139	540	382	439
	215	196	19	95	118	540	513	465
Haiti	1 661	266	664	0	731	4 174	1 461	710
	2 539	1 523	762	508	1 523	4 611	3 228	2 306
Peru (i) 1995	14 866	8 369	1 681	10 050	1 284	7 466	1 778	1 500
	17 393	10 958	4 313	10 958	4 313	7 730	5 442	5 442
Trinidad & Tobago	864	777	87	284	580	370	325	340
	1 101	1 079	22	595	484	367	345	349

* No breakdown given

TABLE 2.4A - AMERICAN REGION 1990
 COVERAGE AND DECADE TARGETS FOR URBAN WATER SUPPLY

Sub-sector	Population 1980 (000)	Population 1990 (000)	1980 Coverage		1990 Coverage		1990 Target	
			(000)	(%)	(000)	(%)	(000)	(%)
Urban water	236 721	324 079	156 236	66	291 671	90	307 875	95
Rural water	124 907	123 869	27 480	22	64 412	52	79 276	64
Urban sanitation	236 721	324 079	132 564	56	265 745	82	298 153	92
Rural sanitation	124 907	123 869	24 981	20	44 593	36	50 786	41

TABLE 2.5 - AMERICAN REGION 1990
STAFF RESOURCES 1990 (top line) AND PROJECTED REQUIREMENTS FOR 2000 (bottom line)

Country/territory	Planning and management	Technical	Craftsmen artisanal	Administration clerical	Unskilled workers	Total per million population	Community based workers (Yes/No)	HRD master plan (Yes/No)	Established training budget and is it sufficient (Yes/No)
Bahamas	64	82	100	102	101	1 768	No	Yes	Yes/No
Barbados	4	131	316	94	305	3 319	No	No	Yes/Yes
Belize	3	57	24	35	110	1 266	Yes	No	No
Bolivia	13	70	35	47	140	1 220			
	304	729	897	1 477	546	540	Yes	Yes	No
Brazil	6 947	45 419	29 950	15 963	27 587	837	No	Yes	Yes/No
	8 200	53 700	35 500	18 900	32 700	832			
British Virgin Islands	5	4	10	5	23	3 917	Yes	No	Yes/Yes
	7	8	15	8	30	4 857			
Colombia	-	-	-	-	-	-	Yes	Yes	Yes/No
	2 738	5 476	5 476	2 738	2 738	486			
Cuba	500	1 100	4 800	1 600	6 000	1 320	Yes	Yes	Yes/No
Dominican Republic	-	-	-	-	-	-	Yes	Yes	No
Ecuador	46	605	32	724	264	155	Yes	Yes	Yes/No
	71	936	74	2 015	323	279			
El Salvador	-	-	-	-	-	-	Yes	No	Yes/No
Guatemala	-	-	-	-	-	-	Yes	No	No
Guyana	43	354	30	128	49	800	Yes	No	Yes/No
Haiti	38	449	155	211	842	290	Yes	Yes	Yes/Yes
	50	539	194	254	1 095	298			
Honduras	53	202	116	685	290	276	-	-	-
	48	162	100	548	232	159			
Mexico	-	-	-	-	-	-	No	No	Yes/No
Nicaragua	-	-	-	-	-	-	Yes	Yes	Yes/No
Paraguay	64	515	390	600	850	566	Yes	Yes	Yes/No
	80	600	500	650	1 000	511			
Peru	137	81	-	76	294	26	Yes	No	Yes/No
Trinidad & Tobago	20	1 545	1 395	811	829	3 728	Yes	No	Yes/No
	25	1 400	1 050	500	600	2 435			
Uruguay	-	-	-	-	-	-	No	No	Yes/No

TABLE 2.6 - AMERICAN REGION 1990
UNIT COSTS OF CONSTRUCTION (US\$ PER CAPITA) AND OF WATER PRODUCTION (US\$/m3)

Country/ territory	Construction						Operation					
	Urban water supply		Urban sanitation		Rural water supply	Rural sani- tation	Average urban cost of water production	Average urban water tariff	Progressive urban water tariff	Average rural cost of water production	Average rural water tariff	Progressive rural water tariff
	House connections	Stand posts	Sewer connections	By other means								
Bahamas	-	-	-	-	-	-	0.89	1.97	Yes	-	-	Yes
Barbados	-	-	-	-	-	-	0.31	0.60	Some areas	0.31	0.60	Some areas
Belize	150	100	400	150	100	30	0.80	1.30	Some areas	0.65	0.90	No
Bolivia	78	-	120	-	52	13	-	0.14	Yes	-	0.07	No
Brazil	100	25	120	30	45	15	0.15	0.13	Yes	-	-	-
Colombia	100	70	80	70	80	60	0.26	0.33	Some areas	0.00	0.00	No
Cuba	115	-	110	-	83	-	0.08	0.10	Some areas	-	-	-
Dominican Republic	105	26	122	108	68	20	-	-	Some areas	-	-	Some areas
Ecuador	153	138	120	60	133	55	0.07	0.10	-	0.04	0.45	No
El Salvador	165	67	82	25	80	10	0.1	0.1	Some areas	-	-	-
Guatemala	202	-	90	-	72	18	-	-	Some areas	1.00	0.03	No
Guyana	-	-	-	-	-	-	0.45	-	No	-	-	No
Haiti	225	65	325	40	53	30	0.27	0.30	No	0.13	0.10	No
Honduras	-	-	-	-	-	-	0.10	0.09	-	0.04	0.02	-
Mexico	-	-	-	-	-	-	0.71	0.44	Yes	-	0.30	Yes
Nicaragua	-	-	-	-	-	-	-	-	Yes	-	-	-
Paraguay	170	-	195	200	140	70	0.60	0.51	Some areas	-	-	No
Peru	-	-	-	-	45	15	0.13	0.16	No	-	0.20	Yes
Trinidad & Tobago	2 040	1 530	940	485	517	100	0.26	0.23	Some areas	-	-	-
Uruguay	220	-	380	-	-	-	-	0.42	Some areas	-	-	Some areas
Venezuela	-	-	-	-	163	-	-	-	-	-	-	No

TABLE 2.7 - AMERICAN REGION 1990
INVESTMENT ESTIMATES 1981-1990

Country/ territory	Estimated cost to reach country Decade targets US\$ millions	Sector investments (1986-1990)				Investment acceleration needed (fold)
		Total US\$ millions	Percentage of total development investment	External		
				US\$ millions	(%)	
Bahamas ^a	224.9	54.0	-	15.8	29.3	2.08
Barbados	-	33.5	-	12.3	36.6	-
Belize	65.0	-	-	-	-	-
Brazil	6 845.4	7 742.3	-	5 779.4	74.6	0.88
British Virgin Islands	21.0	16.0	-	13.0	81.3	1.31
Colombia	1 893.0	1 898.4	-	-	-	1.00
Cuba	432.0	277.0	-	60.0	21.7	1.56
Dominican Republic	-	84.9	-	12.0	14.1	-
Ecuador	1 660.0	148.8	-	19.5	13.1	11.16
El Salvador	277.1	140.7	-	140.7	100.0	1.97
Guatemala	944.2	180.0	-	135.2	75.1	5.25
Guyana	52.2	9.8	-	7.3	74.3	5.32
Haiti	-	140.9	-	120.5	85.5	-
Honduras ^b	213.8	235.7	-	145.0	61.5	0.91
Mexico	-	301.1	-	49.6	16.5	-
Paraguay	115.0	-	-	-	-	-
Peru	-	257.4	-	45.3	17.6	-
Trinidad & Tobago	8.0	9.3	-	0.7	7.5	0.86

^a Urban only.

^b Water only.

TABLE 2.8 - AMERICAN REGION 1990
 FREQUENCY AND RANKING OF CONSTRAINTS ^a

Constraints	No. of countries indicating constraint			Ranking index ^b
	Very severe	Severe	Moderate	
Funding limitations	7	10	3	44
Inadequate cost-recovery framework	7	8	5	42
Operation and maintenance	4	12	3	39
Logistics	4	10	4	36
Inappropriate institutional framework	4	7	7	33
Intermittent water service	4	7	7	33
Insufficiency of trained personnel (sub-professional)	3	7	9	32
Inadequate or outmoded legal framework	2	7	9	29
Insufficient health education	4	4	8	28
Lack of definite government policy for sector	3	4	11	28
Insufficiency of trained personnel (professional)	2	5	10	26
Non-involvement of communities	3	2	11	24
Inadequate water resources	1	4	12	23
Insufficient knowledge of water resources	1	3	14	23
Import restrictions	3	3	7	22
Lack of planning and design criteria	-	6	10	22
Inappropriate technology	1	5	8	21

^a Number of reporting countries 22

^b Ranking index = 3 x (No. very severe) + 2 x (No. severe) + (No. moderate)

TABLE 2.9 - AMERICAN REGION 1990
DECADE APPROACHES DURING 1981-1990

Country/territory	Improved services for the urban poor			Percent of rural communities participating in improvements			Primary school children receiving health education (%)	Promotion of women's participation (Yes/No)	Water supply and sanitation in rural areas as part of PHC (Yes/No)
	Total urban poor population (000)	Population affected by improvements (%)	Urban water development fund used (%)	Planning (%)	Building (%)	Operation (%)			
Bahamas	-	-	-	-	-	-	-	No	No
Belize	-	-	-	10	25	10	50	Yes ^a	Yes ^b
Brazil	32 000	3	2	-	-	-	-	No	No
British Virgin Islands	-	-	-	10	10	10	-	No	No
Ecuador	-	-	1	-	100	50	-	-	-
El Salvador	-	-	-	80	80	40	-	-	-
Guatemala	-	-	-	10	75	90	-	Yes	Yes
Guyana	-	-	-	0	0	0	-	Yes ^c	No
Haiti	1 080	30	10	25	20	12	32	Yes ^d	No
Honduras	540	1	5	100	100	100	0	Yes ^e	Yes ^f
Paraguay	1 361	4	12	100	100	100	90	Yes ^g	Yes ^h
Peru	-	-	-	-	100	100	-	No	-
Trinidad & Tobago	-	-	-	60	60	0	100	No	No
Uruguay	-	-	-	0	0	0	-	No	No

- (a) Women are members of village councils, village health committees, and safe water groups.
- (b) Total water initiates community development for water and sewerage projects and primary health, Ministry of Health workers carry on programmes afterwards.
- (c) The Women's Affairs Bureau is involved in the planning and implementation of two rural water supply projects funded by UNICEF (Mahdia and Faum Village) the Central Office as well as the local Chapters.
- (d) Women are always involved in drinking Water Committees and well considered.
- (e) Se esta incorporando a la Mujer para que participe in forme activa in la organizacion de las Juntas Administradoras y in los proyectos de conservacion de cuencas y saneamiento.
- (f) Los nuevos proyectos han incorporado los componentes educativos y la conservacion de las cuencas que tributan a las fuentes utilizadas.
- (g) Todos los sistemas de agua y alcantarillado incluyen como el factor mas importante la participacion de la mujer por las condiciones especificas del Paraguay donde la mujer es la jefa de la familia.
- (h) Todos los acueductos rurales se ejecutan y de planifica con la participacion de todos las reparticiones del Ministerio de Salud incluyendo atencion medica, PAI, vectores y enfermedades infecciosas.

3. SOUTH-EAST ASIA

3.1 Socioeconomic and health situation

Out of the Region's 11 Member States, a total of 10 provided information on the status of water supply and sanitation as at 31 December 1990. This is one more than has been consistently reported throughout the 1980s, meaning that this is the Region with the soundest basis for comparing conditions and hence assessing Decade progress.

During the IDWSSD the population increased by around 250 million or 24% with the largest increase of 49% occurring in the urban areas. The rural population increase of only 16%, however, represented a population rise of 135 million or 54% of the total.

The median value for population in countries without access to an adequate and safe water supply was 40% in 1990 compared with a value of 76% at the start of the Decade. The proportion of the population without sanitation in 1990 was estimated on the basis of median values to be 77.1% compared to 82% at the start of the Decade.

Table 3.1 Comparison between socioeconomic and health situation 1980-1990

Median reported values		
	1980	1990
Population (000)	1 059 337	1 310 105
Population growth (%/year)	2.2	2.3
GNP (US\$ per capita)	190	180
Life expectancy (years)	51	61
Infant mortality (per 1000)	108	65
Waterborne diseases (per 100 000)	831*	10 000

Life expectancy of reporting countries ranged from 48 to 70 years, compared with 48 to 66 at the start of the Decade. Infant mortality ranged from 19 to 142 per 1000 live births in 1990 compared with 27 to 153 in 1980. The incidences of waterborne diseases ranged from 17 to 51 000 per 100 000 population in 1990 compared with 116 to 4500 in 1980; however, this clearly does not reflect a true comparison since only four countries reported in 1980.

National GNP in 1990 ranged from US\$ 120 to US\$ 440 while in 1980 the corresponding values were US\$ 90 to US\$ 620. The highest reporting country in 1980, Thailand, did not report in 1990; without Thailand the 1980 range would have been US\$ 90 to US\$ 430, very similar to the situation ten years earlier. This would seem to indicate a stagnant economic situation in US dollar terms.

3.2 Targets and planning

Table 3.2 Computed coverage values 1980-1990

	Urban water supply %	Rural water supply %	Urban sanitation %	Rural sanitation %
1980	64	31	30	6
1990	73	64	50	12

Water supply

Based on information provided by ten reporting countries of the Region in 1980 and 1990, considerable progress was made during the course of the Decade in expanding water supply services in urban and rural areas.

To reach the Decade target of 83% coverage for urban water supply, a total of 141 million people would have had to be provided with services as compared to the 106 million actually served, i.e. there was a 25% shortfall in programme delivery.

To reach the Decade target of 82% coverage for rural water supply, an estimated 531 million people would have had to have been provided with services as compared with the 358 million actually served, i.e. there was a 33% shortfall in programme delivery.

Overall, the shortfall in water supply programmes delivery was 31%.

- In raising urban water supply coverage from 64% to 73%, an estimated 106 million people were served;
- in raising rural water supply coverage from 31% to 64%, an estimated 358 million people were served;
- by extending water services to a total of 464 million urban and rural people, overall coverage rose from 38% to 66%;

Table 3.2.1 Urban water supply service coverage

	1980	1990 (coverage)	1990 Target calculated at start of Decade
Urban population estimate (millions)	236.07	351.77	351.77
Estimated % service coverage	64	73	83
Estimated population served or to be served (millions)	151.08	256.79	291.97

Table 3.2.2 Rural water supply service coverage

	1980	1990 (coverage)	1990 Target established at start of Decade
Rural population estimate (millions)	823.27	958.33	958.33
Estimated % service coverage	31	64	82
Estimated population served or to be served (millions)	255.21	613.33	785.83

Table 3.2.3 Overall (urban/rural) water supply service coverage

	1980	1990 (coverage)	1990 Target established at start of Decade
Total population estimate (millions)	1059.34	1310.10	1310.10
Estimated population served or to be served (millions)	406.29	870.12	1077.80
Estimated % service coverage	38	66	82

Sanitation

Information indicates that noticeable progress was made in expanding urban sanitation service coverage, and the target of 49% coverage was in fact attained. As far as rural sanitation is concerned, limited progress was recorded in expanding service coverage during the Decade and therefore even the modest region-wide target of 31% computed from individual national targets was over ambitious.

Table 3.2.4 Urban sanitation service coverage

	1980	1990	1990 Target established at start of Decade
Urban population estimate (millions)	236.07	351.77	351.77
Estimated % service coverage	30	50	49
Estimated population served or to be served (millions)	70.82	175.89	172.37

Table 3.2.5 Rural sanitation service coverage

	1980	1990	1990 Target established at start of Decade
Rural population estimate (millions)	823.27	958.33	958.33
Estimated service coverage	6	12	31
Estimated population served or to be served (millions)	49.40	118.60	297.08

Table 3.2.6 Overall (urban/rural) sanitation service coverage

	1980	1990	1990 Target established at start of Decade
Total population (millions)	1059.34	1310.10	1310.10
Estimated population served or to be served	120.22	294.49	469.45
Estimated % service coverage	11	22	36

- In raising urban sanitation services coverage from 30% to 50%, an estimated 105 million people were served;
- In extending rural sanitation service coverage from 6% to 12%, a total of 69 million people were served;
- by extending sanitation services to a total of 174 million people, overall service coverage rose from 11% to only 22%. Sufficient urban population was reached with sanitation (105 million) for the Decade target to have been attained.

The limited progress towards attaining the rural sanitation target of 31% service coverage represented a shortfall in services delivery of 72%.

The sanitation situation is not as good as was estimated in 1988; however, this can in part be accounted for by Indonesia, the second most populous country which reported relatively high coverage in 1988, not reporting for sanitation in 1990.

3.3 Staff and training

At the start of the Decade lack of professional and sub-professional staff was considered to be the second and third most serious constraints to the expansion of water supply and sanitation services. By the end of the 1980s, poor operation and maintenance had overtaken lack of professional personnel as the second most serious constraint.

Lack of sub-professional personnel also shared the third position in the ranking of constraints with inadequate operation and maintenance and insufficient cost recovery. Poor operation and maintenance is, of course, a constraint to which lack of trained personnel contributes significantly.

All reporting countries indicated that at national level a water supply and sanitation training budget had been established; however, only Bhutan indicated that the amount allocated was sufficient. Also, all countries but Myanmar reported that a national water supply and sanitation human resources development plan had been prepared. Countries indicated that between 56 and 401 personnel per million population were engaged in providing services. The median value is 208. By the year 2000 it is anticipated that this number will have to increase to 258.

In rural areas all countries but one reported that community-based workers contributed significantly to providing services.

3.4 Financial resources

Funding limitations have continued to be cited as the single most serious constraint to water supply and sanitation programme development in South-East Asia, with inadequate cost recovery as one of the third most serious. During the course of the 1980s the perceived importance of inadequate cost recovery as a constraint has increased.

Table 3.4.1 Unit cost of water supply and sanitation facilities (US\$ per capita)

	1980	1985	1990	Average
(a) Urban water supply by house connection	55	60	74.4 ✓	63.1
(b) Urban water supply by stand post	-	35	47.7 ✓	41.4
(c) Rural water supply	17.5	15.5	27.7 ✓	20.2
(d) Urban sanitation by sewer	63	80.5	151.5 ✓	98.3
(e) Urban sanitation by other means	15	20	36 ✓	23.7
(f) Rural sanitation	9	14.5	10.7 ✓	11.4

Reporting of unit costs of services throughout the Decade has been rather inconsistent as demonstrated from the results in Table 3.4.1 above.

Table 3.4.2 Breakdown of population served 1981-1990 (during the IDWSSD)

	Number served 1980	Number served 1990	Number additionally served
Urban water supply	151.08	256.79	105.71
Urban sanitation	70.82	175.89	105.07
Rural water supply	255.21	613.33	358.12
Rural sanitation	49.40	118.60	69.20

Based on the number of people served by different technologies, it is estimated that of the urban population served with water, 66% is served through a house connection and 34% through a stand post. In the case of urban sanitation, it is assumed that, of those served, 60% will be by house connection to a sewer and 40% by a septic tank or other acceptable means according to local standards.

Table 3.4.3 Estimated water supply and sanitation investment 1981-1990

Sub-sector	Number served (millions)	Unit costs US\$	Total investment US\$ (millions)
Urban water (HC)	69.8	63.1	4404.4
Urban water (SP)	35.9	41.4	1486.3
Urban sanitation (SC)	63.0	98.3	6192.9
Urban sanitation (OM)	42.1	23.7	997.8
Rural water	358.1	20.2	7233.6
Rural sanitation	69.2	11.4	788.9
Total			21103.9

The proportion of sector investment from external sources calculated on the basis of weighted population is 43.3%. On this basis, of the US\$ 21 104 million invested during the Decade, around US\$ 9138 million was from external (bilateral/multilateral) sources.

3.5 Decade approaches

Only two countries in the Region provided information on the extent to which specific programmes were being implemented to address the problems of the urban poor. In both cases, it was indicated that around 16% of the urban poor population was benefiting from such programmes.

Only one country indicated that rural communities were totally involved in the planning of their water supply and sanitation systems while two indicated that no such involvement took place. On the other hand, three countries indicated a high degree of community participation at the construction phase, while five indicated that 50% or more of rural communities was responsible for the operation and maintenance of systems.

Three countries indicated that all primary school children received health education as a part of their school curriculum. Two others indicated that 60% and 80% of children received such tuition.

Four countries indicated that programmes were being implemented specifically to promote the participation of women while one country clearly indicated that no such programmes existed.

Finally, only one out of seven countries reporting indicated that water supply and sanitation programmes were not being implemented as part of their primary health care programmes.

Fig. 3.1 South-East Asia Region
Population coverage in 1980, 1983, 1985, 1988 & 1990 ^a

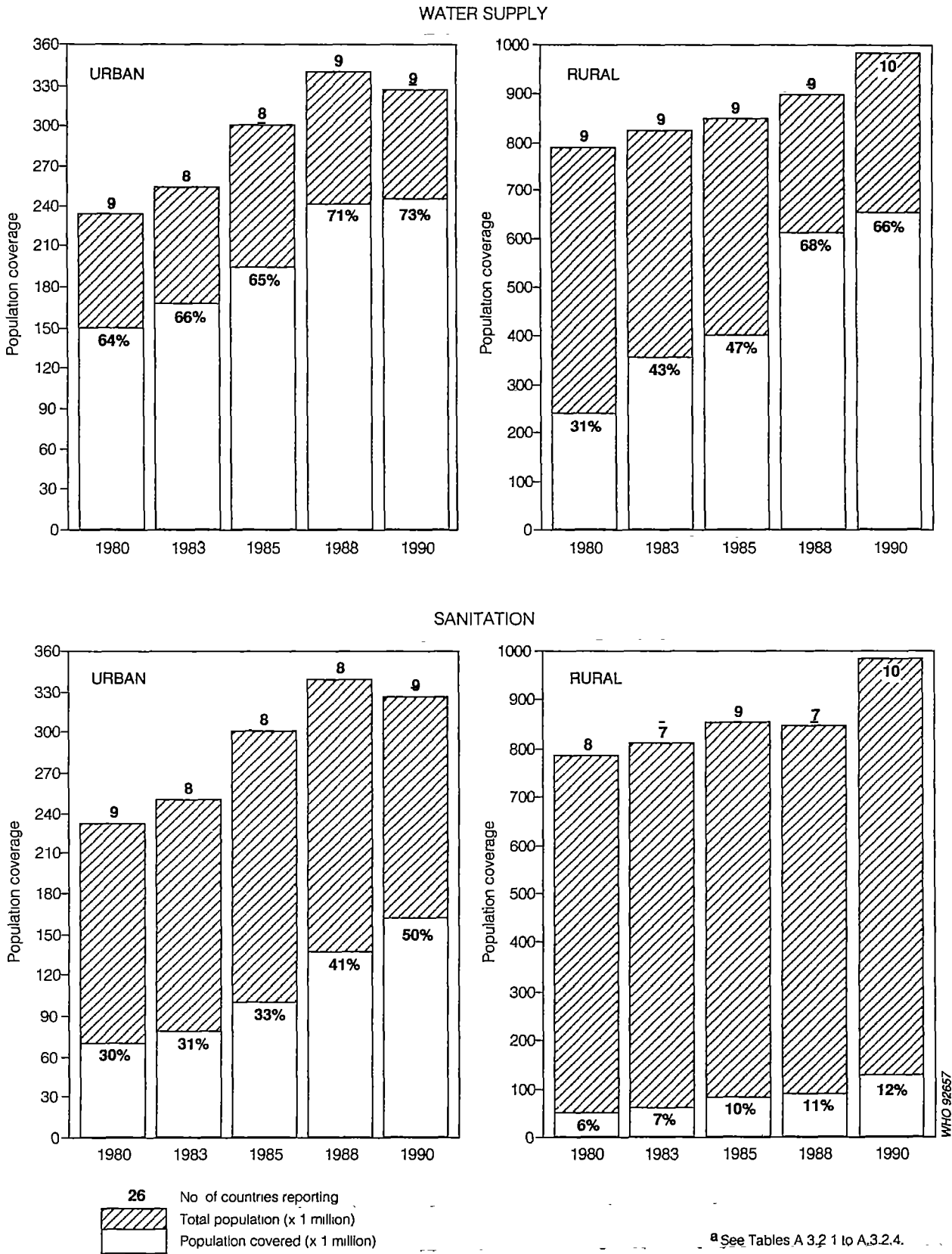


TABLE 3.1 - SOUTH-EAST ASIA REGION 1990
 BASIC INDICATORS: DEMOGRAPHIC, ECONOMIC, HEALTH

Country/ territory	Population (000)	Population growth rate (%)	GNP per capita (US \$)	Life expectancy (years)	Infant mortality per 1000 live births	Waterborne diseases cases per 100 000	Population without safe water (%)	Population without sanitation (%)
Bangladesh	112 600	3.0	170	51.0	111	51 000	22	88
Bhutan	1 375	2.0	120	48.1	142	17	66	87
India	904 187	3.4	-	61.0	61	12 511	15	82
Indonesia	182 700	2.0	-	-	-	-	72	-
Maldives	213	2.8	-	61.3	48	Medium	30	72
Mongolia	2 100	3.0	-	62.5	69	-	20	26
Myanmar	40 786	2.0	440	62.6	47	600	68	65
Nepal	18 940	2.7	180	52.0	107	10 000	63	94
Sri Lanka	17 600	1.2	367	70.0	19	700	40	50
Thailand	56 340	1.4	-	-	-	-	-	-

TABLE 3.2 - SOUTH-EAST ASIA REGION 1990
 COVERAGE TARGETS (% of population) (2000) AND DECADE PLANS

Country/territory	Urban water supply		Urban sanitation		Rural		Status of Decade plan preparation	Year by which total coverage planned for or reached
	House connection	Stand-post	Sewer connection	By other means	Water supply	Sanitation		
Bhutan	60 ^a		20	80	80	30	Partial urban WS&S	2020
India	-	-	-	-	100	10	-	-
Indonesia	60	20	20	60	80	80	Yes/1983	2015
Maldives	-	-	100	0	80	40	Yes/1985	-
Mongolia	32	19	32	34	39	34	Yes/1985	-
Myanmar	100 ^a		100 ^a		100	100	Yes/1982	2000
Nepal	90 ^a		75 ^a		75	25	Yes	-
Sri Lanka	100 ^a		100 ^a		100	100	Yes/1980	2000
Thailand	90 ^a		-	-	90	80	Under preparation	-

(a) Breakdown not given.

TABLE 3.3 - SOUTH-EAST ASIA REGION 1990
1990 LEVELS OF SERVICE

Country/ territory	POPULATION WITH SERVICES										
	Population			Drinking water				Sanitation			
	Total (000)	Urban (000)	Rural (000)	Urban		Rural (000)	Urban			Rural (000)	
				Total (000)	By H.C. (000)		By P.S. (000)	Total (000)	By S.C. (000)		By other (000)
(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	
Bangladesh	112 600	25 000 (22)	87 600 (78)	9 625 (39)	7 800 (31)	1 825 (7)	78 383 (89)	10 000 (40)	1 000 (4)	9 000 (36)	3 709 (4)
Bhutan	1 375	179 (13)	1 197 (87)	107 (60)	- (-)	- (-)	359 (30)	143 (80)	0 (0)	143 (80)	36 (3)
India	904 187	232 655 (26)	671 532 (74)	200 083 (86)	130 287 (56)	69 797 (30)	463 357 (69)	102 368 (44)	72 123 (31)	30 245 (13)	20 146 (3)
Indonesia	179 300	55 400 (31)	123 900 (69)	19 400 (35)	15 500 (28)	3 900 (7)	40 800 (33)	43 900 (79)	20 700 (37)	23 200 (42)	37 300 (30)
Maldives	213	55 (26)	158 (74)	42 (77)	0 (-)	42 (77)	107 (68)	52 (95)	52 (95)	0 (0)	7 (4)
Mongolia	2 100	1 089 (52)	1 011 (48)	1 089 (100)	576 (53)	513 (47)	591 (58)	1 089 (100)	576 (53)	513 (47)	472 (47)
Myanmar	40 786	9 870 (24)	30 916 (76)	7 797 (79)	- (-)	- (-)	22 260 (72)	4 935 (50)	- (-)	- (-)	4 019 (13)
Nepal	18 940	1 811 (10)	17 129 (90)	1 196 (66)	- (-)	- (-)	5 753 (34)	615 (34)	- (-)	- (-)	514 (3)
Sri Lanka	17 600	3 660 (21)	13 940 (79)	2 920 (80)	900 (25)	2 020 (55)	7 640 (55)	2 500 (68)	- (-)	- (-)	6 270 (45)
Thailand	55 702	12 609 (23)	43 093 (77)	- (-)	- (-)	- (-)	36 771 (85)	- (-)	- (-)	- (-)	50 169 (86)
TOTAL	1 332 803	342 328 (26)	990 476 (74)	242 260 (73)	155 062 (49)	78 097 (25)	656 021 (66)	165 602 (50)	94 451 (30)	63 102 (20)	122 641 (12)

TABLE 3.4 - SOUTH-EAST ASIA REGION 1990
PRESENT (1990-top line) AND PROJECTED (2000-bottom line) POPULATION COVERAGE (in thousands)

Country/ territory	Water supply			Sanitation		Rural population	Safe water	Adequate sanitation
	Urban population	House connection	Stand- post	Sewer connections	By other means			
Bhutan	179		107*	0	143	1 197	359	36
	230		138*	46	184	1 145	916	344
India	232 655	130 287	69 797	72 123	30 245	671 532	463 357	20 146
	356 875		310 481*		185 575*	685 654	555 380	54 852
Indonesia	54 500	15 500	3 900	20 700	23 200	123 900	40 800	37 300
	75 800	45 480	15 160	15 160	45 480	140 200	112 160	112 160
Maldives	55	0	42	52	0	158	107	7
	55	0	55	55	0	158	158	63
Mongolia	1 089	576	513	576	513	1 011	591	472
	1 635		1 635*		1 635*	1 361	1 361	1 361
Myanmar	9 870		7 797*		4 935*	30 916	22 260	4 019
	12 793		12 793*		12 793*	36 411	36 411	36 411
Nepal	1 811		1 196*		615*	17 129	5 753	514
	2 921		2 629*		2 191*	20 335	15 251	5 084
Sri Lanka	3 660	900	2 020	2 500*		13 940	7 640	6 270
	4 300		4 300*	4 300*		16 500	16 500	16 500

* No breakdown given

TABLE 3.4A - SOUTH-EAST ASIA REGION 1990
DECADE SERVICE COVERAGE AND TARGETS

Sub-sector	Population	Population	1980		1990		1990	
	1980 (000)	1990 (000)	Coverage (000)	(%)	Coverage (000)	(%)	Target (000)	(%)
Urban water	236 071	351 773	151 085	64	256 794	73	291 972	83
Rural water	823 266	958 332	255 212	31	632 499	66	785 832	82
Urban sanitation	236 071	351 773	70 821	30	175 887	50	172 369	49
Rural sanitation	823 266	958 332	49 396	6	115 000	12	297 083	31

TABLE 3.5 - SOUTH-EAST ASIA REGION 1990
 STAFF RESOURCES 1990 (top line) AND PROJECTED REQUIREMENTS FOR 2000 (bottom line)

Country/territory	Planning and management	Technical	Craftsmen artisanal	Administration clerical	Unskilled workers	Total per million population	Community based workers (Yes/No)	HRD master plan (Yes/No)	Established training budget and is it sufficient (Yes/No)
Bangladesh	15	856	1 450	940	3 000	56	Yes	Yes	Yes/No
	15	878	1 800	1 020	4 500	55			
Bhutan	7	92	187	0	0	208	Yes	Yes	Yes/Yes
	10	200	562	0	0	561			
Indonesia	2 716	9 135	3 450	5 418	3 831	134	Yes	Yes	Yes/No
	3 146	10 851	5 012	6 146	4 681	163			
Maldives	10	15	14	23	7	324	Yes	Yes	Yes/No
	16	30	60	38	19	-			
Myanmar	45	771	2 089	441	581	96	Yes	No	Yes/No
	52	1 066	3 126	539	701	111			
Mongolia	-	-	-	-	-	-	Yes	Yes	Yes/No
	-	-	-	-	-	-			
Nepal	11	3 077	-	1 470	2 467	371	Yes	Yes	Yes/No
	15	5 965	-	2 130	2 875	540			
Sri Lanka	210	715	2 060	840	3 226	401	Yes	Yes	Yes/No
	235	800	2 200	900	3 200	353			
Thailand	4	26	9	18	17	-	No	Yes	Yes/No
	13	50	20	27	30	-			

TABLE 3.6 - SOUTH-EAST ASIA REGION 1990
UNIT COSTS OF CONSTRUCTION (US\$ PER CAPITA) AND OF WATER PRODUCTION (US\$/m3)

Country/ territory	CONSTRUCTION						OPERATION		
	Urban water		Urban sanitation		Rural		Average cost of water production	Average water tariff	Progressive water tariff
	House connection	Stand- posts	Sewer connection	By other means	Water supply	Sani- tation			
Bangladesh	26	13	-	4	1	4	0.10	0.07	Yes/Some areas
Bhutan	720	-	-	240	300	240	-	-	No
Indonesia	80	-	-	100	60	-	0.14	0.25	Yes
Maldives	-	-	-	-	10	-	3.25	5.88	-
Myanmar	87	50	100	37	25	10	0.30	0.30	Partial
Nepal	136	45	152	19	30	8	0.13	0.06	No
Sri Lanka	170	90	400	35	14	13	0.19	0.20	Partial
Thailand	-	-	-	-	31	11	-	-	No

TABLE 3.7 - SOUTH-EAST ASIA REGION 1990
INVESTMENT ESTIMATES 1991-1990

Country/territory	Estimated cost to reach country decade targets US\$ millions	SECTOR INVESTMENTS (1981-1990)				Investment acceleration needed (fold)
		Total US\$ millions	Percentage of total development investment	External US\$ millions (%)		
Bangladesh	-	171.9	1.2	97.2	57	-
Indonesia ^a	439.9	161.1	2.0	49.6	31	2.73
Maldives	16.9	-	-	-	-	-
Myanmar	332.1	316.6	-	147.9	47	1.05
Nepal	-	104.0	4.1	43.0	41	-
Sri Lanka	570.0	230.0	4.6	190.0	83	2.48

a) Water supply only.

TABLE 3.8 - SOUTH-EAST ASIA REGION 1990
RANKING AND FREQUENCY OF CONSTRAINTS a

Constraints	No. of countries indicating constraint			Ranking index b
	Very severe	Severe	Moderate	
Funding limitations	4	4	1	21
Operation and maintenance	3	5	1	20
Insufficiency of trained personnel (professional)	2	4	2	16
Inadequate cost-recovery framework	1	5	3	16
Insufficiency of trained personnel (sub-professional)	2	4	2	16
Logistics	-	5	4	14
Insufficient knowledge of water resources	-	3	6	12
Lack of planning and design criteria	-	2	7	11
Inadequate water resources	1	1	5	10
Inappropriate institutional framework	-	1	8	10
Non-involvement of communities	1	2	3	10
Intermittent water service	1	2	3	10
Lack of definite government policy for sector	-	2	5	9
Insufficient health education efforts	-	3	3	9
Inadequate or outmoded legal framework	-	1	7	9
Import restrictions	-	1	7	9
Inappropriate technology	-	1	7	9
	-	-	-	
Lack of information system (Myanmar)	-	1	-	

(a) Number of reporting countries 10

(b) Ranking index = 3 x (No. very severe) + 2 x (No. severe) + (No. moderate)

TABLE 3.9 - SOUTH-EAST ASIA REGION 1990
DECADE APPROACHES DURING 1990

Country/territory	Improved services for the urban poor			Percent of rural communities participating in improvements			Primary school children receiving health education (%)	Promotion of women's participation (Yes/No)	Water supply and sanitation in rural areas as part of PHC (Yes/No)
	Total urban poor population (000)	Population affected by improvements (%)	Urban water development fund used (%)	Planning (%)	Building (%)	Operation (%)			
Bangladesh	8 834	15	20	0	90	50	100	Yes	Yes
Bhutan	-	-	-	0	100	60	-	-	-
Indonesia	-	-	-	-	-	-	-	Yes ^a	Yes ^b
Maldives	-	-	-	-	3	53	100	Yes	Yes
Mongolia	-	-	-	-	-	-	-	-	-
Myanmar	2 073	17	6	100	94	99	80	No	Yes ^d
Nepal	-	-	-	10	20	20	-	Yes ^f	Yes ^g
Sri Lanka	-	-	-	40	40	30	100	-	Yes ^e
Thailand	-	-	-	10	10	50	60	Yes ^c	No

Indonesia urban poverty alleviation campaign started in 1989

(a) Training for PKK women's group

(b) Within some UNICEF projects.

(c) One day training courses.

(d) Convergent programmes on water supply and health education are being programmed and implemented along with the PHC programme using morbidity rate of diarrhoea as indicator for priority setting.

(e) In all programmes.

(f) Women involvement is being encouraged by appointing them as handpump caretakers and in health education as far as possible.

(g) Rural water supply projects under UNICEF assistance are integrated with primary health care programme.

5. EASTERN MEDITERRANEAN REGION

5.1 Socioeconomic and health situation

Ten countries of the Region provided information on the status of water supply and sanitation at the end of 1990. Compared with other Regions this was a disappointment. However, since several of the Region's more populous countries were included, the proportion of the Region's total population contained in the sample was relatively high, i.e. 73%.

During the course of the Decade the overall population of the Region grew by an estimated 36%; 53% in urban areas and 25% in rural areas. Population annual growth rates reported ranged from 1.1% in Cyprus to 4.2% in Qatar, with a median value of 3.1%

Life expectancy of 50 years or over was reported by all eight reporting countries. It varies across the Region from 55 years in Pakistan to 76.1 years in Cyprus; the median value was 66.8 years.

Infant mortality rates ranged from 11 per 1000 live births in Cyprus to 182 per 1000 live births in Afghanistan; the median value was 43 per 1000 live births. Only six countries provided information on waterborne disease incidences, which ranged from 0 per 100 000 in the case of Cyprus to 25 000 per 100 000 in Pakistan. Four of the six countries reported more than 1000 cases per 100 000 population.

Economic conditions vary widely across the Region although the full magnitude of this disparity cannot be assessed since only three countries provided values for GNP; Pakistan, the lowest of the three, had a GNP of US\$ 276 while Cyprus, the highest, reported a GNP of US\$ 9 870. From previous reporting, it is known that the oil-rich countries of the Region have GNPs several times higher than even this higher value.

Over half of the population in one reporting country, Afghanistan, had no access to an adequate and safe water supply, and in two countries, half or more of the population was without access to an appropriate means of excreta disposal.

5.2 Targets and plans

Water supply

Overall, 122 million additional people were provided with access to an adequate and safe water supply during the course of the Decade. This raises the level of service coverage from 51% to 69%. To have attained the aggregated regional target of 79% service coverage, an additional 40 million people would have had to have been served. This represents a programme delivery shortfall of 25%.

In urban areas, water supply service coverage rose from 83% to 91% during the period 1981-1990, 8 percentage points short of the regional target of 99% coverage. To reach 91% service coverage by the end of 1990, a total of 64 million people had to be served. To have reached the target level of 99% coverage, a total of 77 million people would have had to have been served during the Decade. There was, therefore, an apparent shortfall of 17% in urban water supply programme delivery.

Table 5.2.1 Urban water supply service coverage

	1980	1990 (coverage)	1990 Target calculated at start of Decade
Urban population estimate (millions)	113.15	173.13	173.13
Estimated % service coverage	83	91	99
Estimated population served or to be served (millions)	93.91	157.55	171.40

Table 5.2.2 Rural water supply service coverage

	1980	1990 (coverage)	1990 Target established at start of Decade
Rural population estimate (millions)	174.27	217.77	217.77
Estimated % service coverage	30	51	63
Estimated population served or to be served (millions)	52.28	111.06	137.20

Table 5.2.3 Overall (urban/rural) water supply service coverage

	1980	1990 (coverage)	1990 Target established at start of Decade
Total population estimate (millions)	287.42	390.90	390.90
Estimated population served or to be served (millions)	146.19	268.61	308.60
Estimated % service coverage	51	69	79

Rural water supply service coverage rose from 30% at the end of 1980 to 51% at the end of 1990. During the ten years to achieve this a total of 59 million people was provided with services. The regional Decade target for rural water supply coverage was 63% which would have required services having been extended to an additional 85 million people from the start of 1981. This means that the shortfall in rural water supply programme delivery was 31%.

Sanitation

Table 5.2.4 Urban sanitation service coverage

	1980	1990	1990 Target established at start of Decade
Urban population estimate (millions)	113.15	173.13	173.13
Estimated % service coverage	57	79	86
Estimated population served or to be served (millions)	64.50	136.77	148.89

Table 5.2.5 Rural sanitation service coverage

	1980	1990	1990 Target established at start of Decade
Rural population estimate (millions)	174.27	217.77	217.77
Estimated service coverage	7	20	31
Estimated population served or to be served (millions)	12.20	43.55	67.51

Table 5.2.6 Overall (urban/rural) sanitation service coverage

	1980	1990	1990 Target established at start of Decade
Total population (millions)	287.42	390.90	390.90
Estimated population served or to be served	76.70	180.32	216.40
Estimated % service coverage	27	46	55

Overall, during the course of the Decade, the level of sanitation service coverage in the Eastern Mediterranean Region increased from 27% to 46%, falling nine percentage points below the target of 55%. To have reached the target level, a total of 140 million people would have had to be served compared to the 104 million who actually received services. This represents a programme shortfall of 26%.

In urban areas during the Decade, service coverage rose from 57% to 79% through services having been provided to an additional 72 million people. To have attained the Decade regional target of 86% coverage, 84 million people would have had to be served. There was, therefore, a programme delivery shortfall of 14%.

In rural areas, coverage rose from 7% to 20% during the Decade which represented a total of 31 million additional people having received serviced. To reach the target of 31% coverage, a total of 55 million people would have had to have been served. Therefore, the programme shortfall for rural sanitation was approximately 44%.

Table 5.2.7 Programme delivery shortfalls - Eastern Mediterranean

	% Shortfall
Urban water supply	17
Rural water supply	31
Urban sanitation	26
Rural sanitation	44

5.3 Staff and training

Information on staff and training provided by reporting countries was limited. The staff per million inhabitants served was reported by six countries and varied from a value of 126 in Afghanistan to 2484 in Cyprus.

The use of community-based workers in the provision of services in rural areas was reported by six out of a total of ten countries.

Five countries out of nine reported having established human resources development plans, while eight out of ten indicated that a budgetary allotment had been established for training purposes.

Unfortunately, only one country, Bahrain, indicated that the amount allotted was sufficient.

5.4 Financial resources

Funding limitations have continued since 1988 as the most serious perceived constraint to the implementation of national water supply and sanitation programmes closely followed by poor operation and maintenance and inadequate water resources. Cost recovery was considered the sixth most serious constraint immediately after lack of sufficient trained professional and sub-professional staff.

Table 5.4.1 Unit costs of water supply and sanitation facilities (US\$ per capita)

	1980	1985	1990	Average
(a) Urban water supply by house connection	100	106	225	144
(b) Urban water supply by stand post	46	55	135	79
(c) Rural water supply	32	40	65	46
(d) Urban sanitation by sewer	150	150	360	220
(e) Urban sanitation by other means	53	116	90	86
(f) Rural sanitation	15	25	73	38

The increase in per capita costs reported between 1985 and 1988 have been confirmed in 1990 indicating a possible under-estimation during the first five years of the Decade in this Region.

Table 5.4.2 Breakdown of population served 1981-1990 (during the IDWSSD)

	Number served 1980	Number served 1990	Number additionally served
Urban water supply	93.91	157.55	63.64
Urban sanitation	64.50	136.77	72.27
Rural water supply	52.28	111.06	58.78
Rural sanitation	12.20	43.55	31.35

Based on the number of people served and the fact that 92% of the urban population served with water was through a house connection and 45% of the urban population with access to appropriate sanitation was connected to a public sewer, the following calculation of investment during the Decade has been undertaken.

Table 5.4.3 Estimated water supply and sanitation investment 1981-1990

Sub-sector	Number served (millions)	Unit costs US\$	Total investment US\$ (millions)
Urban water (HC)	58.6	144	8438.4
Urban water (SP)	5.0	79	395.0
Urban sanitation (SC)	32.5	220	7150.0
Urban sanitation (OM)	39.8	86	3422.8
Rural water	58.8	46	2704.8
Rural sanitation	31.4	38	1193.2
Total			23 304.2

According to current sector investment patterns, of US\$ 23 304 million invested in new capital construction during the IDWSSD in the Eastern Mediterranean Region, approximately 35.5%, based on weighted averages, i.e. US\$ 8273, million was from external sources.

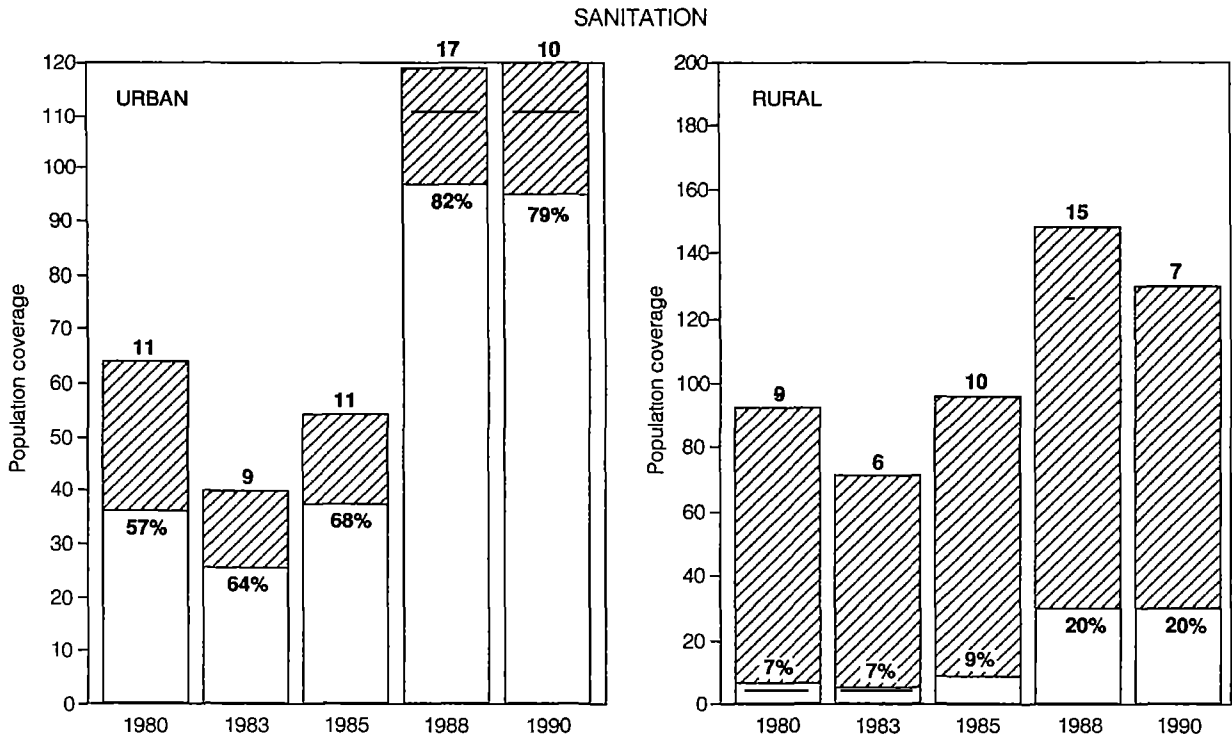
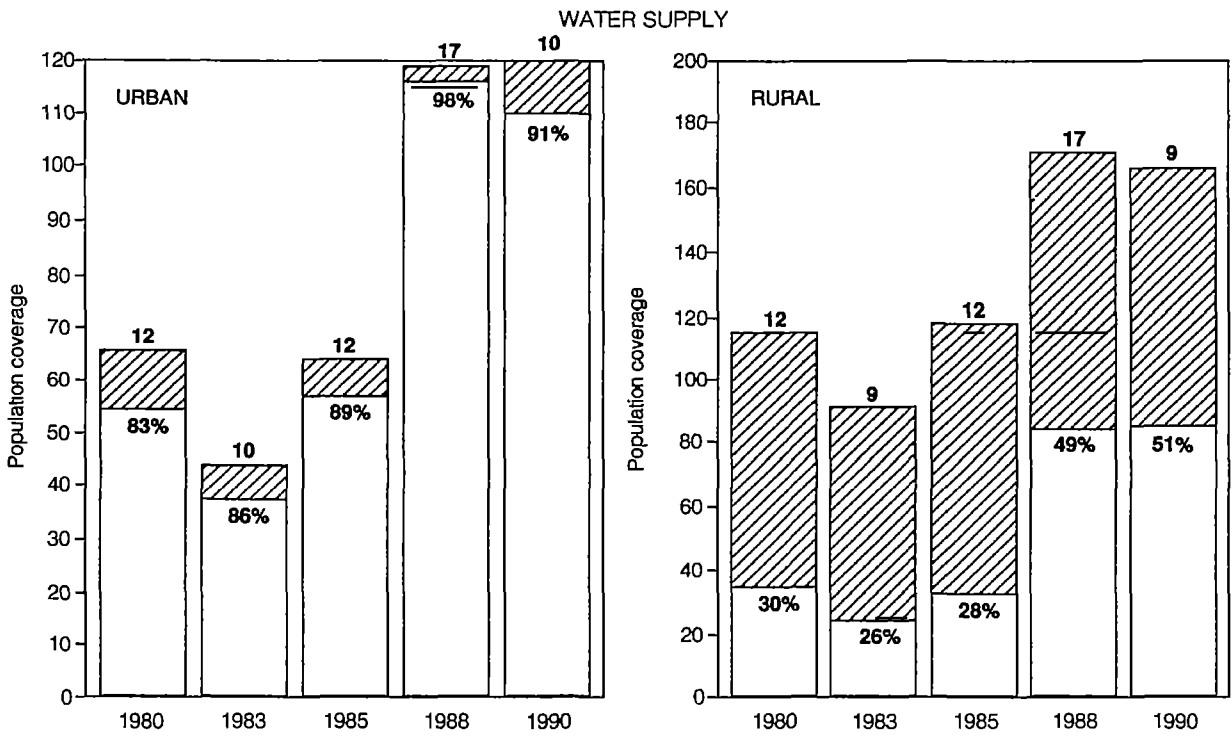
5.5 Decade approaches

Only one country of the Region, Afghanistan, reported implementing a programme which specifically addressed the problem of water supply and sanitation to the urban poor. Afghanistan also reported that in rural areas the population was always involved in the planning, construction and operation of their water supply and sanitation systems. The only other country to report such involvement was Iran where the level of involvement was much lower.

Three countries reported health education being included in primary school curriculum and in all cases all children received such training.

Two countries, Afghanistan and Pakistan, reported programmes specifically aimed at increasing women's participation in water supply and sanitation development, while four out of five reporting countries indicated that rural water supply and sanitation programmes were being implemented as components of a broader primary health care approach to Health for All.

Fig. 5.1 Eastern Mediterranean Region
Population coverage in 1980, 1983, 1985, 1988 & 1990 ^a



WHO 92657

WHO 92658

26 No. of countries reporting
 Total population (x 1 million)
 Population covered (x 1 million)

^a See Tables A.3.2.1 to A.3.2.4.

TABLE 5.1 - EASTERN MEDITERRANEAN REGION 1990
 BASIC INDICATORS: DEMOGRAPHIC, ECONOMIC, HEALTH

Country/territory	Population (000)	Population growth rate (%)	GNP per capita US \$	Life expectancy (years)	Infant mortality per 1000 live births	Waterborne diseases cases per 100 000	Population without safe water (%)	Population without sanitation (%)
Afghanistan	17 620	2.0	-	-	182	2 180	78	-
Bahrain	491	3.7	-	69.6	20	-	0	0
Cyprus	570	1.1	9 870	76.1	11	0	0	3
Egypt	54 000	1.3	-	60.0	85	-	10	50
Iraq	17 891	3.0	-	66.0	23	-	22	-
Iran	53 643	3.9	-	67.6	50	6 400	11	29
Jordan	3 453	3.6	1 025	66.0	43	4 800	1	0
Morocco	25 280	2.8	-	-	-	-	44	-
Pakistan	112 281	3.1	276	55.0	107	25 000	45	75
Qatar	389	4.2	-	75.1	24	521	-	-

TABLE 5.2 - EASTERN MEDITERRANEAN REGION 1990
 COVERAGE TARGETS (% of population) (2000) AND DECADE PLANS

Country/territory	Urban water supply		Urban sanitation		Rural		Status of Decade plan preparation	Year by which total coverage planned for or reached
	House connection	Stand-post	Sewer connection	By other means	Water supply	Sani-tation		
Bahrain	100	0	55	45	100	21	Yes	-
Cyprus	100	0	15	85	100	98	Partial	1991
Egypt	95	1	75	5	86	26	Partial	2020
Iraq	94	1	30	70	50	-	Yes	2020
Iran	90	10	7	93	100	100	Yes	2000
Jordan	100	0	100	0	100	100	Yes	2000
Morocco	76	24	50	50	50	50	Yes	-
Pakistan	100 ^a		60 ^a		50	25	Partial	-
Qatar	100	0	70	-	100	-	Yes/1982	-

(a) Breakdown not given.

TABLE 5.3 - EASTERN MEDITERRANEAN REGION 1990
1990 LEVELS OF SERVICE

Country/ territory	POPULATION WITH SERVICES											
	Population			Drinking water				Rural (000) (%)	Sanitation			Rural (000) (%)
	Total (000)	Urban (000) (%)	Rural (000) (%)	Total (000) (%)	By H.C. (000) (%)	By P.S. (000) (%)	Total (000) (%)		By S.C. (000) (%)	By other (000) (%)		
Afghanistan	17 220	2 950 (17)	14 270 (83)	1 186 (40)	590 (20)	596 (20)	2 684 (19)	385 (13)	105 (4)	280 (9)	- -	
Bahrain	490	490 (100)	0 (0)	490 (100)	490 (100)	0 0	0 0	490 (100)	275 (56)	215 (44)	0 0	
Cyprus	570	380 (67)	190 (33)	380 (100)	380 (100)	0 0	190 (100)	363 (96)	60 (16)	303 (80)	190 (100)	
Egypt	54 000	24 000 (44)	30 000 (56)	22 700 (95)	22 600 (94)	100 (0.4)	25 800 (86)	19 200 (80)	18 000 (75)	1 200 (5)	7 800 (26)	
Iraq	17 891	12 534 (70)	5 357 (30)	11 700 (93)	11 300 (90)	400 (3)	2 200 (41)	12 000 (96)	4 000 (32)	8 000 (64)	- -	
Iran	53 643	29 702 (55)	23 941 (45)	29 702 (100)	27 000 (91)	2 702 (9)	18 000 (75)	29 700 (100)	2 200 (7)	27 500 (93)	8 400 (35)	
Jordan	3 453	2 418 (70)	1 035 (30)	2 418 (100)	2 345 (97)	73 (3)	1 004 (97)	2 418 (100)	1 572 (65)	846 (35)	1 035 (100)	
Morocco	25 280	11 600 (46)	13 680 (54)	11 600 (100)	8 816 (76)	2 784 (24)	2 462 (18)	11 600 (100)	8 000 (69)	3 600 (31)	- -	
Pakistan	112 281	35 930 (32)	76 351 (68)	29 463 (82)	- -	- -	32 068 (42)	19 043 (53)	- -	- -	9 162 (12)	
Qatar	389	324 (83)	65 (17)	324 (100)	- -	- -	- -	324 (100)	248 (77)	76 (23)	55 (85)	
TOTAL	285 217	120 328 (42)	164 889 (58)	109 963 (91)	73 521 (87)	6 655 (8)	84 408 (51)	95 523 (79)	34 460 (41)	42 020 (50)	26 642 (20)	

TABLE 5.4 - EASTERN MEDITERRANEAN REGION 1990
PRESENT (1990-top line) AND PROJECTED (2000-bottom line) POPULATION COVERAGE (in thousands)

Country/territory	Urban population	Water supply		Sanitation		Rural population	Safe water	Adequate sanitation
		House connection	Stand-post	Sewer connection	By other means			
Bahrain	490	490	0	275	215	0	0	0
	582	582	0	321	261	0	0	0
Cyprus	380	380	0	60	303	190	190	190
	402	402	0	221	181	198	198	198
Egypt	24 000	22 600	100	18 000	1 200	30 000	25 800	7 800
	28 700	28 126	316	25 256	1 148	36 740	33 801	13 226
Iraq	12 534	11 300	400	4 000	8 000	5 357	2 200	-
	14 768	14 163	605	8 861	5 907	5 768	3 461	-
Iran	29 702	27 000	2 702	2 200	27 500	23 941	18 000	8 400
	49 500	44 550	4 950	23 760	20 295	29 000	29 000	-

TABLE 5.4A - EAST MEDITERRANEAN REGION 1990
DECADE SERVICE COVERAGE AND TARGETS

Sub-sector	Population	Population	1980		1990		1990	
	1980 (000)	1990 (000)	Coverage (000)	Coverage (%)	Coverage (000)	Coverage (%)	Target (000)	Target (%)
Urban water	113 145	173 130	93 910	83	157 548	91	171 399	99
Rural water	174 268	217 771	52 280	30	111 063	51	137 196	63
Urban sanitation	113 145	173 130	64 493	57	136 773	79	148 892	86
Rural sanitation	174 268	217 771	12 199	7	43 554	20	67 509	31

TABLE 5.5 - EASTERN MEDITERRANEAN REGION 1990
 STAFF RESOURCES 1990 (top line) AND PROJECTED REQUIREMENTS FOR 2000 (bottom line)

Country/ territory	Planning and management	Technical	Craftsmen artisanal	Admini- stration clerical	Unskilled workers	Total per million population	Community based workers (Yes/No)	HRD master plan (Yes/No)	Established training budget and is it sufficient (Yes/No)
Afghanistan	60 60	644 650	85 85	249 250	1 189 1 200	126 84	Yes	No	No
Bahrain	54 -	153 -	325 -	71 -	595 -	2 445 -	No	-	Yes/Yes
Cyprus	34 40	35 370	112 120	35 35	1 200 1 250	2 484 1 816	Yes	No	Yes/-
Egypt	- -	- -	- -	- -	- -	- -	No	Yes	Yes/No
Iraq	200 -	1 640 -	7 000 -	2 000 -	9 000 -	1 109 -	Yes	Yes	Yes/No
Iran	- -	- -	- -	- -	- -	- -	Yes	Yes	Yes/No
Jordan	225 -	1 220 -	2 124 -	1 286 -	1 732 -	1 908 -	No	Yes	Yes/No
Morocco	- -	- -	- -	- -	- -	- -	Yes	Yes	Yes/-
Qatar	4 4	108 108	2 2	8 9	94 94	555 558	Yes	No	No
Pakistan	- -	- -	- -	- -	- -	- -	No	No	Yes/No

TABLE 5.6 - EASTERN MEDITERRANEAN REGION 1990
UNIT COSTS OF CONSTRUCTION (US\$ PER CAPITA) AND OF WATER PRODUCTION (US\$/m3)

Country/territory	CONSTRUCTION						OPERATION		
	Urban water supply		Urban sanitation		Rural		Average cost of water production	Average water tariff	Progressive water tariff
	House connection	Stand-posts	Sewer connection	By other means	Water supply	Sani-tation			
Afghanistan	150	120	3 000	1 500	20	25	0.55	0.15	No
Bahrain	2 910	-	1 127	-	-	700	0.95	0.00	Yes
Cyprus	-	-	520	315	-	315	0.53	0.60	Yes
Egypt	182	74	121	27	90	18	0.10	0.05	Yes
Iraq	200	-	150	45	40	-	0.20	0.10	Some areas
Iran	250	150	200	90	200	60	0.20	0.20	Some areas
Morocco	-	-	-	-	-	-	0.25	0.33	Yes
Qatar	500	-	-	-	250	-	2.16	1.20	No
Jordan	15	-	71	-	26	86	1.35	0.36	Yes
Pakistan	750	300	850	-	-	-	-	-	-

TABLE 5.7 - EASTERN MEDITERRANEAN REGION 1990
INVESTMENT ESTIMATES 1981-1990

Country/ territory	Estimated cost to reach country decade targets US\$ millions	SECTOR INVESTMENTS (1981-1990)				Investment acceleration needed (fold)
		Total US\$ millions	Percentage of total development investment	External		
				US\$ millions	(%)	
Afghanistan	186.20	34.67	-	4.72	13.6	5.37
Bahrain	-	735.60	-	40.00	5.4	-
Cyprus	30.53	19.28	-	11.57	60.0	1.58
Egypt	-	216.00	-	-	-	-
Morocco	-	605.30	-	171.10	28.3	-
Qatar	97.10	-	-	-	-	-
Jordan ^a	-	15.71	-	6.71	42.7	-

(a) 1985-1990 only.

TABLE 5.8 - EASTERN MEDITERRANEAN REGION 1990
RANKING AND FREQUENCY OF CONSTRAINTS ^a

Constraints	No. of countries indicating constraint			Ranking index ^b
	Very severe	Severe	Moderate	
Funding limitations	3	3	2	17
Inadequate water resources	4	1	2	16
Operation and maintenance	3	3	1	16
Insufficiency of trained personnel (professional)	1	4	2	13
Insufficiency of trained personnel (sub-professional)	1	3	3	12
Inadequate cost-recovery framework	1	3	2	11
Intermittent water service	1	2	3	10
Inadequate or outmoded legal framework	-	3	3	9
Inappropriate institutional framework	-	2	5	9
Insufficient health education efforts	-	1	7	9
Inappropriate technology	-	2	4	8
Non-involvement of communities	-	2	4	8
Import restrictions	-	2	4	8
Logistics	-	2	4	8
Lack of definite government policy for sector	-	-	7	7
Insufficient knowledge of water resources	-	1	4	6
Lack of planning and design criteria	-	1	4	6

(a) Number of reporting countries 10

(b) Ranking index = 3 x (No. very severe) + 2 x (No. severe) + (No. moderate)

TABLE 5.9 - EASTERN MEDITERRANEAN REGION 1990
DECADE APPROACHES DURING 1990

Country/territory	Improved services for the urban poor			Percent of rural communities participating in improvements			Primary school children receiving health education (%)	Promotion of women's participation (Yes/No)	Water supply and sanitation in rural areas as part of PHC (Yes/No)
	Total urban poor population (000)	Population affected by improvements (%)	Urban water development fund used (%)	Planning (%)	Building (%)	Operation (%)			
Afghanistan	850	100	15	100	100	100	100	Yes	Yes
Bahrain	-	-	-	-	-	-	-	-	Yes
Iran	-	-	-	10	30	80	-	No	No
Jordan	-	-	-	-	-	-	100	No	Yes ^c
Morocco	-	-	-	-	-	-	100	-	-
Pakistan	-	-	-	-	-	-	-	Yes ^a	Yes ^b

(a) Ministry of Women Development has accorded priority to women involvement at Planning, Implementation and O & M stages. Also World Bank's Rural Water Supply, Sanitation and Hygiene Education projects endorses such an approach.

(b) Pakistan Rural Water Supply and Sanitation Project of World Bank. Asian Development Bank's sponsored Urban Water Supply Project.

(c) Water supply and sanitation programmes are integrated with other primary health care components in fringe areas such as Environmental health, mother and child care immunization programmes and health education.

6. WESTERN PACIFIC REGION

6.1 Socioeconomic and health situation

Twenty-seven countries submitted reports containing information on their socioeconomic and health situation. These countries included, at one end of the spectrum, China, the Region's most populous country, to Tokelau, an island state with less than 2000 inhabitants.

In the Region as a whole, during the Decade the population rose by 15%, the increase in urban population was 25% while an increase in rural areas was only 13%. It should be noted here that China contains approximately 75% of the Region's total population and therefore strongly influences the overall picture. The estimated population growth for the Region, excluding China during the ten years, was 24%, the increase in urban population was 43% while that in rural areas was only 13%. Clearly the main impact of population growth has been experienced in the urban areas.

In numerical terms the population of the Region has increased by an estimated 182 million, of which 139 million were in China.

All countries, except Papua New Guinea, reported a life expectancy of 50 years or above, while 11 out of 24 countries reported values of 70 years or over. The median value for life expectancy in the Region is 68.2 years. Infant mortality ranged from 5 to 117 per 1000 live births; the median value was 17.8. Incidences of waterborne diseases were reported by 15 countries with instances ranging from 0 in the case of Guam and Niue to 9200 per 100 000 in the Cook Islands; the median value is 1417.

Table 6.1 Comparison between socioeconomic and health situation

Median reported values		
	1980	1990
Population (000)	1 173 136	1 354 648
Population growth (%/year)	2.3	2.1
GNP (US\$ per capita)	914	1 300
Life expectancy (years)	65	68.2
Infant mortality (per 1000)	32	17.8
Waterborne diseases (per 100 000)	974	1 417

6.2 Targets and planning

Based on information provided by 27 countries and territories of the Region, considerable progress was made during the course of the Decade in expanding water supply and sanitation services.

- In raising urban water supply coverage from 81% to 91%, a total of 88 million people was served;
- In raising rural water supply coverage from 41 to 66%, a total of 301 million people was served;
- In maintaining urban sanitation service coverage at around 92%, a total of 60 million people was served.
- In raising rural sanitation service coverage from 63 to 76%, a total of 204 million people was served.

Table 6.2 Computed coverage values 1980-1990

	Urban water supply %	Rural water supply %	Urban sanitation %	Rural sanitation %
1980	81	41	93	63
1990	91	66	92	76

Water supply targets

To reach the Decade targets of 93% coverage for urban water supply, a total of 95 million people would have had to have been provided with water, i.e. an 8% increase in actual subsector performance.

Table 6.2.1 Urban water supply service coverage

	1980	1990 (coverage)	1990 Target calculated at start of Decade
Urban population estimate (millions)	267.83	335.51	335.51
Estimated % service coverage	81	91	93
Estimated population served or to be served (millions)	216.94	305.31	312.02

Table 6.2.2 Rural water supply service coverage

	1980	1990 (coverage)	1990 Target established at start of Decade
Rural population estimate (millions)	905.30	1019.14	1019.14
Estimated % service coverage	41	66	90
Estimated population served or to be served (millions)	371.17	672.63	917.23

Table 6.2.3 Overall (urban/rural) water supply service coverage

	1980	1990 (coverage)	1990 Target established at start of Decade
Total population estimate (millions)	1173.13	1354.65	1354.65
Estimated population served or to be served (millions)	588.11	977.94	1229.25
Estimated % service coverage	50	72	91

To reach the Decade targets of 90% service coverage for rural water supply, a total of 546 million additional people had to be served. This is 81% more than the additional 301 million actually served. This performance is significantly better than was estimated earlier in the Decade and the outlook for the 1990s should be optimistic.

Overall for the water supply goals to have been reached in rural and urban areas, a total of 641 million people would have had to have been served, compared to the 390 actually served, a shortfall in programme delivery of 39%.

Sanitation

In the case of urban sanitation, it appears that the Decade target of 90% coverage was reached; however, this represents only the modest objective of maintaining coverage steady at this level throughout the Decade. To do this, an additional 60 million urban residents had to be provided with services.

Table 6.2.4 Urban sanitation service coverage

	1980	1990	1990 Target established at start of Decade
Urban population estimate (millions)	267.83	335.51	335.51
Estimated % service coverage	93	92	90
Estimated population served or to be served (millions)	249.08	308.67	301.96

Table 6.2.5 Rural sanitation service coverage

	1980	1990	1990 Target established at start of Decade
Rural population estimate (millions)	905.30	1019.14	1019.14
Estimated service coverage	63	76	87
Estimated population served or to be served (millions)	570.34	774.55	886.65

Table 6.2.6 Overall (urban/rural) sanitation service coverage

	1980	1990	1990 Target established at start of Decade
Total population (millions)	1173.13	1354.65	1354.65
Estimated population served or to be served	819.42	1083.22	1188.61
Estimated % service coverage	70	80	88

To reach the rural sanitation goal of 87% service coverage, a total of 316 million additional people would have been served compared to the 204 million actually reached, i.e. the 112 million difference represented a shortfall in programme delivery of 35%.

Overall, during the course of the Decade in the Western Pacific Region, a total of 264 million people was additionally served with sanitation and the proportion of the population with access to such services rose from 70% to 80%. If the target of 88% coverage had been attained, a total of 369 million would have had to have been served. This represents a 28% shortfall in programme delivery.

6.3 Staff and training

At the end of the Decade, lack of trained professional personnel was considered to be the third most serious constraint to sector programme implementation, while lack of technical personnel was considered the fourth most serious difficulty. The most serious constraint was considered to be lack of operation and maintenance capacity, which relies heavily on and is therefore related to lack of adequately trained staff.

Of 22 reporting countries, only nine indicated that they were implementing plans for human resources development within the sector while 13 indicated that no such plans existed. In addition, eleven countries reported that budgetary provision had been made for training but only three, Hong Kong, Malaysia and Singapore, rated the amount as adequate.

In rural areas, 12 out of 19 countries (63%) indicated that community-based workers played a role in providing services. These countries included the most populous of the Region.

6.4 Financial resources

Funding limitations have continued to be perceived as the single most serious constraint to the implementation of water supply and sanitation programmes

Reporting of unit costs of service through the Decade has been rather inconsistent and therefore the results in Table 6.4.1 and projections of future costs in the 1990s must be considered in this light.

Fourteen countries provided information on the annual rate of sector investment and the proportion from external sources. The weighted average for the proportion of funds from external sources was 7%. Weighted average was used here, of necessity, since the more populous countries had significantly lower dependency on external funding than the smaller Island countries. It should be noted here that dependence on external sources by these small countries range from 80% to 100%.

Table 6.4.1 Unit cost of water supply and sanitation facilities (US\$ per capita)

	1980	1985	1990	Average
(a) Urban water supply by house connection	75	96	225 v	132
(b) Urban water supply by stand post	91*	42*	107 v	80
(c) Rural water supply	26	44	87 v	52
(d) Urban sanitation by sewer	344**	444**	600 v	463
(e) Urban sanitation by other means	50	73	155 v	93
(f) Rural sanitation	5	12	39 v	19

* average value because only three countries reported

** average considered more representative

Table 6.4.2 Breakdown of population served 1981-1990 (during the IDWSSD)

	Number served 1980	Number served 1990	Number additionally served
Urban water supply	216.94	305.31	88.37
Urban sanitation	249.08	308.67	59.59
Rural water supply	371.17	672.63	301.46
Rural sanitation	570.34	774.55	204.21

Based on the number of people served and the fact that 84% of the urban population served with water was through a house connection and 40% of the urban population with access to appropriate sanitation was connected to a public sewer, the following calculation of investment during the Decade has been made.

Table 6.4.3 Estimated water supply and sanitation investment 1981-1990

Sub-sector	Number served (millions)	Unit costs US\$	Total investment US\$ (millions)
Urban water (HC)	74.2	132	9794.4
Urban water (SP)	14.1	80	1128.0
Urban sanitation (SC)	23.8	463	11019.4
Urban sanitation (OM)	35.8	93	3329.4
Rural water	301.5	52	15678.0
Rural sanitation	204.2	19	3879.8
Total			44829.0

According to current sector investment patterns, of the US\$ 44 829 million invested in new capital construction during the IDWSSD in the Western Asia Region, US\$ 3138 were from external sources. The weighted average of funding for external sources was 7%.

6.5 Decade approaches

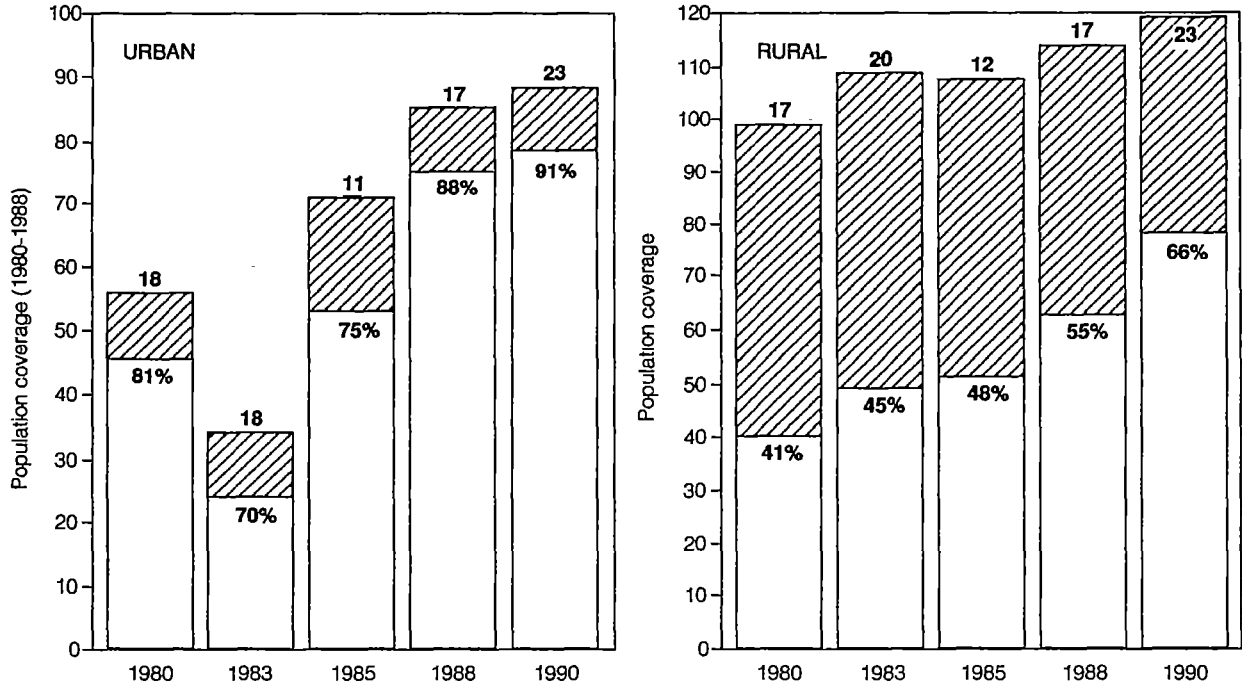
The Western Pacific is entering the 1990s as the Region with the highest reported involvement of communities in the planning, construction and operation of rural water supply and sanitation systems. Out of 13 countries providing data, ten reported full community involvement in planning, 12 with over 95% involvement in construction and 8 with 100% involvement in operation of systems.

Reporting on special programmes addressing the water supply and sanitation problems of the urban poor was limited to three countries, however the proportion of the urban poor affected was extremely low.

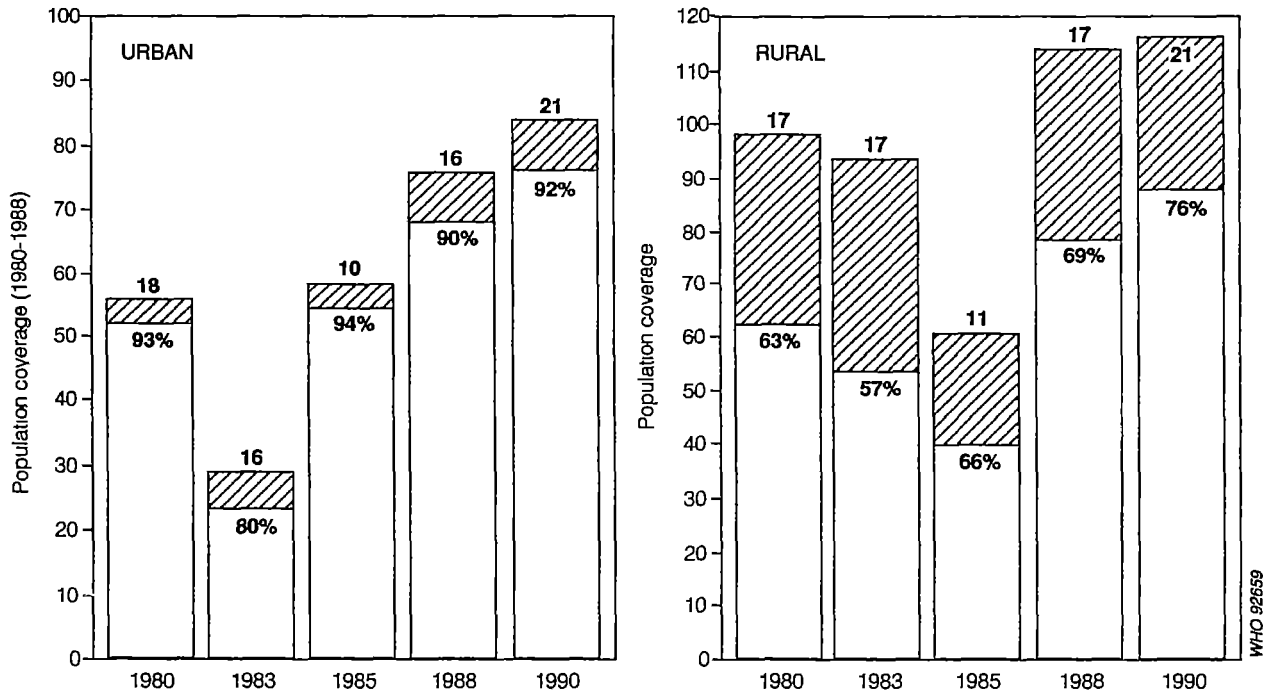
Health education was on the primary school curricula in all schools in 11 of the 14 reporting countries, while 12 out of a total of 19 countries reported positive action to promote increased women's participation, and 12 out of 20 reporting countries indicated that rural water supply projects were being implemented as components of national PHC programmes.

Fig. 6.1 Western Pacific Region
Population coverage in 1980, 1983, 1985, 1988 & 1990 ^a

WATER SUPPLY



SANITATION



WHO 92658

WHO 92658

26 No. of countries reporting

 Total population (x 1 million)
 Population covered (x 1 million)

^a See Tables A 3.2.1 to A.3.2.4

TABLE 6.1 - WESTERN PACIFIC REGION 1990
 BASIC INDICATORS: DEMOGRAPHIC, ECONOMIC, HEALTH

Country/territory	Population (000)	Population growth rate (%)	GNP per capita (US \$)	Life expectancy (years)	Infant mortality per 1000 live births	Waterborne diseases cases per 100 000	Population without safe water (%)	Population without sanitation (%)
Australia	17 280	-	20 962	76.0	8	-	0	0
China	1 133 683	2.0	295	-	-	-	-	-
Cook Islands	18	-	-	-	23	9 200	0	0
Fiji	764	1.9	1 300	74.0	20	-	21	25
French Polynesia	189	2.6	125	68.4	16	3 071	37	3
Guam	133	-	-	72.3	10	0	6	-
Hong Kong	5 801	0.7	10 916	77.2	7	43	0	13
Japan	123 457	-	23 200	78.0	5	-	7	-
Kiribati	70	2.2	388	52.0	87	3 500	27	36
Korea, Republic of	42 380	-	4 968	70.0	12	-	7	49
Lao P.D.R.	4 170	2.9	180	52.0	117	-	72	89
Macao	452	3.3	8 126	79.1	10	-	0	-
Malaysia	18 010	2.5	1 627	71.3	14	30	22	6
Marshall Islands	46	4.3	1 284	61.7	26	76	26	26
Micronesia	101	2.9	1 447	63.0	15	-	48	38
New Zealand	3 385	0.5	10 825	74.3	11	-	3	6
North Mariana Islands	43	-	-	68.0	13	-	8	2
Niue	2	1.6	-	65.5	19	0	0	0
Palau	14	0.7	-	70.0	21	4 151	1	4
Papua New Guinea	3 740	2.1	924	49.6	72	2 320	67	-
Philippines	61 480	2.3	658	64.6	20	1 655	16	21
Samoa	165	0.4	-	64.0	28	83	18	6
Singapore	2 717	1.2	9 426	74.2	7	-	0	1
Solomon Islands	318	3.6	138	60.7	43	1 417	39	88
Tokelau	2	1.5	2 075	-	54	917	10	75
Tonga	99	2.0	432	63.0	11	2 531	4	18
Vietnam	65 000	2.1	200	65.0	49	-	64	88

TABLE 6.2 - WESTERN PACIFIC REGION 1990
 COVERAGE TARGETS (% of population) (2000) AND DECADE PLANS

Country/territory	Urban water supply		Urban sanitation		Rural		Status of decade plan preparation
	House connection	Stand-post	Sewer connection	By other means	Water supply	Sanitation	
China		95 ^a	20	70	90	80	Yes/1990
Cook Islands	100	0	0	100	100	95	No
Fiji	100	0	-	-	100	100	No
French Polynesia	-	-	-	-	-	-	Yes
Hong Kong	100	0	100	0	100	100	-
Kiribati	100	0	90	10	100	90	Yes/1982
Korea, Republic of	97	3	70	30	90	50	Yes
Lao P.D.R.	60	20	10	70	75	40	Yes/1982
Macao	100	0	-	-	-	-	Yes
Malaysia	100	0		100 ^a	90	100	Yes
Micronesia	-	-	-	-	-	-	No
North Mariana Islands	100	0	90	5	100	95	-
Palau	100	0	100	0	100	100	No
Papua New Guinea	-	-	-	-	-	-	Yes/1991
Philippines		100 ^a		100 ^a	100	82	Yes/1987
Samoa	100	0	50	50	100	100	No
Singapore	100	0	100	0	-	-	Yes/1980
Solomon Islands	96	3	10	90	87	100	Yes
Tokelau	-	-	-	-	100	100	Yes
Tonga	93	0	0	92	100	85	Yes/1990
Vietnam	70	20		50 ^a	100	100	-

(a) Breakdown not given.

TABLE 6.3 - WESTERN PACIFIC REGION 1990 -- 1990 LEVELS OF SERVICE

Country/territory	POPULATION WITH SERVICES									
	Population			Drinking water				Sanitation		
	Total (000)	Urban (000) (%)	Rural (000) (%)	Urban		Rural	Total (000) (%)	By S.C. (000) (%)	By other (000) (%)	Rural (000) (%)
				Total (000) (%)	By H.C. (000) (%)	By P.S. (000) (%)				
Australia	17 280	14 318 (83)	2 962 (17)	14 318 (100)	-	-	2 962 (100)	14 318 (100)	-	2 962 (100)
China	1 133 683	211 885 (19)	921 797 (81)	184 340 (87)	-	-	624 020 (68)	211 885 (100)	-	750 000 (81)
Cook Islands	18	10 (56)	8 (44)	10 (100)	10 (100)	0 (0)	8 (100)	10 (100)	0 (0)	10 (100)
Fiji	764	296 (39)	468 (61)	284 (96)	284 (96)	0 (0)	322 (69)	269 (91)	114 (39)	303 (65)
French Polynesia	189	104 (55)	85 (45)	104 (100)	103 (99)	1 (1)	15 (18)	102 (98)	0 (0)	102 (98)
Guam	133	120 (90)	13 (10)	-	35 (29)	-	13 (100)	-	-	-
Hong Kong	5 801	5 517 (95)	284 (5)	5 517 (100)	-	-	272 (96)	4 965 (90)	-	142 (50)
Japan	123 457	95 037 (77)	28 420 (23)	95 037 (100)	-	-	24 157 (85)	-	-	-
Kiribati	70	25 (36)	45 (64)	23 (91)	22 (87)	1 (4)	28 (63)	23 (91)	20 (79)	22 (49)
Korea, Republic of	42 380	29 984 (71)	12 396 (29)	29 984 (100)	27 885 (93)	2 099 (7)	9 421 (76)	20 204 (67)	13 465 (45)	1 437 (22)
Lao P.D.R.	4 170	626 (15)	3 544 (85)	295 (47)	268 (43)	27 (4)	886 (25)	188 (30)	0 (0)	284 (8)
Macao	452	452 (100)	0 (0)	453 (100)	453 (100)	0 (0)	-	-	-	-
Malaysia	18 010	7 318 (41)	10 693 (59)	7 025 (96)	-	-	7 090 (66)	6 857 (94)	-	10 019 (94)
Marshall Islands	46	24 (52)	22 (48)	24 (100)	22 (93)	2 (8)	10 (45)	24 (100)	18 (75)	10 (25)
Micronesia	101	29 (29)	71 (71)	-	26 (88)	-	27 (38)	29 (99)	10 (34)	33 (65)
New Zealand	3 385	2 837 (84)	548 (16)	2 837 (100)	2 837 (100)	0 (0)	448 (82)	-	2 695 (95)	480 (88)
Niue	2	0 (0)	2 (100)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	2 (100)
North Mariana Islands	44	40 (92)	4 (8)	40 (100)	37 (93)	3 (8)	0 (0)	40 (100)	30 (75)	3 (25)
Palau	14	11 (75)	4 (25)	11 (100)	11 (99)	0.13 (1)	3 (97)	10 (95)	6 (56)	4 (39)
Papua New Guinea	3 740	650 (17)	3 090 (83)	610 (94)	300 (46)	310 (48)	618 (20)	370 (57)	100 (15)	270 (42)
Philippines	61 480	26 245 (43)	35 235 (57)	24 408 (93)	17 134 (65)	7 349 (28)	25 444 (72)	20 734 (79)	355 (1)	22 322 (78)
Samoa	165	35 (21)	130 (79)	35 (100)	35 (100)	0 (0)	100 (77)	35 (100)	0 (0)	120 (92)
Singapore	2 717	2 717 (100)	0 (0)	2 717 (100)	2 715 (100)	2 (0.1)	-	2 695 (99)	2 613 (96)	82 (3)
Solomon Islands	318	41 (13)	277 (87)	34 (82)	31 (76)	2 (6)	159 (58)	30 (73)	9 (22)	7 (51)
Tokelau	2	0 (0)	2 (100)	-	-	-	2 (90)	-	-	0 (0)
Tonga	99	39 (39)	60 (61)	36 (92)	36 (92)	0 (0)	59 (98)	34 (88)	0 (0)	47 (88)
Vietnam	65 000	12 000 (18)	53 000 (82)	5 640 (47)	-	-	17 490 (33)	2 760 (23)	-	5 300 (10)
TOTAL	1 483 519	410 360 (28)	1 073 159 (72)	373 781 (91)	52 244 (81)	9 796 (15)	713 556 (66)	285 581 (92)	19 435 (31)	793 585 (76)
TOTAL (Excl. China)	254 799	198 475 (78)	122 942 (48)	189 441 (96)	52 244 (81)	9 796 (15)	65 379 (53)	73 696 (73)	19 435 (31)	43 585 (48)

TABLE 6.4 - WESTERN PACIFIC REGION 1990
PRESENT (1990-top line) AND PROJECTED (2000-bottom line) POPULATION COVERAGE (in thousands)

Country/territory	Urban population	Water supply		Sanitation		Rural population	Safe water	Adequate sanitation
		House connection	Stand-post	Sewer connection	By other means			
Brunie	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
China	211 885		184 340*	-	-	921 797	624 020	750 000
	322 125		306 019*		289 913*	963 769	867 392	771 015
Cook Islands	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Fiji	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Guam	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Hong Kong	5 517		5 517*		4 965*	284	272	142
	6 088		6 088*		6 088*	361	361	361
Kiribati	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Korea, Republic of	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Lao P.D.R.	626	268	27	0	188	3 544	886	284
	813	610	203	41	650	4 604	3 683	1 151
Macao	452	452	0	-	-	0	0	0
	609	609	0	-	-	0	0	0
Malaysia	7 318		7 025*		6 857*	10 693	7 090	10 019
	9 262	9 262	0		9 296*	13 551	12 196	13 551
Papua New Guinea	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Philippines	26 245	17 134	7 221	355	20 368	35 235	25 444	22 322
	36 264		36 264*		36 264*	38 960	38 960	32 052
Samoa	35	35	0	0	35	130	100	120
	42	42	0	21	21	125	125	125
Singapore	2 717	2 715	2	2 613	0	0	0	0
	2 995	2 994	0	2 995	0	0	0	0
Solomon Islands	41	31	2	9	21	277	159	7
	59	57	2	6	53	402	350	402
Tokelau	0	0	0	0	0	2	2	0
	0	0	0	0	0	2	2	2
Vanuatu	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Vietnam	12 000		5 640*		2 760*	53 000	17 490	6 500
	15 000	12 750	1 800		7 500*	65 000	65 000	65 000

* Breakdown not given

TABLE 6.4A - WESTERN PACIFIC REGION 1990
 DECADE SERVICE COVERAGE AND TARGETS.

Sub-sector	Population	Population	1980 Coverage		1990 Coverage		1990 Target	
	1980 (000)	1990 (000)	(000)	(%)	(000)	(%)	(000)	(%)
Urban water	267 834	335 511	216 946	81	305 315	91	312 025	93
Rural water	905 302	1 019 137	371 174	41	672 630	66	917 223	90
Urban sanitation	267 834	335 511	249 086	93	308 670	92	301 960	90
Rural sanitation	905 302	1 019 137	570 340	63	774 544	76	886 649	87

TABLE 6.5 - WESTERN PACIFIC REGION 1990
STAFF RESOURCES 1990 (top line) AND PROJECTED REQUIREMENTS FOR 2000 (bottom line)

Country/territory	Planning and management	Technical	Craftsmen artisanal	Admini- stration clerical	Unskilled workers	Total per million population	Community based workers (Yes/No)	HRD master plan (Yes/No)	Established training budget and is it sufficient (Yes/No)
China	-	-	-	-	-	-	Yes	Yes	Yes/No
Cook Islands	2	20	35	5	40	5 667	No	No	No
Fiji	5	30	200	100	600	1 224	Yes	No	No
French Polynesia	-	-	-	-	-	-	Yes	No	No
Guam	23	28	232	106	0	2 925	-	Yes	Yes/No
Hong Kong	72	1 169	2 033	901	992	891	No	Yes	Yes/Yes
Kiribati	2	8	0	1	2	186	Yes	Yes	No
Korea, Republic of	253	2 467	4 886	1 634	6 160	363	Yes	Yes	Yes/No
Lao P.D.R.	5	25	30	10	36	25	Yes	No	No
Malaysia	53	250	309	39	366	188	Yes	Yes	Yes/Yes
Micronesia	12	12	40	20	20	1 034	No	No	No
New Zealand	15	15	60	25	40	1 192	-	No	Yes/No
Niue	1	4	-	-	2	2 876	Yes	Yes	Yes/No
North Mariana Islands	2	11	25	3	21	1 342	No	No	No
Papua New Guinea ^a	35	100	100	100	150	746	-	-	-
Palau	7	14	30	7	12	19 548	No	No	No
Philippines	25	3 229	-	10	-	53	Yes	Yes	Yes/No
Samoa	3	7	50	10	150	1 333	Yes	No	No
Singapore	15	812	395	85	660	724	No	No	Yes/Yes
Solomon Islands	10	40	4	2	107	513	No	Yes	Yes/No
Tokelau	-	-	-	-	-	-	Yes	No	No
Tonga	9	42	0	48	0	1 004	Yes	No	Yes/No
Vietnam	10	45	0	58	0	1 032	-	No	No

(a) Urban water only

TABLE 6.6 - WESTERN PACIFIC REGION 1990
UNIT COSTS OF CONSTRUCTION (US\$ PER CAPITA) AND OF WATER PRODUCTION (US\$/m3)

Country/territory	CONSTRUCTION						OPERATION		
	Urban water supply		Urban sanitation		Rural		Average cost of water production	Average water tariff	Progressive water tariff
	House connection	Stand posts	Sewer connection	By other means	water supply	sanitation			
China ^b	-	-	-	-	-	-	-	0.07	-
Cook Islands	125	-	1 300	150	100	50	-	0.00	No
Fiji	-	-	-	-	300	35	0.28 ^a	0.09 ^a	Urban Yes
Guam	-	-	-	-	-	-	-	0.13 ^b	No
Kiribati	250	40	300	160	30	30	1.2 ^a	1 ^a	No
Korea, Republic of	-	-	-	-	-	-	-	0.27	Yes
Lao P.D.R.	75	110	-	275	30	18	-	-	Urban Yes
Macao	20	-	-	-	-	-	0.33	0.39	No
Malaysia	370	-	185	-	60	20	0.08	0.20	Some urban areas
Marshall Islands	300	-	800	120	30	10	-	-	Some urban areas
Micronesia	280	-	400	50	150	40	0.50	0.25	No
New Zealand	500	-	600	-	600	-	0.30	0.15	Urban Yes
Niue	-	-	-	-	-	-	8.00	0.00	No
North Mariana Islands	-	-	1 000	600	-	600	0.38	0.13	Some areas
Palau	200	-	-	300	500	400	0.40	0.10	No
Papua New Guinea	500	310	600	400	10	8	0.55	0.45	Some urban areas
Philippines	27	13	-	119	12	39	0.15	0.16	Some urban areas
Samoa	500	-	-	100	200	80	0.13	0.04	No
Singapore	51	-	-	-	-	-	0.27	0.43	Yes
Solomon Islands	-	107	-	43	64	13	0.39	0.25	Urban areas
Tokelau	-	-	-	-	250	75	-	-	-
Tonga	6	-	-	170	87	170	0.93	1.70	Urban Yes
Vietnam	-	-	-	-	-	-	-	0.04	Some areas

(a) In urban areas

(b) Rural only

TABLE 6.7 - WESTERN PACIFIC REGION 1990
INVESTMENT ESTIMATES 1981-1990

Country/territory	Estimated cost to reach country decade targets US\$ millions	Sector investments (1981-1990)			Investment acceleration needed (fold)	
		Total US\$ millions	Percentage of total development investment	External		
				US\$ millions		(%)
China ^d	-	1 708 445	-	85 422.0	5	-
Cook Islands	-	-	1.60	-	-	-
Fiji	-	3 990.0	-	-	-	-
Guam	-	54.6	-	44.0	81	-
Hong Kong ^a	1 912.0	767.3	-	0.0	0	2.49
Kiribati	2.6	11.1	6.00	11.1	100	0.23
Korea, Republic of	7 865.0	9 352.0	0.71	1 317.2	14	0.84
Lao P.D.R. ^a	-	10.4	-	4.1	40	0.00
Macao ^c	32.0	-	-	-	-	-
Malaysia ^a	1 261.3	1 690.2	-	-	-	0.75
Marshall Islands	-	17.3	1.00	17.2	100	-
Niue	-	0.8	10.00	0.5	56	-
Palau	-	0.0	1.00	0.0	100	-
Papua New Guinea ^a	-	57.5	-	23.0	40	-
Philippines	1 912.3	552.1	9.95	172.8	31	3.46
Samoa ^b	-	33.5	2.34	27.5	82	-
Singapore ^c	265.7	631.0	-	-	-	0.42
Solomon Islands	26.2	5.5	2.66	4.4	80	4.76
Tokelau	0.6	0.8	3.50	0.4	48	0.71
Tonga	1.4	-	-	-	-	-
Vietnam	2 150.0	-	-	-	-	-

(a) Urban only
(b) Water supply only
(c) Urban water only

(d) Rural water only
(e) Water only

1985-1990 Only

TABLE 6.8 - WESTERN PACIFIC REGION 1990
RANKING AND FREQUENCY OF CONSTRAINTS ^a

Constraints	No. of countries indicating constraint			Ranking index ^b
	Very severe	Severe	Moderate	
Operation & maintenance	8	8	2	42
Funding limitations	9	4	3	38
Insufficiency of trained personnel (professional)	5	8	4	35
Insufficiency of trained personnel (sub-professional)	4	8	4	32
Inadequate cost-recovery framework	5	6	4	31
Inadequate water resources	3	5	7	26
Logistics	2	5	9	25
Intermittent water service	1	6	7	22
Inadequate or outmoded legal framework	-	5	10	20
Inappropriate institutional framework	-	5	10	20
Insufficient knowledge of water resources	-	5	9	19
Lack of planning and design criteria	-	5	8	18
Lack of definite government policy for sector	1	2	10	17
Insufficient health education efforts	-	5	6	16
Inappropriate technology	-	3	9	15
Non-involvement of communities	1	1	9	14
Import restrictions	-	1	7	9
Land tenure (Samoa) (Cook Islands)	1	-	-	
Transport (Kiribati) (Fiji)	-	-	-	

(a) Number of reporting countries 27

(b) Ranking index = 3 x (No. very severe) + 2 x (No. severe) + (No. moderate)

TABLE 6.9 - WESTERN PACIFIC REGION 1990 -- DECADE APPROACHES DURING 1981-1990

Country/territory	Improved services for the urban poor			Percent of rural communities participating in improvements			Primary school children receiving health education (%)	Promotion of women's participation (Yes/No)	Water supply and sanitation in rural areas as part of PHC (Yes/No)
	Total urban poor population (000)	Population affected by improvements (%)	Urban water development fund used (%)	Planning (%)	Building (%)	Operation (%)			
China	-	-	-	-	-	-	-	-	Yes ^a
Cook Islands	0	-	-	100	100	15	100	No	No
Fiji	0	-	-	100	100	100	100	No	No
Guam	-	-	-	-	-	-	-	Yes ^b	-
Kiribati	0	-	-	100	100	100	100	Yes ^c	Yes ^d
Lao P.D.R.	-	16	4	75	95	95	-	Yes ^e	Yes
Macao	-	-	-	-	-	-	-	-	-
Malaysia	458	-	-	100	100	100	-	Yes ^f	Yes ^g
Marshall Islands	0	-	-	100	100	100	100	No	No
Micronesia	0	-	-	100	100	100	100	No	No
New Zealand	-	-	-	-	-	-	100	No	No
Niue	-	-	-	-	-	-	-	Yes ^h	Yes ⁱ
North Mariana Islands	-	-	-	-	-	-	100	Yes	Yes
Palau	0	-	-	100	50	100	100	No	No
Papua New Guinea	-	-	-	-	-	-	-	-	Yes ^j
Philippines	-	-	-	90	80	80	98	Yes ^k	Yes ^l
Samoa	0	-	-	100	50	10	100	Yes ^m	No
Solomon Islands	8	0	1	100	100	31	4	Yes ⁿ	Yes ^o
Tokelau	-	-	-	-	100	100	100	Yes ^p	Yes ^q
Tonga	0	-	-	100	100	58	100	Yes ^r	Yes
Vietnam	-	-	-	-	100	100	50	Yes ^t	Yes ^u

(a) Under World Bank loan project 4% of the proceeds are to be allocated to the health education programme.

(b) The current second in command at PUAG is a female.

(c) Involvement of women's groups in planning & construction of water & sanitation projects in rural areas.

(d) Village welfare groups decide on what type of project they would under take according to their priorities.

(e) L'union des femmes Lao est tres active.

(f) The formation of the National Policy for Women (NPW) in 1989 reflects the Government's commitment towards optimizing the potential of women in the social and economic development of the nation./fs

(g) In the attainment of health for All by the year 2000 the strategies and programmes undertaken included more equitable distribution of efficient health services and facilities, as well as effective collaboration between health and other health-related programmes.

(h) Women engineer now designing WYR Water Project (Water Resources Assessment and Development in Niue).

(i) Protect the quality of ground water which is the main source of supply.

(j) Establishment of village development committees.

(k) An agreement was reached between lending agencies and the government that women have equal access to membership and leadership noted in Barangay Waterworks and Sanitation Association.

(l) Child Survival programme of department of health.

(m) Spring protection programme.

(n) N.S.O. involvement specifically in the operation and maintenance areas.

(o) Projects currently being prepared for WS & S for the peri-urban areas of Honiara.

(p) Setting up of National Council of Women to enhance role in community.

(q) Effort to improve living conditions through government subsidy lead to improved water reservoirs which bring about possibility of improved sanitation facilities.

(r) Women's Committees and Village Water Committees.

(s) Water Supply and Sanitation and M.C.H. and family planning.

(t) Cooperation with women union in health education. Use women's newspaper as educational materials for water supply and sanitation.

(u) Other primary health projects (immunization projects, nutrition projects control of deauuhoe, etc.) are implemented at the same areas as projects of water supply and sanitation.

