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EVALUATION OF THE INTERNATIONAL DRINKING WATER SUPPLY AND SANITATION DECADE AND THRUST OF ACTION

CONTENTS

1. HISTORICAL PERSPECTIVE

Water Supply and Sanitation has been a major WHO programme in the South-East Asia Region since the beginning. Adequate supply of safe water and provision of basic sanitation facilities are essential elements of PHC. The implementation of Health for All by the Year 2000, as endorsed by the Thirty-second World Health Assembly in 1979, was therefore based on the PHC elements. It is in this context that, on 10 November 1980, the UN General Assembly proclaimed the period 1981-1990 as the International Drinking Water Supply and Sanitation Decade. The main objective of the Decade was to stimulate and accelerate national water supply and sanitation (WS&S) programmes so that the unserved populations in rural and urban areas have access to appropriate WS&S facilities thereby preventing exposure to enteric and parasitic infections and thus improve their health and social and economic status. The governments were therefore urged to set targets to provide all their people with safe water and basic sanitation by 1990. International agencies such as UNDP, WHO, UNICEF, World Bank and UNDTCD were urged to supplement government efforts with financial resources, technical know-how and through better coordination of their aid programmes. WHO thereafter developed decade approaches and strategies which were subsequently included in the Seventh General Programme of Work. The Decade approaches lay emphasis on the complementarity of water supply and sanitation, giving precedence to unserved and underserved rural and urban populations, promoting self-reliance, self-sustaining action, community involvement in all stages of project implementation, association of community water supply and sanitation (CWS&S) with programmes of related sectors, particularly PHC, socially acceptable and inexpensive systems and using technologies appropriate to specific projects.

Nine out of the eleven countries of the Region reviewed the CWS&S status, developed strategies, prepared work plans and set their targets for 1990, in the Decade accelerated programme management and implementation. With the end of the Decade being very near, it is time to assess the progress, identify the constraints and determine future actions required between 1988 and 1990 and beyond, maintaining the tempo of serving the unserved population.

2. WHO SUPPORT TO MEMBER STATES

WHO support to Member States of this region has been undertaken as a component of the strategy for Health for All through primary health care in accordance with the strategy for WHO participation in IDWSSD. The WHO strategy for the Decade identified six priority areas for technical cooperation and support to Member States, viz., promotion of the Decade, national institutional development, development of human resources, information exchange and technology development, mobilization of financial resources and coordination with other agencies. The Decade activities supported by WHO encompass these six prioirity areas.

2.1 Decade Review by the Regional Committee and the World Health Assembly

In all the countries of the South-East Asia Region, except DPRK and Mongolia the WS&S Decade began with a vast backlog of work to be done. Therefore, immediately after the launching of the Decade, the Regional Committee for South-East Asia, by its resolutions SEA/RC32/R4 and SEA/RC33/R9, drew the attention of all Member States to areas of priority action. Subsequently, guidelines were provided to the WHO Representatives to operationalize Decade approaches and strategies at the country level. The progress on the water supply and sanitation situation was continuously reviewed and, at the end of 1983, reported to the Thirty-seventh session of the Regional Committee. The situation was again reviewed at the end of 1985. At the global level, the South-East Asia Regional Office participated in an inter-regional meeting held at Lima, Peru, for monitoring and evaluating the strategy for WHO participation in the future.

The Director-General, WHO, submitted a mid-Decade report to the Thirty-ninth World Health Assembly in 1986. The Assembly, after considering the DG's report, passed a resolution (WHA39.20) reaffirming its earlier recommendation (resolution WHA36.13) that safe water supply and sanitation is essential for the success of the global strategy for Health for All and noted that the progress in the Decade had fallen short of the expectations in spite of the considerable efforts of Member States.

It noted that if the present trend continued, many countries will not be able to meet the target that they had set and therefore endorsed the Director-General's recommendation for more active collaboration of national health authorities in WS&S programmes through intersectoral collaboration and continued effective coordination of external support agencies.

2.2 Coordination at National Level

National Action Committees were set up in nine of the eleven countries of the Region to ensure more effective intersectoral and inter-agency cooperation for coordinated planning and exchange of information and widespread adoption of cost-effective technologies, strategies and community-based approaches, knowledge and experiences.

2.3 Establishment of National Plans and Targets for the Decade

WHO's efforts helped in the development of national Decade plans with targets. The sector performance was reviewed by organizing Decade review meetings at the country level wherein constraints and action points were identifed and revised, feasible targets fixed.

2.4 Resource Mobilization

In order to accelerate progress, resource mobilization and donor consultations were held identifying the priority projects and needs for hardware and software support. In this context, the Regional Office also participated in the Asia Regional External Support Consultation in Manila

in 1985, cosponsored by ADB and BMZ. The meeting reviewed the WS&S sector within the socio-economic context of the Asian region. In this meeting, country resource mobilization profiles of India, Indonesia, Nepal and Sri Lanka were presented. Subsequently, resource mobilization studies, project identification and donor government consultations were held in Nepal and Indonesia while preparations were made for similar activities in Thailand and Maldives.

2.5 Institutional Development

Institutional development consultation was held in the Regional Office in 1985 to identify problems and issues of institutional nature for effective institutional realignment. Having achieved success in this regard, guidelines in community water supply and sanitation were developed identifying six steps at the project level for ensuring success in CWS&S projects. These guidelines were reviewed at the country level with a view to readjusting existing planning and implementation procedures and country specific guidelines were prepared for implementation in Indonesia, Maldives, Nepal, Sri Lanka and Thailand. These guidelines, along with slide and sound shows for the training and orientation of national senior staff and decision-makers, received wide acceptance among governments, international agencies, nongovernmental organizations and donors. Management information system training seminar workshops were conducted in India, Nepal, Bangladesh, Thailand and Sri Lanka to improve institutional performance.

2.6 Appropriate Low-Cost Technology

With a view to promoting the development of simple, low-cost technology, a number of operational research projects were taken up in Indonesia, Sri Lanka, Thailand, Bangladesh and India. They were identified by senior sector officials to develop approaches and solutions to operational problems for large-scale implementation. A number of case studies were documented to disseminate successes and failures for better implementation.

2.7 Community Participation

Special efforts have been made to promote health education, community participation, including that of women in rural schemes, particularly in Indonesia, Thailand, Sri Lanka, Nepal and Burma. Case studies were conducted and experiences documented and disseminated. As water is essentially a community priority, such studies were found to be an effective entry point for community participation in helping to improve the overall quality of life.

2.8 Water Quality Improvement

With a view to developing and strengthening water quality surveillance and improving the capability of ministries of health, training workshops were conducted in Bangladesh, Nepal, Sri Lanka and Thailand and assistance was provided to strengthen laboratory facilities.

2.9 Manpower Development

To tide over the severe manpower problem, extensive training activities were undertaken for sub-professionals at village, subdistrict and provincial levels through classroom and on-the-job training in most countries with stress on better operation and maintenance through community participation. Training in health education and complementarity of sanitation are being emphasized and their feasibility demonstrated in UNDP/WHO-assisted projects in Indonesia and Nepal. Study tours and courses at academic institutions were conducted to motivate and improve the quality of the professional in the field.

3. ACHIEVEMENTS AND PROSPECTS OF DECADE BY 1990

The following table gives the national Decade targets for 1990 and the coverages in 1980 and 1987 and the likely coverage in 1990 for both urban and rural water supply and sanitation. It is evident that the commencement of the Decade has given impetus to stepping up the development of activities, particularly in rural water supply. The situation is described below:

3.1 1987 Coverage and Likely Coverage in 1990

(1) Urban Water Supply

Natural growth and immigration from rural areas had resulted in an increase of some 67 million population between 1980 and 1987 - almost 30 per cent over the 1980 urban population of the Region. Despite this very large increase, the additional urban population covered with water supply during the period 1980-1987 was 46.11 million or 6.6 million per year. Due to this low coverage rate, as compared to population growth, the unserved population in the urban area continued to rise from 84 million in 1980 to 105 million by 1987 and the percentage coverage remained relatively almost steady at about 65 per cent. This is evident from the fact that in 1987, 64.8 per cent of the urban population had access to safe water compared to 64 per cent in 1980. Significant increases in the percentage coverage of the urban population were achieved in Indonesia, Sri Lanka and Maldives.

The total population likely to be covered by the end of 1990 is estimated at 228.71 million (69.8 per cent) against the projected population of 327.62 million by 1990, necessitating an increase in the coverage rate from 6.6 million to 9.3 million people per year between 1987 and 1990, which is 1.4 times the rate between 1980 and 1987.

(2) Rural Water Supply

By 1987, 63 per cent of the rural population had access to safe water supply as against 30 per cent in 1980. The overall rural population growth of 78.2 million between 1980 and 1987 was more than met through extension of service to an additional 310.4 million population in the sub-sector. The additional rural population covered per year, on an average, since the commencement of the Decade was 44.3 million. All the countries of the Region were able to demonstrate an increase in the percentage coverage of the rural population with Bhutan and Maldives, increasing their coverage almost five times.

TABLE. Population coverage for water supply and sanitation, 1980-1987, and targets for 1990
(Population in millions - percentages in parentheses)

Country	Year	Population			Water supply		Sanitation	
		Urban	Rural	Total	Urban population	Rural population	Urban Population	Rural population
Bangladesh	1980	10	80	90	2.6 (26)	32 (40)	2 (21)	1 (1)
	1983	11	81	92	3.2 (29)	35 (43)	2.3 (21)	2 (2)
	1985	18	82	100	4.3 (24)	40 (49)	4.4 (24)	2.5 (3)
	1987	22.4	83	105.4	5.7 (25)	54 (66)	4.7 (20)	5.1 (6)
	1990	25	88	113	7.6 (31.6)	52 (59)	6.3 (25)	7.9 (9)
Bhutan	1980	0.06	1.14	1.2	0.06 (50)	0.06 (5)	0.06 (-)	- (-)
	1983	0.16	1.12	1.3	0.16 (40)	0.16 (14)	0.16 (-)	- (-)
	1985	0.168	1.12	1.3	0.168 (100)	0.217 (19)	0.168 (100)	0.06 (0.5)
	1987	0.17	1.12	1.3	0.17 (100)	0.268 (24)	0.17 (100)	0.08 (7.0)
	1990	0.2	1.3	1.5	0.2 (100)	0.516 (40)	0.2 (100)	0.13 (10)
Burma	1980	8.3	24.6	33	2.9 (35)	3.5 (14)	2.9 (35)	3.8 (15)
	1983	8.45	27	35.5	3 (36)	5.8 (21)	2.9 (34)	4.2 (15)
	1985	9	28	37	3.2 (36)	6.8 (24)	2.9 (33)	5.8 (21)
	1987	9.3	29	38.3	3.4 (37)	7.9 (27)	3.2 (35)	7.8 (26)
	1990	10	31	41	4 (40)	10.8 (35)	4.0 (40)	11.8 (38)
India	1980	148	524	672	115 (77)	162 (31)	40 (27)	3 (0.5)
	1983	161	547	708	128 (80)	255 (47)	49 (30.5)	4 (1)
	1985	174	557	741	127 (72)	314 (56)	61 (34.9)	11 (2)
	1987	184	575	794	145 (79)	403 (70)	74.3 (40)	18.4 (3.2)
	1990	196	602	869	169 (86)	532 (88)	87.9 (45)	30.1 (5)
Indonesia	1980	50.5	97	148	18 (35)	18 (19)	15 (29)	14.6 (15)
	1983	56	102	158	22.5 (40)	30 (29)	17.5 (31)	31 (30)
	1985	59	106	165	25.7 (43)	38 (36)	19 (32)	40 (38)
	1987	64	108	172	26.6 (41)	40 (37)	21 (32)	41.5 (38)
	1990	70	113	183	28.7 (41)	45 (40)	28 (40)	45 (40)
Maldives	1980	0.04	0.12	0.16	0.004 (11)	0.004 (3)	0.004 (11)	0.002 (1)
	1983	0.04	0.14	0.18	0.02 (54)	0.01 (7)	0.019 (54)	0.002 (1)
	1985	0.05	0.14	0.19	0.03 (58)	0.02 (12)	0.027 (58)	0.002 (1.48)
	1987	0.05	0.145	0.195	0.045 (91)	0.025 (17)	0.048 (98)	0.003 (2)
	1990	0.065	0.15	0.22	0.06 (92)	0.037 (25)	0.064 (100)	0.005 (3)
Nepal	1980	1	13	14	0.8 (83)	0.9 (7)	0.16 (16)	0.15 (1)
	1983	1.1	15	16	0.8 (71)	1.7 (11)	0.18 (16)	0.15 (1)
	1985	1.35	15.3	16.6	1.0 (70)	3.8 (25)	0.23 (17)	0.026 (1)
	1987	1.35	16.3	17.6	1.04 (77)	4.1 (25)	0.734 (54)	0.03 (1)
	1990	1.9	17.3	19.3	1.7 (87)	5.2 (30)	1.48 (80)	0.04 (1)
Sri Lanka	1980	3.2	11.6	14.8	2.2 (65)	2 (18)	2.3 (68)	2.1 (18)
	1983	3.3	12	15.3	2.5 (76)	3 (26)	2.5 (72)	- (N.A.)
	1985	3.4	12.5	16	2.8 (82)	3.6 (29)	2.2 (65)	5 (39)
	1987	3.5	12.8	16.3	2.9 (82)	4.3 (35)	2.4 (69)	5.3 (41)
	1990	3.8	13.3	17.1	3.2 (85)	6.2 (45)	2.8 (75)	5.9 (43)
Thailand	1980	11.9	36	47.9	7 (65)	15 (42)	7 (64)	15 (41)
	1983	12.2	37	49	6 (50)	26 (70)	6 (50)	16 (44)
	1985	12.9	39	52	7 (56)	26 (66)	10 (80.6)	18 (46)
	1987	14.3	39.5	53.8	8.9 (62)	29.7 (75)	12.8 (89.3)	21.6 (54.6)
	1990	20	40.7	60.7	13.4 (67)	36.6 (90)	11.9 (83)	28.5 (70)
SEAR	1980	232.98	788.40	1020.3	148.3 (64)	233.64 (30)	69.01 (29.6)	39.42 (5)
	1983	253.16	822.8	1075.9	166.5 (66)	356.7 (43)	80.5 (31.8)	57.8 (7)
	1985	278.7	841.6	1129.4	171.6 (62)	431.4 (51)	100.35 (36)	82.2 (10)
	1987	299.9	865.6	1200.5	194.4 (64.8)	544.1 (63)	119.43 (40)	99.4 (11.5)
	1990	327.6	901.8	1295.2	228.7 (69.8)	688.5 (76)	143.67 (44.0)	129.6 (14.4)

Sources: IDWSSD Review of National Baseline Data (as at 31 December 1980): WHO/Geneva, 1984
IDWSSD Review of National Progress (as at December 1983): WHO/Geneva, 1986
IDWSSD Review of Mid-Decade Progress (as at December 1985): WHO/Geneva, 1987
Sector Digest Form received from countries by June 1988 for 1987 status

The total population likely to be covered by the end of 1990 is estimated at 688.5 million (76 per cent) against the projected population of 901.75 million in 1990, thereby requiring a coverage rate of only 48.16 million per year between 1987 and 1990. This is attainable because it is only 1.1 times the present rate of coverage of 44.5 million/year between 1980 and 1987.

(3) Urban Sanitation

Even though the complementarity of sanitation was emphasized since the beginning of the Decade, this has not materialized. The population covered between 1980 and 1987 with sanitation facilities was even less than the growth in population during the same period. However, as a result, the uncovered population has risen from 163 million in 1980 to 180 million by 1987. The additional population covered since 1980 is 50.4 million raising the urban coverage to 40 per cent against 30 per cent in 1980. The rate of population coverage during this period was 7.2 million per year. Most significant progress was made in Thailand, Maldives and Bhutan where more than 80 per cent urban dwellings are now covered.

The total population to be covered by 1990 is estimated to be 143.67 million against a total population of 327.62 million in the same year, necessitating an increase in the coverage rate to 8.08 million per year between 1987 and 1990, which is 1.1 times of the rate between 1980 and 1987 (7.2 million/year) to reach the likely target of 44 per cent by 1990.

(4) Rural Sanitation

As regards rural sanitation, the coverage in 1987 was 11.5 per cent against 5 per cent in 1980. Traditionally, service coverage in this sub-sector has been low and it remains so in all the countries of the Region. As the rate of coverage is lower than the increase in population, the uncovered population had risen from 749.0 million in 1980 to 766.23 million by 1987. The rate of coverage between 1980 and 1987 was about 8.56 million per year with only Thailand (54.6) per cent and Sri Lanka and Indonesia, which reported coverage levels approaching 40 per cent, being substantially in excess of the regional average of 11.5 per cent. Thus, this is an area that requires much attention.

Keeping the 1990 target to a modestly low figure of 14.4 per cent, the population to be covered by 1990 is estimated to be 129.6 million against the 1990 total population of 901.75 million. This will require an increase in the coverage rate to 10.9 million per year i.e., 1.17 times of that between 1987-1990.

3.2 Summary of Likely Achievements upto 1990

If the progress between 1987 and 1990 as indicated earlier is maintained, it can be anticipated that by 1990 about 76 per cent of the rural population and 69.8 per cent of the urban population will be covered with water supply, while the urban and rural sanitation coverage will reach 44 per cent and 14.4 per cent respectively.

4. EVALUATION

The message from these figures is clear - that the progress to date is not sufficient. Progress in urban water supply, urban sanitation and rural sanitation has therefore to be accelerated. More emphasis has to be laid on unserved and underserved populations. Large populations will still remain unserved with safe drinking water supply and adequate sanitation by end of 1990.

Efforts to provide the services will therefore have to be continued beyond 1990. The encouraging note is that Member States have demonstrated their commitment to the Decade both in political and financial terms within the limits imposed by economic constraints, rapid rise of urban population, pressing national needs for food due to droughts, floods, etc.

In most SEAR countries, the present structural arrangements are still not oriented fully towards the implementation of the Decade approaches; different agencies deal with urban and rural water supply and sanitation, and do not adequately coordinate their efforts; water utilities operating urban systems continue to give preference to the more privileged population groups; agencies remain centralized and thus development continues to be based on government plans rather than on community needs; self-reliance is not sufficiently enhanced, new installations often do not correspond to people's needs and means and community involvement remains a subject of official policy statements rather than a common feature of CWS&S projects.

In addition to lack of easy coordination and association of CWS&S with related sectors, particularly with PHC, health education, human resources development and institutional strengthening in the present structure, PHC programme components are not sufficiently used to foster CWS&S development.

To ensure that WS&S provides an entry point for PHC, increased intersectoral coordination is needed at least at the district level. The existing institutional structures and their operational approaches and priorities do not lend themselves to such action. The district health system through PHC is being tried in India, Indonesia and Bangladesh. Decentralized and integrated approaches have been implemented successfully in NTT, South Sulawasi, and Bengkulu and Lampung projects in Indonesia.

Greater efforts are needed to ensure the articulation of policy and strategy for WS&S at all levels of WHO, and Decade approaches need to be promoted by health and non-health agencies. In Bangladesh, Bhutan, India, Nepal and Sri Lanka, WS&S programmes are implemented by non-health agencies. In Burma, Indonesia and Thailand, only a part of WS&S activities (15-30 per cent) are carried out by the Ministry of Health. The involvement of the Department of Health with non-health departments is low and thus the verticality of the programmes of the two sides continues. Though supportive efforts of WHO sanitary engineers at the country level are visible, such staff are available in only five of the eleven countries of the Region.

The non-inclusion of WS&S agencies in national health councils and PHC committees in some countries has reduced the opportunity for intersectoral coordination and incorporation of WS&S in PHC. National

health councils are functioning in six countries, viz., Bangladesh, Burma, India, Indonesia, Sri Lanka and Nepal, but in Bangladesh, Burma and India WS&S agencies are not represented in them. Similarly, PHC committees exist in seven countries, viz., Bangladesh, Burma, India, Indonesia, Nepal, Sri Lanka and Thailand, but there is no participation of WS&S agencies in India and Indonesia. Although National Action Committees have been formed in nine countries, viz., Bangladesh, Bhutan, Burma, India, Indonesia, Maldives, Nepal, Sri Lanka and Thailand, actual participation of health authorities in many of them is minimal. Drinking water quality surveillance is a legitimate role of ministries of health and would provide better intersectoral cooperation but most of them are hesitant to assume this role. In most countries, the Ministry of Health is not adequately motivated to play an effective role in the Decade. Community health workers can play a very useful role at the village level.

The decrease in WHO environmental health field staff has led to a reduction in support to some countries. In some countries, such as Burma, this has been compensated by the engagement of national experts. WHO resources are now increasingly used for planning human resources development, institutional strengthening, health education, community education and participation, water quality surveillance, operation and maintenance, promotion of operational research, development of projects for funding, and monitoring and evaluation in the context of the Decade approach. The involvement of WHO staff with National Action Committees and Decade activities has helped in promoting intersectoral cooperation and influencing realignment. As the lack of resources is a major constraint in most countries, resource mobilization and donor consultations are being promoted. Resource mobilization profile and donor consultation exercises have been carried out to identify constraints, problems and issues and priority projects for seeking the support of external agencies for WS&S projects. WHO assistance in the preparation of Decade plans has helped countries in obtaining increased funds by supporting them in the identification of projects suitable for external funding as a part of project and programme information system and also Country Exchange Support Information exercises.

5. SOME SIGNIFICANT RECENT THRUSTS

Between 1985 and 1988, the following four events took place which need a mention as they outline some important directives for future action.

First, the Thirty-ninth World Health Assembly resolution WHA39.20 called for more determined efforts on listed points, and urged Member States, external support agencies and requested the Director-General, WHO, to assist in implementing and monitoring the progress.

Second, the 1985 meeting of the Organization for Economic Cooperation and Development's development assistance committee recommended that effective sectoral consultation and coordination should involve donors and recipients in a process aimed at analysing and improving sector policies, investment programmes and institutional frameworks.

Third, an international seminar in Abidjan in 1986 on African Region External Support, concluded that lasting health and economic benefits for the rural and urban fringe population of Africa could be achieved through increased community participation, management of WS&S systems, based on

proven low-cost technologies. Governments were therefore urged to identify adequate resources and provide necessary support for the direct involvement of communities in choosing, managing and paying for water and sanitation systems.

Governments and donors were urged to implement projects which are sustainable and replicable, having built-in community participation at all stages of projects, with multiple benefits of WS&S, hygiene and education and incorporating the PHC approach in projects.

Fourth, the Consultation on International Drinking Water Supply and Sanitation, 13-16 October 1987, Interlaken, Switzerland, the objective of which was to carry forward coordinated strategies and resource mobilization activities to the end of IDWSSD and beyond. The outcome of this Consultation was in three parts:

(a) A framework of global cooperation beyond the Decade.

(b) An action agenda for participating external support agencies.

(c) Amplification of six global sector concepts, namely, institutional and human resources development (HRD), cost recovery, balanced development, O&M and rehabilitation, community participation and hygiene education, and coordination and cooperation.

Following the above Consultation, World Bank and UNDP have jointly prepared an action plan towards equitable and sustainable development - A strategy for the remainder of the Decade and Beyond.

An Intercountry Consultation for Decade and Beyond was held in the Regional Office from 18 to 22 July 1988. The outcome of this Consultation will be submitted to the Regional Committee as an information document.

6. CONSTRAINTS

On the basis of the experience to-date and in the light of constraints identified by governments as well as cooperating international agencies, actions on the following would deem imperative:

6.1 Institutional Development

There is now general acceptance of the fact that large engineering-oriented utility type authorities and centralized government implementing agencies are not capable of reaching down to the grassroots in support of dispersed rural projects employing appropriate technology.

Decentralization, privatization, greater use of nongovernmental organizations, participation of communities and integrated programmes at the district level are all changes advocated for consideration in order to lay emphasis on the provision of services to rural and peri-urban areas.

A good example of adoption of these principles is Nepal where, by a Decentralization Act in 1986, the Government placed the responsibility for

development, planning and implementation with district, town and village panchayats, and for project operation and maintenance with Users' Committees.

In a number of countries of the Region, nongovernmental agencies are playing an important role in the development of the sector. For example, in Thailand, the Family Planning Association has promoted the provision of water storage containers throughout rural areas whilst in India Sulabh International has done much to introduce low-cost sanitation.

6.2 Cost Recovery

To achieve cost recovery the departments must have governmental authority requiring the customers to pay for services. For this purpose, the installed systems must be reliable to ensure continuity of realization of payment from the beneficiaries. However, customer willingness to pay must be motivated which could perhaps best be done by creating awareness through public campaigns.

In most countries of the Region, cost recovery constitutes a major problem. In general, it is totally inadequate and major financial contributions are required in the form of government subventions to meet the recurrent costs generated by the sector. As the sector develops, with service being extended to an increasing proportion of the population, the demand for subsidy will increase unless an improved proportion of the costs is met by the beneficiaries. But further charges on the limited budget, coupled with reduction proposals, cause uncertainty in the availability of funds leading to deterioration of standards of operation and breakdown of maintenance systems requiring frequent or early replacement of the system components or major equipment itself. Much can be done to contain the demand for recurrent funds by the use of appropriate technology, realistic design standards and elimination or reduction of unaccounted use of water. The retention of revenues collected by the responsible operational authority through improved billing and payment collection will help improve the situation.

The subject of meeting the recurrent costs of a project should be fully discussed and must have agreement of the benefiting community before the a project is undertaken. While full cost recovery (operation and maintenance, depreciation and debt serving) will, in many cases, remain a long-term objective in urban areas, beneficiaries should be expected to contribute at least the full cost of operation and maintenance in rural areas.

The countries of the Region are well aware of the above problems. For example, the National Seminar on Water and Sewerage Tariff, held in India in September 1986, reviewed all these matters and emphasized that major improvements were required in cost recovery practices and policies of the sectors.

6.3 Imbalance Between Water Supply and Sanitation and Rural Development

(1) Complementarity of water supply and sanitation

In urban areas against 64.8 per cent population covered with water supply, only 40 per cent is covered with sanitation whereas in rural areas only 11.5 per cent is covered with sanitation against 63 per cent covered with water supply. This is a big gap. Drinking water, together with sanitation, health and hygiene education, is essential to safeguard against contamination of water. The joint approach should therefore keep this requirement of the programme in view.

(2) Urban and rural served/unserved population

In rural areas, 312 million additional population has been covered with water supply since 1980 against 46 million in urban areas (i.e. nine times that of urban) whereas the additional population covered with sanitation in rural areas was 60 million against 50 million in urban areas. By 1987, population uncovered with water supply in rural and urban areas was 321 and 105 million respectively, and the comparative rural and urban sanitation uncovered population was 766 and 180 million respectively. There is therefore a clear need to expand sanitation coverage to rural areas and urban fringe areas. Due to the rapid growth of the population in urban areas as a result of migration of rural population to urban areas, CWS&S programmes should be oriented to poorer sections adopting low-cost affordable systems.

6.4 O&M Rehabilitation

Inadequate O&M, combined with poor logistic support, is identifed as one of the major constraints. Poorly functioning and broken-down systems have often led users to resort to unsafe sources. Training of those expected to carry out O&M and motivation of beneficiaries in all stages of project development, decision-making and health education is necessary. Rehabilitation of defunct systems should be given priority as it is generally more cost-effective.

Inadequate maintenance results in wasted investment for renewals or rehabilitation are expensive. Further rehabilitation of broken-down facilities would appear economical than their replacement altogether. Technology choice has a major impact on maintenance needs and local manufacturing of spare parts improves the prospect for timely maintenance.

Much of this problem can be associated with institutional and cost recovery problems. Centralized authorities do not generally have the reach-down capacity required and their problems are compounded by inadequate levels of recurrent funding. Services developed through community participation utilizing appropriate technology, managed by village committees and operated and maintained by village workers with technical support from a technical agency, have shown to have a much better chance of success. Training of village workers as part of the development programme is required and the obligation of the community being responsible for the service in areas, such as cost recovery and proper maintenance, must be fully explained and accepted at the planning stage.

Although programmes can be accelerated through improved management, better institutional management, and use of low-cost technology, additional funding is necessary for the construction of new systems, training, health education and community participation. Efforts should be made to mobilize internal resources and governments should stimulate this by contributions, creating revolving funds, granting favourable loan terms, introducing appropriate policy and tariff structure etc. In this connection, an urban and rural policy needs to be developed with cost recovery strategy built in.

It is now accepted by most of the people that to reach the goal, governments should use cost-effective methods, such as public standposts, hand pumps, latrines combined with community-based social strategies with strong human resources development and hygiene education components. It has been found that the use of this strategy can reduce the need for capital to 30 per cent of that of conventional technologies.

Currently, external funding amounts to roughly 50 per cent of the total investments available to the WS&S sector in the countries of the Region. The remaining funds come from the government and communities. The stress should be on increasing the domestic component.

6.5 Lack of Trained Manpower

Human resources development is the most critical component in achieving nationwide water and sanitation coverage. Training in planning, management, implementation and O&M is a priority requirement than activities in the installation of facilities. The training of trainers, training of sub-professionals at village and district levels, fellowships for study tours for various categories of personnel, preparation of training and information material and their dissemination, and on-the-job training need due attention.

6.6 Community Participation

Too many WS&S projects prove unsustainable when central agencies assume the role of decision-making and management. The Decade has produced evidence that the participation of benefiting communities in all stages of water supply and sanitation projects is a prerequisite to success and that the involvement of women is particularly important. Community participation cannot be effective unless measures are taken to equip community members to undertake the tasks expected of them in relation to the upkeep and management of their water supply and sanitation facilities. Professional engineers are not well equipped to initiate community participation or hygiene education activities as they require specialized skills and understanding of the culture.

The WHO executed, UNDP-funded project "Achieving Success in Community Water Supply and Sanitation Projects" was founded on case studies carried out in nine countries of the South-East Asia and Western Pacific Regions of WHO. From these studies, a recommended procedure was developed for the involvement of the community in the planning, development, operation and maintenance and water supply and sanitation projects. These procedures were subsequently considered in a number of national workshops which adjusted them as necessary to accord with local conditions prior to their application in the field.

With support from UNDP, WHO has also been executing a project for the "Promotion and Support of Women's Participation in Water Supply and Sanitation". The final workshop highlights the importance of participating approaches for health and hygiene education, formation of users' groups and community involvement at all stages.

6.7 Technology Development

WHO has long been the pioneer promoter of simple, low-cost technologies starting from deep and shallow wells hand pumps, latrines, public standpost designs, rainwater tanks etc. It worked very closely with UNICEF and appreciated recent World Bank efforts in this direction. WHO is involved in carrying out research on low-cost technologies addressing common operational problems. WHO, through its Country External Support Information (CESI), will disseminate information to donors on projects and activities.

6.8 Coordination and Cooperation

Since the inception of the Decade, there has been growing cooperation within the external support community. A number of international and regional meetings have been held culminating in the Consultation at Interlaken, Switzerland, in late 1987 at which accord was reached not only on the global concepts for improving sector performance but also on a framework for global cooperation beyond the Decade and an action agenda for the participating agencies.

It is to be anticipated that the policies and concepts agreed at the global level will be carried forward in bilateral discussions between individuals, external support agencies and national sector agencies. However, at the country level, there remains, in general, much to be done to coordinate activities between the local representatives of external support agencies. UNDP has accepted that Resident Representatives should take a lead role in providing a focus for sector activities but this has not always proved to be effective. Most countries formed National Action Committees early in the Decade so that national plans, policies and priority programmes could be drawn up on a considered national basis and not be presented as ad hoc wishes of individual sector agencies. Unfortunately, in many instances, the National Action Committees no longer meet; therefore, consideration should be given to formalizing their constitution so as to make them a legitimate entity within the national planning process for the sector.

Decade consultative meetings in which representatives of the external support community and government agencies participate to consider government development plans for the sector, were held in Nepal and Indonesia and a further meeting is planned for Thailand in the near future. While preparations for these meetings and attendance were adequate, the results have been disappointing.

6.9 Integrated Approach for Balanced Development

Maximum benefits are obtained when WS&S and hygiene education form part of integrated programmes under a single executing agency using

socially acceptable technologies. This has been realized by some Member States. The Government of Nepal has recently transferred the responsibility for WS&S under one umbrella to the Ministry of Housing and Physical Planning. In Bangladesh, it is under the Ministry of Panchayat, Local Government and cooperatives.

New insight into social and epidemiological aspects forced a revised understanding of the interdependence of water, sanitation, nutrition, health and education departments and has rendered the existing technical public work approach to WS&S problem obsolete. Social development involves a network for hygiene education to reach target audiences at all levels through communication channels by disseminating health messages. There is therefore a need to develop educational material for such a work.

As progress in sanitation lags behind water supply, there is a need to extend support to this programme to create awareness and stimulate national commitment to sanitation programmes without which progress in water supply will have little long-term effects.

Women's involvement is the centrepiece of participatory approach based on their role as water providers, users, household managers, child educators, food handlers and sanitarians in families. They should be considered not as passive recipients but as decisive partners. The role of women is the key to the success of WS&S projects.

7. TASK BEYOND DECADE - 1991-2000

7.1 Urban Water Supply

Assuming a rise in the urban population by 50 per cent over that of 1990, and 100 per cent coverage of the population by 2000, the urban population is likely to reach 490 million by the year 2000 and the additional population required to be covered between 1991 and 2000 will reach 261.29 million. This will require an increase in water supply coverage of 261.29 million between 1991 and 2000. This is about 3.25 times of the rate of coverage between 1980 and 1990.

7.2 Rural Water Supply

Assuming a rise in the rural population by 20 per cent over that of 1990, and 100 per cent coverage of the population by the year 2000, the rural population is likely to reach 1 080 million by the year 2000 and the additional population required to be covered between 1991 and 2000 will be 391.46 million, which is less than the rate of coverage between 1981 and 1990. Not only 100 per cent coverage by the year 2000 is therefore likely to be achieved if the present pace is maintained, but it should also be possible to improve the level of service.

7.3 Urban Sanitation

Assuming a rise in the urban population by the year 2000 to 490 million and 100 per cent coverage of the population by the year 2000, the

population coverage between 1991 and 2000 has to be increased to 346.33 million i.e. about 4.64 times the rate of coverage of 7.4 million per year between 1981 and 1990.

7.4 Rural Sanitation

Assuming a rise in the rural population by the year 2000 to 1 080 million and 100 per cent coverage of the population by 2000, the rate of coverage between 1991 and 2000 has to be increased by 10.53 times of that of 1981-1990 (9.02 million/year) to reach 100 per cent coverage of the projected target for 2000.

8. *CONCLUSION: THE DECADE AND BEYOND*

It is thus clear that a formidable task is still ahead. Only some of the key issues have been identified, which need to be addressed, and UNDP, UNICEF, WHO and the World Bank need to develop their operational strategies and mobilize resources as spelt out in the report of the Interlaken Consultation to attain the target of safe water supply and sanitation for all by the year 2000 coinciding with the target of Health for All by the year 2000 at the country level as well as globally. This report has also touched on some of the major constraints that continue to affect sector progress, not only in developmental efforts but also in sustaining the functioning of the services provided. Continued emphasis will need to be laid on strengthening sector institutions, development of human resources, involvement of the benefiting communities in the planning, development, operation and maintenance of the sector, application of appropriate technology and establishment of better coordination and cooperation between the various internal and external agencies involved.

The Decade has gathered excellent momentum. A comparison with the situation in 1980 shows that since then considerable advances have taken place in official and public awareness; sector policies of governments and support agencies have been rationalized; technology alternatives have been widely researched, publicized and adopted; sector agencies have cooperated in the preparation of plans which present true national priorities rather than those of the competing agencies, benefiting communities are recognized as essential partners in the developmental process and political realization is apparent in such matters as levels of service and cost recovery. If timely, effective steps are taken by all the Member States, not only will this target be met by the year 2000 but it will also be sustainable.