

# **Drinking-Water and Sanitation, 1981-1990**

## **A Way to Health**

**A WHO CONTRIBUTION TO  
THE INTERNATIONAL DRINKING WATER SUPPLY  
AND SANITATION DECADE**



**GENEVA**

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# Preface

A major aim of the International Drinking Water Supply and Sanitation Decade is the improvement of people's health. This will not be automatically achieved merely by building water-supply and sanitation systems, especially if they are built to meet traditional economic and financial criteria. Indeed it has been stated that the Decade cannot succeed if the same technology and the same management approach are applied as in the past. WHO, therefore, has adopted a Decade approach which can be summarized as follows: the Decade must contribute to implementing primary health care; water-supply and sanitation development should be complementary and they should be jointly associated with other health development; policies and programmes should be focused on rural and urban underserved populations; full coverage should be achieved through reproducible, self-reliant and self-sustaining programmes; the people for whom the services are intended should be associated with all stages of programme and project development; the Decade should be a matter of collaboration between all contributing sectors. It is evident, too, that if they are to be self-reliant and self-sustaining, programmes will require a new approach to the role of community-based manpower; community workers must be provided with information and logistic and operational support from the appropriate government services.

This publication is intended to inform all concerned at the national and international levels about WHO's Decade approach.

WHO is principally a specialized agency for coordination and technical cooperation, and not a funding agency; however, where countries are in need of external funds for Decade programmes, are well advanced in their planning, and have a broad-based administrative infrastructure to implement Decade programmes, WHO will seek to assist them in obtaining the required funds.

In line with the above, the Organization will emphasize:

- promotion and support for the development of national plans and programmes, the identification and implementation of projects, and the strengthening of national institutions and capabilities;
- exchange of information, particularly of appropriate technology, and other means of facilitating coordination and technical cooperation;

- monitoring of progress and evaluation;
- mobilization of external resources, mainly for the development and implementation of national plans and programmes, institution-strengthening and manpower development.

The type of coordination and technical cooperation described can involve a great variety of activities which governments may request the Organization to undertake; among them are:

- cooperation in making assessments of country situations;
- supporting countries in the development of Decade strategies and programmes;
- undertaking studies of problems and institutional situations which could constrain progress in the Decade, and making recommendations for improvements;
- identifying, formulating and costing projects (particularly projects intended to gain support from official development aid agencies);
- strengthening the machinery of coordination and cooperation within countries in order to make it a solid infrastructure for support;
- strengthening of health agency contributions and assimilation of primary health care principles to the provision of water supply and sanitation;
- organizing support measures in crucial areas such as manpower, health education, community involvement, water quality surveillance and control, and the transfer of technical information.

At the global level, WHO has assumed responsibility for the monitoring of the Decade's implementation and for reporting on other Decade developments. WHO has also developed a system to inform governments and official development aid agencies on the opportunities and the needs, respectively, for external support to national programmes.

By whatever means water supply and sanitation are provided, operated or improved, the health agencies at all levels and community health workers are essential in promoting and implementing the Decade. The challenge for them lies in promoting the Decade to implement primary health care and by implementing primary health care to support the Decade further. Indeed, the concept of primary health care has given the community health worker—and his or her support at the first level of referral—important tasks to perform in relation to water supply and sanitation, which are one of the essential elements of primary health care.

Another factor to be considered in making plans for the Decade is that health agencies must take the lead, determining from epidemiological evidence which are the communities or districts at highest risk of waterborne or water-related diseases. Health agencies also assume the responsibility for establishing appropriate quality standards for drinking-water, and set up and run drinking-water quality surveillance programmes – which would also provide advice on protection of drinking-water sources, and on sampling and analysis of drinking-water used and reporting thereon. They may provide support to community workers by disseminating standard designs for small water-supply installations, on-site excreta or waste-water facilities, and public water points, public bathing facilities and toilets appropriate to actual geographical and cultural conditions in the various parts of the country. The health agencies should in all cases organize and carry out the training of community workers to act as focal points in the community for the dissemination of information to members of the community and for the referral of problems exceeding their capabilities to appropriate district offices; but also the health agencies in each country should train all other health personnel in the Decade approach so that they make a genuine contribution to primary health care. Above all, the health agencies should place a high premium on developing national Decade strategies and plans of action to provide health for all their people by the year 2000. To reach the Decade's target in 1990 would make a decisive contribution to this, the greatest endeavour ever in the field of health.

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## *Chapter 1*

# Introduction

The attainment of the target for the International Drinking Water Supply and Sanitation Decade, 1981-1990, i.e., safe water supply and sanitation for all by 1990, will require new approaches both in national strategies and in international support. The magnitude of the task calls for a change in the methods of delivery.

The Decade represents an essential first stage in the global programme of health for all by the year 2000. By increasing the quantity and quality of water supplied it will help to reduce the incidence of many diseases among the people most at risk. By improving sanitation and hygiene it can greatly increase the health impact of investments in water supplies. It is the health aspects of water and sanitation which concern WHO most closely and which provide the link with its primary health care goals and programmes.

This publication attempts to clarify the Decade's approaches and to show how they may change the focus of national strategies and international support, and provides guidelines for specific activities in the planning and design of suitable programmes.

### **1.1 Decade targets and global coverage**

The United Nations Conference on Human Settlements (Habitat) set 1990 as the date for community water supply and sanitation to include all urban and rural areas. The United Nations Water Conference reiterated the Habitat commitments (see Annex 1). The United Nations General Assembly, at its thirty-fifth session, in November 1980, formally launched the Decade; by its resolution 35/18,<sup>1</sup> Member countries were committed to bring about a substantial improvement in the standards and levels of services in drinking-water supply and sanitation by the year 1990.

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<sup>1</sup> See Annex 2.



Table 1

Estimated Service Coverage for Drinking-Water Supply in Developing Countries, 1970–1980<sup>a</sup>

	1970		1975		1980	
	Population served (in millions)	Percentage of total population	Population served (in millions)	Percentage of total population	Population served (in millions)	Percentage of total population
Urban	316	67	450	77	526	75
Rural	182	14	313	22	469	29
Total	498	29	763	38	995	43

Table 2

Estimated Service Coverage for Sanitation in Developing Countries, 1970–1980<sup>a</sup>

	1970		1975		1980	
	Population served (in millions)	Percentage of total population	Population served (in millions)	Percentage of total population	Population served (in millions)	Percentage of total population
Urban	337	71	437	75	372	53
Rural	134	11	209	15	213	13
Total	471	27	646	33	585	25

<sup>a</sup> WHO estimates submitted to the General Assembly of the United Nations by the Secretary-General in his report on the International Drinking Water and Sanitation Decade: Present situation and prospects (United Nations document A/35/150).

Figures do not include the People's Republic of China.

The work facing those who aim to fulfil the Decade's targets is formidable. Approximately three out of five persons in the developing countries do not have access to safe drinking-water; only about one in four has any kind of sanitary facility, be it only a pit latrine (see Tables 1 and 2). The urban areas are better served, 75% of the population having some form of water supply through house connexions or standpipes, and 53% having "adequate" sanitation (the term used in the resolution 35/18 of the General Assembly of the United Nations—see Annex 2). In rural areas only 29% have equivalent water supply and 13% have sanitation. Coverage improved between 1975 and 1980 for water—though much less than between 1970 and 1975—but for sanitation it probably declined. Drinking-water and sanitation for all by 1990 means providing 3000 million people with new or improved

services at a cost of between US\$ 300 thousand million and \$ 600 thousand million (1978 rates), depending on the technology chosen. The annual investment rate would have to be between five and ten times the estimated level in 1979.

If the same standards of service and methods of implementation as have been used in the recent past are used during the Decade, the target may never be reached. Lower unit costs and standards of service must be accepted and local community and external resources must be greatly increased. There are no reliable statistical estimates of how many public and private water and sanitation facilities have fallen into disuse or disrepair; it must be assumed that much more needs to be done about their maintenance and upkeep, about water quality, and about the improvement of the technical and financial administration of water and sanitation systems. Finally, much greater attention must be paid to sanitation; in the past the provision of drinking-water was often given overriding priority. Water supply, sanitation, and health education of the general population go together.

## **1.2 Outline of the Decade approach**

The new approach of the Decade recognizes biases and shortcomings in national plans and programmes and in the support provided by the international community. Many of these shortcomings are common to other sectors and stem from unbalanced policies for overall development; some are symptoms of more fundamental problems.

The approach comprises, at the national level:<sup>2</sup>

- (1) complementary sanitation and water-supply development;
- (2) strategies that give precedence to underserved populations, both rural and urban;
- (3) programmes that will serve as a model for self-reliant, self-sustaining action;
- (4) use of socially relevant systems that people can afford;
- (5) association of communities in all stages of projects;
- (6) coordination of water-supply and sanitation programmes with those in other sectors; and
- (7) association of water supply and sanitation with other health improvement.

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<sup>2</sup> See Chapter 2, section 2.6, for a full discussion of these seven elements.

At the international level, emphasis is laid on:

- (1) promoting and supporting national programmes for the Decade through technical cooperation;
- (2) concentrating technical cooperation on building up national capacities and generating dynamic, self-sustaining programmes;
- (3) promoting technical cooperation among developing countries; and
- (4) encouraging the external financing of the national Decade activities.

The approach outlined here is closely linked to that of primary health care. The attainment of the Decade's targets and the success of primary health care have many common conditions. The Decade may be a spearhead of primary health care; it is part of the wide range of community and rural development activities with which primary health care is inextricably linked.

## Community water supply and sanitation in the Decade

### 2.1 Constraints—causes or symptoms of inadequacy?

Difficulties within the water-supply and sanitation sector are well documented:

- Progress in extending coverage has been limited.
- There seems always to be a shortage of trained manpower.
- Systems are not maintained, so that the actual coverage is usually lower than that recorded.
- Institutions and agencies can cope with limited urban programmes but immediately become overstretched if programmes have to be extended.
- Financing, either internally or through government subsidies, is inadequate, and the sector has more difficulty covering local recurrent costs than development expenditures.
- There is little coordination of water-supply development, sanitation and public hygiene.

Too often such constraints are regarded as the cause and not the symptom of inadequacy, and a solution may be sought by simply increasing the amount of funds or hiring more central agency staff when in many cases these measures are merely palliative.

Further sections of this publication will provide repeated instances of the way in which institutional weaknesses constrain Decade programmes, when national authorities and agencies are working to the limits of their capacity. Proposals and recommendations for the Decade go beyond palliative measures, seeking long-term solutions that focus on ways of releasing under-utilized resources rather than placing further strain on overworked—and frequently underpaid—professionals.

## **2.2 Weaknesses of national strategies**

Analysis of the national strategies of many countries reveals undue priority to urban and more affluent groups, over-reliance on central management, insufficient use of lower-level technicians and artisans; and standards and technology inappropriate to total coverage.

## **2.3 Weaknesses of international support**

Technical assistance as conceived until recently was a passive response to government requests, and concentrated on individual projects with little multiplier effect and a high urban-technology bias. An agreed mechanism for coordination between United Nations agencies, and with other official development aid agencies, was lacking.

## **2.4 International conferences, decisions and the international consensus**

A number of major world conferences and sessions of the United Nations General Assembly and the governing bodies of individual agencies have dealt with important global issues: environment, population, human settlements, food, employment and basic needs, water, primary health care, the role of women in development, technical cooperation, and agrarian reform and rural development. They have provided an opportunity for an international consensus on these issues and on new mechanisms to tackle them. The Decade is one expression of this new international consensus.

It is appreciated in the international community that the wide gap between the "haves" and the "have-nots" cannot be closed without raising the rates of economic growth in developing countries, which would require a new order of economic relations also with developed countries. Broad agreement about the goals for the future has emerged;<sup>3</sup> the development effort must be directed towards the twin objectives of rapid economic growth and of urgent relief for people living in extreme poverty.

A new international economic order would, for example, include increasing aid from developed to developing countries as well as the transfer of technology to promote self-reliance in industry. The ILO World Employment Conference recommends that development planning should have as an explicit goal the satisfaction of specific basic needs:

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<sup>3</sup> *North-South: A programme for survival*, London and Sydney, Pan Books, 1980 (Brandt Commission report).

“First they include certain minimum requirements of a family for private consumption: adequate food, shelter and clothing as well as a certain household equipment and furniture. Second, they include essential services provided by and for the community at large, such as safe drinking-water, sanitation, public transport and health education and cultural facilities.”<sup>4</sup>

In his preface to a report of the World Bank on water supply and sanitation and poverty, its President has made the relationship between development goals and programmes to meet basic needs very clear:

“..... a critical component of that approach is for Governments of developing countries to provide better access for the absolute poor in their societies to essential public services, particularly basic education, primary health care and clean water. These fundamental services—combined with the better shelter and nutrition that improved incomes can afford—are the key to the poor being able to meet their own basic needs. None of this can be achieved, of course, except in a climate of economic growth. But growth alone—essential as it is—cannot assist the poor unless it reaches the poor. And it does not reach the poor today in much of the developing world.”<sup>5</sup>

The World Health Organization’s goal of health for all by the year 2000 aims to use primary health care as “the key to attaining Decade targets as part of development in the spirit of social justice”.<sup>6</sup> This links the development objectives of a new international economic order with the objective of social justice according to the “basic needs” approach. The International Drinking Water Supply and Sanitation Decade gathers strength from both these objectives.

There is also international agreement on the need for a much closer relation of programmes and institutional support mechanisms to development goals.<sup>7</sup> The recent emphasis on rural development and primary health care also highlights coordination of local efforts as a means of improving programme interaction.<sup>8</sup>

Another concept crucial for the Decade, in that it will affect the nature and type of projects to be promoted and discussed with governments, is

<sup>4</sup> International Labour Office. *Meeting basic needs: Strategies for eradicating mass poverty and unemployment. Conclusions of the World Employment Conference 1976*. Geneva, 1977, p. 24 (Programme of action).

<sup>5</sup> *Water supply and waste disposal*, Washington DC, World Bank, 1980 (Poverty and Basic Needs Series).

<sup>6</sup> WHO/UNICEF. *Alma-Ata 1978: Primary health care*. Geneva, World Health Organization, 1978 (“Health for All” Series, No. 1), p. 3 (Article V of the Declaration of Alma-Ata).

<sup>7</sup> *World development report 1980*, Washington, DC, World Bank, 1980 (Part II, Poverty and human development).

<sup>8</sup> World Conference on Agrarian Reform and Rural Development: *Review and analysis of agrarian reform and rural development in the developing countries since the mid 1960s*. Rome, Food and Agriculture Organization of the United Nations, 1979 (document WCARRD/INF 3).

technical cooperation among developing countries.<sup>9</sup> WHO's goal of health for all by the year 2000 and the emphasis on primary health care reflect the reorientation towards technical cooperation:

"On no account should the concept be considered as a new name for technical assistance, which has led in most instances to fragmented projects that have had little real influence on the improvement of the national health situation and have not promoted the self-sustaining growth of the relevant programme in the country after the assistance ceased".<sup>10</sup>

There is increasing appreciation in all countries of the interest that women have in a successful outcome of the Decade. The 1980 World Conference of the United Nations Decade for Women on Equality, Development and Peace called on the United Nations system to promote community participation of women in the Decade and their involvement in the design, maintenance and utilization of water systems.<sup>11</sup> The more women are brought into the decision-making machinery for the Decade, the more likely it is that investments in water supply and sanitation will benefit those who most need them.

## 2.5 The policy of WHO: primary health care and the Decade

The World Health Organization reorganized its programme in 1975 in response to the United Nations Declaration and Programme of Action on the Establishment of a New International Economic Order, adopted by the United Nations General Assembly in the spring of 1974. Subsequently, the World Health Assembly decided on the target of health for all by the year 2000, and the Declaration of Alma-Ata adopted by the International Conference on Primary Health Care stated that primary health care was the key to the attainment of this target. WHO has since produced a blueprint<sup>12</sup> for national, regional and global activities to attain the targets. These guidelines govern the policy of WHO with respect to the Decade, which is seen as a fundamental contribution to health for all as well as an indicator of success in achieving it.

<sup>9</sup> *Report of the United Nations Conference on Technical Cooperation among Developing Countries*, Buenos Aires, 30 August to 12 September 1978. New York, United Nations, 1978 (document A/CONF.79/13/Rev.1).

<sup>10</sup> *Formulating strategies for health for all by the year 2000: Guiding principles and essential issues*. Geneva, World Health Organization, 1979 ("Health for All" Series, No. 2), p. 35.

<sup>11</sup> World Conference of the United Nations Decade for Women (Copenhagen, 14-30 July 1980), Resolution XIX.

<sup>12</sup> *Formulating strategies for health for all by the year 2000: Guiding principles and essential issues*. Geneva, World Health Organization, 1979 ("Health for All" Series, No. 2).

The Declaration of Alma-Ata<sup>13</sup> gives support to the approaches for the Decade set out above (see section 1.3). It mentions:

- the gross inequalities in health status of the people, particularly between developed and developing countries as well as within countries;
- the essential contribution of health to social and economic development as well as to the quality of life and to world peace;
- the right of communities and individuals to participate in planning and implementation;
- a definition of primary health care as “essential health care based on practical, scientifically sound and socially acceptable methods and technology made universally accessible to individuals and families in the community through full participation and at a cost that the community and country can afford to maintain at every stage of their development in the spirit of self-reliance and self-determination”;
- the need to exercise political will to mobilize country resources and use external resources rationally.

Thus WHO regards the International Drinking Water Supply and Sanitation Decade as a major contribution to its objective of achieving health for all. It is a principal component of primary health care as well as a leading step towards primary health care, and many of its activities exercise and strengthen the general health infrastructure in the same way. WHO policy and programmes at all levels are committed to according a major priority to community water supply and sanitation, with particular emphasis on rural and underserved populations.<sup>14</sup> The environmental health programme is committed to combining use of the limited resources at the international level with cooperation at the country level. Resources available to WHO are indeed meagre, especially in relation to total expenditure in this sector, and the activities of the Decade must be linked with other development activities in a multidisciplinary interagency effort.

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<sup>13</sup> WHO/UNICEF. *Alma-Ata 1978: Primary health care*, Geneva, World Health Organization, 1978 (“Health for All” Series, No. 1).

<sup>14</sup> The Thirty-second World Health Assembly, in resolution WHA32.31, endorsed the medium-term programme for the promotion of environmental health.



## **2.6 Essential elements of the Decade approach**

Seven essential elements have been identified for the approach to the Decade (see Chapter 1, section 1.2 above). A short discussion of each of these elements follows.

### *2.6.1 Complementary sanitation and water-supply development*

Improvements in community water supply have to be closely coordinated with sanitation, the sanitary disposal of wastes (including excreta) and health education if they are to have a significant impact on health conditions. The United Nations Water Conference, in the action plan in resolution II (see Annex 1), mentioned sanitation and waste-water disposal in connexion with the water targets. The World Food Conference's recommendations on improvements in nutrition called for parallel improvements in basic sanitation; and the twenty-second session of the UNICEF/WHO Joint Committee on Health Policy, held in January 1979, recommended that governments and international agencies should give a higher priority to sanitation and to complementary measures for water supply and sanitation.

If hygiene and sanitation are below a certain level, improvements in the quality and possibly even the quantity of drinking-water are unlikely to improve health status; but combined, water supply and sanitation, together with health education, are formidable weapons in the fight to achieve health for all.

The Decade must therefore raise levels of basic sanitation by well-defined programmes so that the health benefits of water supply development can be fully realized.

### *2.6.2 Strategies that give precedence to underserved populations, both rural and urban*

The United Nations Water Conference emphasized that priority should be accorded to the "poor and less privileged". It was recommended that plans and programmes for community water supply and sanitation and socioeconomic plans made during the Decade should give "priority attention to the segments of the population in greatest need" (see Annex 1).

The problem of primary health care is to cater for the “disadvantaged groups throughout the world” which “have no access to any permanent form of health care. These groups probably total four-fifths of the world’s population, living mainly in rural areas and urban slums.”<sup>15</sup>

It is true that there will also be new demands from middle-income consumers in the major towns, which will feature strongly in the augmentation programmes of developing countries and which will, because of population growth, have a claim to the benefits of the Decade. However, institutions catering for these demands are already relatively strong, and they will find other resources, as they did in the past, to build the extra facilities. The Decade must give explicit priority, and national and international agencies must give assistance, to the poor rural and urban-fringe populations in order to compensate for their underprivileged position.

Each country has its own characteristics, but the underserved populations are mainly found in the rural areas and in the poor fringes of towns and cities.

Where smaller market towns can be developed as growth centres under rural development programmes they will appreciably improve conditions for the rural poor and for the immediate population; the effect is, however, indirect. Where centres of growth actually link scattered rural populations, using water supply and other services as a focal point of attraction also for migrants, the impact is direct.

Acceptance of the idea that provision for these basic needs is a human right carries a number of implications for the Decade. First, developed countries must recognize a responsibility to assist the developing countries in implementing national policies to minimum standards. Secondly, water supply and sanitation are explicitly linked with developments in health, education and housing. Thirdly, the “basic needs” principle does not require any other justification. Fourthly, no matter what current level of development or social structure exists, the principle is of universal application.

### *2.6.3 Programmes that will serve as a model for self-reliant, self-sustaining action*

The significance of the Decade’s targets for national water-supply and sanitation institutions and agencies cannot be overstated. Concentration on

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<sup>15</sup> WHO/UNICEF. *Alma-Ata 1978: Primary health care*, Geneva, World Health Organization, 1978, (“Health for All” Series, No. 1).

underserved populations implies, in many cases, a significant reorientation of strategies and approaches that cannot but affect such structures. Institutions and programmes that have mainly catered for the urban middle class, with limited, slow-moving, rural programmes as mere adjuncts, are clearly not going to be suited to the new objectives.

A number of constraints have combined in the past to inhibit the rapid spread of programmes that can serve as a model for self-reliant and self-sustaining action; such constraints as the following will continue to operate in the future unless deliberate changes are made:

- (1) centralization has limited the capacity of the institutions and their staff for local action, especially in areas with high transport costs; there are frequently insufficient permanent district or subdistrict staff;
- (2) too little responsibility has been given to nonprofessional staff and the ratio of nonprofessional to professional staff has been too low;
- (3) nonprofessional manpower has been deprived of information and technical guidance;
- (4) technology and design criteria have been set too high;
- (5) schemes operated by national agencies have tended to be larger than can be managed by a single village or community and to ignore poor populations; and the limited availability and mobility of the agencies' highly trained manpower have made it difficult to apply such schemes elsewhere;
- (6) funding for recurrent expenditure has frequently not been assured;
- (7) agencies have not been geared to supporting broad-based programmes with priority to the lowest levels of activity (where the community auxiliaries are cooperating with government agency staff).

Current strategies to improve water supply and sanitation usually extend coverage district by district (narrow-front strategies); the alternative is a broad national strategy, depending increasingly on community resources, adopting lower standards of service and removing constraints progressively (consistent with the Decade's emphasis on decentralization and community participation), and involving, as necessary: the motivation of communities and the enlistment of their support; the training for local employment of more nonprofessionals; the development of support and referral systems at all levels to ensure that constraints are removed at the levels at which they arise; and appropriate technology.

While village or community involvement and commitment are to be encouraged and taken advantage of, some central or regional government support is almost indispensable; if operation and maintenance by central and regional departments can be reduced to logistic planning, supervision and evaluation, with quarterly or yearly checks on general rural works, then central agencies will be able to cope with the more regular checks and work on the larger, more sophisticated plant and machinery, of which there is correspondingly less.

Community auxiliaries can be motivated and trained to maintain and repair equipment, local contracts for which can be given to village smiths or artisans or to a multipurpose village maintenance unit. Other maintenance checks can be done according to an established schedule by technicians with well-defined district responsibilities and with access to more sophisticated technical support if necessary.

While it would appear essential to decentralize the Decade's activities, flexibility will always be required, and they cannot be decentralized unless there is adequate support and referral. Some if not all of the following responsibilities are usually not decentralized:

- preparation of national plans and budgets;
- provision of mechanisms for the allocation of funds;
- research and development and, in particular, the development of standards and design, construction and operation;
- procurement of imported materials;
- organization of manpower development;
- promotion and organization of education of the public;
- subsequent evaluation of programmes and projects.

Programmes that can serve as a model, by stimulating other interested parties, multiply the benefits of the planning effort. First, their success commands recognition and invites imitation. Secondly, they are an experiment in communication, requiring progressively greater commitment. Thirdly, they are exercises in coordinative management for various sponsors and participants (government officials, professional educators and project staff, community leaders, teachers, parents, etc.). Fourthly, the key quality of such a programme is its ability to remain flexible and to absorb knowledge and experience for the orientation of further programmes. Fifthly, decisions are local, and essential responsibility is close to the programme. In summary, a good programme of this kind is technically more inventive,

socially more progressive, and better integrated than is common at present.

Reproduction of self-reliant and self-sustaining programmes depends on choosing the right techniques and on using the right media for the communication of information. Communities and junior nonprofessionals can, with the necessary support, handle many local tasks if the technology is relatively simple, such as the development of shallow wells and the protection of springs for rural water supply schemes. In many cases they may be able to develop reticulated systems if materials are made available. Appropriate means of communication must be used in training senior and junior nonprofessionals and in motivating them for their work as well as for their contacts with the community. For example, the protection of springs can be described simply in a guide for use by senior nonprofessionals, and some of the construction, operation and maintenance of spring protection devices can be done by junior nonprofessionals and community auxiliaries.

The broad strategy assumes that the Decade will first lay the groundwork for programmes which will subsequently be expanded, with gradually rising standards of service. The motivation of communities, the training of nonprofessionals, the development of local supply depots and production capacity, the preparation of communication and guidance material, and the reorientation of senior staff will all take time. However, once this groundwork has been done, nationwide progress can be very rapid.

#### *2.6.4 Socially relevant systems that people can afford*

If the Decade can promote more simple, cheap and safe community water-supply and sanitation schemes which people accept and use, it will make matters much easier. Where schemes are understood and wanted by the community, people are likely to find more of the resources necessary to construct and operate them.

If there is no appreciation of what communities want and need, terrible blunders can be made; many stories are told of how people destroyed or neglected water and sanitation facilities that were installed without prior consultation.

Furthermore, technology must be appropriate. The aim is not only to reduce costs; installations should be simple to operate and maintain using the knowledge available in the village or small town concerned. Technology

should be chosen that economizes on foreign exchange and encourages local employment, and which allows for continuous improvement with a view to further development. Appropriate technology is not a "second best"; it is a way of keeping pace with development. Water-supply and sanitation technology should fit in with development in other sectors. This is the only way to encourage local development and to ensure that technological change is accepted as part of the social fabric.

Appropriate technology is also more socially relevant when it is sufficiently in advance of traditional technology to increase private and social benefits but not so advanced that it cannot be understood and its tools repaired, maintained and adapted. The common failure to operate and maintain installations is due to earlier neglect of this factor; techniques alien to people's culture and level of development have been imposed on their society and communities. Another approach, using more sophisticated technology with central agency staff, has failed in so many countries that a complete change is necessary.

#### *2.6.5 Association of communities in all stages of projects (planning, construction, financing, operation and maintenance)*

The broad approach which is advocated calls for increased support from the lay community. Efforts must therefore be directed towards promoting local initiatives and then responding to them. Community participation is not just an adjunct of central programmes, an additional requirement imposed by central agencies, some new fad or trend; it is vital to the Decade approach.

The emphasis is on mobilizing the community because past programmes failed to increase coverage rapidly or to operate and maintain the facilities. Agencies have been unable to provide local services to the rural and urban poor; isolated programmes, where they have been attempted, have all too often lacked the social relevance which involving the community helps to ensure, utilizing resources within the community to satisfy community needs.

Some communities, especially in arid and semi-arid areas, are very poor and cannot make any substantial contribution to water-supply and sanitation measures; but most rural and urban-fringe communities can, not only directly through free labour or cash payments but also indirectly through such means as hygiene education of the public (creating awareness among household users in order to improve their surroundings), and diagnosis of

problems and monitoring of programmes by members of communities themselves.

Activities to promote community participation have been summarized by the UNICEF/WHO Joint Committee on Health Policy<sup>16</sup> as follows:

“(i) Operational research, needed for the preparation for participation. Studies are not only important on a country basis, but also in the initial phase at the community level to test reactions and to understand relevant information that will influence construction and operation of facilities.

(ii) Continuing information services, to inform and promote methods of preventing diseases associated with contaminated water and poor sanitation, and to increase awareness of the cost of improving water and sanitation. People need to be informed about the importance of protection, and about operation and maintenance of facilities and services;

(iii) Involvement of the community in decisions, costs, and actions, including (a) helping to plan, select sites, construct, operate and maintain safe water supplies; providing drainage for the removal of water and wastewater; maintaining pumps, communal water points and their surroundings; (b) improving household surrounds; (c) constructing latrines including the fabrication of water seals and latrine slabs; (d) the practising of household hygiene for the sanitary storage, protection, and preparation of food; utilizing clean vessels for the storage of water; and removing and sanitary disposal of solid wastes (garbage) in and around the household;

(iv) Determining appropriate institutional organizations at the village level and delegating authority for organizing and supervising community participation, including managing the water supply and sanitation facilities after construction. While there is no single ideal type of organizational structure, the effectiveness of whatever structure is chosen will depend on an appropriate composition of members. The tasks of these community institutions usually include organization of labour, contribution, cash collection, and operation and maintenance of systems;

(v) Redefining as appropriate the roles, resources, and working patterns of official supportive organizations, particularly where governmental services find that within their infrastructure they have neither the personnel nor the facilities to cope with participation on a large scale;

(vi) The creation of a coordinating mechanism that can effectively function at all levels in cases where the responsibility for water supply rests with more than one Ministry, and thus creates fragmentation of efforts, waste of resources, and competitiveness for participatory actions. Since in many countries the responsibility for sanitation, particularly for rural sanitation, is often completely divorced from responsibility for water supply, appropriate coordinating or linking mechanisms are called for.”

As small water schemes, basic sanitation and hygiene education are to feature more prominently in the Decade, communities and their representatives can play a greater part. Communities can do much more, especially

<sup>16</sup>UNICEF/WHO joint study on water supply and sanitation components of primary health care (WHO document JC22/UNICEF-WHO/79.3).

with the cooperation of permanent agency staff and support services on the spot.

Decentralization of government and of competent agencies is essential to provide the on-the-spot support services to communities. However, it is expensive as it often entails an increase in agency staff which in turn raises recurrent costs. Costs can be kept down if more intermediate-level staff are used. In any case, without the participation of community organizations, the inability to operate with central resources and capacity alone would soon impose the most formidable constraint on attainment of the Decade's targets. Where local government is strong, increasing devolution of responsibilities is consistent with the principle of self-reliance.

Community participation in water supply and sanitation is not a new idea, and it may be asked what there is in the Decade approach that can make it work. First, the Decade should generate greater political will to make it work. Secondly, all the other elements of the Decade approach must, as a matter of policy and strategy, emphasize community participation.

#### *2.6.6 Coordination of water-supply and sanitation programmes with those in other sectors*

The Decade requires links between all sectors involved; first, because the "basic needs" argument will not itself generate enough funds or resources to meet the basic objective of total coverage; secondly, because the local development process and a community's appreciation of its needs do not respect narrow boundaries between different sectors where the problems are closely interrelated.

Rural water supply and sanitation can be found as components in programmes of primary health care, rural development, community development, child health and child care, and water resources development. Collaboration between authorities for agriculture, communications, education, health and public works is usually necessary for the success of such programmes. Urban water supply and sanitation are also closely related to urban land use, housing development, city planning and satellite settlements. Basic urban sanitary services could be successfully included in different kinds of local development programme in order to secure higher priority, more funds and stronger institutional support.

Many of the hopes raised by integrated or intersectoral approaches will prove vain and cause increasing frustration unless the issue of their proper



management is squarely faced and resolved in the Decade. The compartmentalization of agencies and tasks, the rigidity of an allocation of responsibilities strictly according to functions, and the lack of involvement of social groups directly concerned with the programming are common obstacles to the implementation of mutual support programmes. There are other problems: decision-makers in charge of "vertical" programmes in certain sectors may not want to see their activities subjected to new types of coordination; intersectoral programmes have many masters so that overall control of budget, staff and materials is difficult; and management of such programmes has not been impressive. The answer to these difficulties may lie in strengthening the role of lower levels of government. The better the knowledge of the situation, the closer the identification with the problem and with the community to be served. The greater motivation which results will usually facilitate intersectoral planning and programming and the integration of activities at the lower governmental levels.

Poor communities have to increase their incomes if they are to pay for improved services, and the Decade should provide the means for them to do so. Investment in water supply and sanitation has to be looked at in relation to overall development. Water supply and sanitation cannot be made to command more resources simply by being attached to development projects, although urban housing, resettlement and irrigation schemes do command such resources. The point is that the returns are higher if the schemes are links in a development chain. With water supply and sanitation, the social returns are higher if there are health benefits; this is well appreciated. The productivity of those who otherwise have to fetch and carry water over long distances can be increased; this also is well appreciated. Less well appreciated, however, are the ways in which water supply and sanitation have to be further linked with agriculture to increase food production and nutrition, to eradicate or control schistosomiasis and malaria, or to provide compost or algae for cattle feed. Programmes must also be jointly planned with family health, nutrition and health education programmes. Local building materials and equipment are supplied by public or private workshops; the same workshops can produce materials and equipment for other sectors. Community workshops could also repair and maintain equipment for different sectors.

It is not enough simply to appreciate these principles—the Decade must come up with explicit procedures, programmes and means of coordination and planning which provide for funding and support of joint projects. The major weakness of intersectoral programmes is institutional: departments and ministries responsible for traditional sectors resist change. The same problems face primary health care and rural development workers. The solutions that have been found in other endeavours can be used for the Decade.

### 2.6.7 *Association of water supply and sanitation with other health improvements*

The Decade is to bring about improvements in health, not just the construction of more public and private water and sanitation systems. All concerned must join forces to ensure that water and sanitation give better health; it cannot be assumed to occur automatically.

Resolution WHA30.33 of the Thirtieth World Health Assembly on the United Nations Water Conference urged Member States, *inter alia*, to formulate programmes giving specific attention to the prevention of pollution of water sources and the spread of disease resulting from polluted water. Member States were also urged to ensure that people consume water of good quality by periodic inspections of water sources and treatment and distribution facilities, by improving public education programmes in the hygiene of water and wastes, and by strengthening the role of health agencies in this respect.

The association of water and sanitation with health improvement is such that this element of the Decade approach is to be regarded as a problem not of intersectoral coordination but of coordination within the sector.

Water-related communicable diseases are rare in developed countries; levels of development, the high proportion of house connexions, and water-carried sewerage have combined to eradicate the principal causes. The gradual separation of the responsibility for water and sanitation from those of health agencies was therefore unobjectionable. In many developing countries, however, the division of responsibilities for health and for water and sanitation has proved disastrous.

Those who design programmes have to consider the relation of water supply and sanitation to health in a given environment and ensure that improvements will in fact result, instead of merely monitoring or measuring the health impacts of water and sanitation investments. This is the real point in counting water and sanitation as part of primary health care. Preventive measures cannot be delegated to institutions with no responsibility for health. Investment-oriented institutions cannot be expected to promote water use and sanitation for health reasons. The Decade must clarify the role of health agencies in many countries.

If the ways in which better water and sanitation contribute to a general improvement in health and *vice versa* are insufficiently appreciated, the following negative aspects should be considered:

- polluted water and the insanitary disposal of excreta will endanger health;
- lack of personal hygiene may invalidate the benefits of clean water;
- water impoundments and irrigation schemes may increase the risk of malaria, schistosomiasis and, possibly, onchocerciasis;
- improvements in water supply and sanitation will not bring maximum health benefits if other essential components of primary health care—particularly, nutritional improvements, diarrhoeal diseases control, maternal and child health and education—are disregarded.

The weight given to health in water-supply and sanitation programmes will partly depend upon the division of responsibilities between water-supply and sanitation and health agencies, but the attitude of the health agency, as the one primarily responsible, will be decisive. Essentially, the challenge is to relate Decade planning to the planning for health for all. National health development plans should contribute to and accommodate national Decade targets (see also Chapter 3, section 3.6).

## A framework for national action

This chapter interprets the Decade approach (described in Chapter 2) in terms of national plans, programmes and projects. It does not formulate systematic models, methodology or networks but remains problem-oriented, as the need for flexibility cannot be over-emphasized: plans, programmes and projects for each country have to be carefully interpreted and adapted to its needs and conditions. This is a further challenge of planning for the Decade.

The distinction between plans and programmes is important. National plans establish, on a long-term basis, timetables, strategies for implementation (i.e., the Decade approach), goals, targets, mechanisms and overall resources; they are an outcome of the basic political decisions on the priority to be given to the Decade and with respect to such other fundamental issues as community participation and intersectoral coordination. National programmes are those sets of projects and activities deemed most practical in a given country to carry out the plan (see section 3.3, below).

It would be wrong to conclude that the preparation of a plan must precede more detailed programming. Many programmes and projects are already under way, and no plan can be prepared without reference to the existing situation and to information from current programmes and projects. The best plan will be the one benefiting most from an evaluation of experience. Planning and programming for the Decade will therefore run together, often parallel, one focusing on the large perspective, the other on putting decisions into operation.

Many past projects have been recorded as failures, from which agencies must learn first to monitor, evaluate, and sometimes do research on problems. The water and sanitation agencies will be no different from others in this; they should have an internal regular monitoring and evaluation system and be able to call on responsible and knowledgeable research workers. The research should provide not only a more thorough understanding of the issues but also solutions to problems holding up development or extension of programmes.

### **3.1 National action committees and coordination for the Decade**

If the Decade is to develop a dynamism of its own in each country and gain priority amongst a number of other pressing concerns, as well as an identity, a high-level national action committee or similar mechanism, including spokesmen from a number of ministries and agencies, must be given responsibility for national Decade activities. Social relevance and community participation also require representation of nongovernmental organizations with rural and urban-fringe membership. Such committees might be bipartite, dealing with both policy and technical questions. The intersectoral character of some programmes such as those for urban fringes is so pronounced that no agency is likely to be given sole responsibility for them, even with guidance and backing from other departments. For these it may be advantageous to appoint a programme manager and to second key staff from the competent agencies and ministries to report directly to the national action committee. The programme manager would coordinate the activities of the collaborating agencies and ministries.

Existing interdepartmental or other high-level bodies with similar functions might assume such responsibilities, particularly in cases where governments had already decided to implement nationwide rural development programmes or primary health care. Coordination must be achieved not only between sectors but also between all levels of government.

The UNDP resident representative acts as the focal point for international cooperation. The resident representative is supported by WHO's and other agencies' field, regional and headquarters staff, as appropriate, consultants on short-term missions, and staff of bilateral agencies and funding institutions. It is hoped that this will increase the coordination among bilateral agencies and donors.

### **3.2 National planning for the Decade**

The main purpose is to show how, in practical terms, policies and programmes can be implemented by stages, adapting current trends to the objectives of the Decade in countries where the necessary awareness and the will to do so are found.

#### *3.2.1 Formal plans and planning processes*

The Decade plan should be incorporated in the formal plans of governments, many of which have entered a new planning cycle covering the

period 1980-1985, providing a national framework into which planning for the Decade should fit. The national action committees will be aware of the dates in the planning calendar and the dates when the crucial decisions are made. Some governments have temporarily abandoned formal development plans disrupted by the fluctuations of the world economy, and have adopted rolling plans carried forward year by year. This means that the basic decisions are made more frequently. Many groups, organizations and government bodies are involved in planning for the Decade and in view of the fact that excessively frequent decision-making introduces uncertainty, changes in plans from year to year are to be avoided where possible.

Concern with environmental issues involves water resources planning in many countries, especially in arid and semi-arid areas, but the lengthy procedure and the number of other issues and priorities involved are such that it is questionable whether these plans offer a practical framework for Decade planning.

In physical planning, which is usually continuous but occasionally the subject of a separate national initiative or independent regional scheme, the essential issues are: which settlements are to receive priority for enlargement and for new grouping of services; where are the main communications and power lines and water mains going to run; and what are the priorities observed in "zoning" of land?

A plan for the Decade carried forward under the aegis of a national action committee would be a most useful vehicle for certain important functions:

- (1) As a statement of reoriented approaches and other strategies for programme development and implementation it would guide all those working for the Decade in the country. The Decade plan is not intended to analyse the existing institutional framework for water supply and sanitation and propose solutions that generally aim at increasing efficiency; rather it aims to remove underlying weaknesses. The plan would set long-term goals with respect to coverage (and would press for more far-reaching action), and would support programmes to remove the constraints on rapid coverage.
- (2) As a statement of aims the plan would mobilize opinion. Its ability to satisfy a demand for services depends greatly on the extent to which it influences community attitudes. In the ultimate analysis, overall progress in the sector depends on widespread awareness of the benefits people will derive from improved services and on the resulting expression of the demand. This poses a challenge in preparing the plan.

- (3) The plan must set out the agreed policy, mechanisms and administrative arrangements, determine the sectoral and intersectoral tasks for the principal programmes which it will regulate, the allocation of resources and the institutional organization, and establish a timetable for implementation.
- (4) The plan should provide a realistic estimate of the cost of the Decade activities to the country in terms of national and local public resources, and state the case on social and economic grounds for devoting more resources than in the past to water supply and sanitation. It should reassure the national financial administrators that the choice of technology and design criteria and the mobilization of community resources and external contributions would be matched with the national funding requirements.
- (5) Once these functions have been assured, the plan will also be a means, as other development plans have been, to approach donor agencies for support for Decade programmes.

In preparing the plan, the following five points warrant particular attention:

- (1) An assessment should be made of the degree and extent of needs for services according to the country's medium-term potential, relating them to other basic needs that require attention. This exercise, which might last from 2 to 5 weeks, will provide sectoral indicators for minimum standards listed by geographical area, social group, and household and individual health-related behaviour. The assessment will be aimed at determining which activities are cost-effective in terms of their health impact and the meeting of locally appropriate minimum standards.
- (2) Rates of progress in the areas and groups listed should be assessed using the best information available with a view to determining future developments and obtaining information on the strengths and weaknesses in water supply and sanitation as a whole and in the various subsectors.
- (3) Plausible cost estimates would be established according to the types of programmes required, their expected output, and people served. The data should present costs at values for the current year with an indication of current inflation rates, and should cover both investment and recurrent expenditure.
- (4) The resulting orders of magnitude should be shown in relation to outstanding needs in the subsectors, and the data should be arranged to form programme profiles.

- (5) The institutional, legal, fiscal, and other aspects of the plan should be briefly described and scheduled in terms of programme development and policy guidance.

### *3.2.2 Community participation in the planning process*

A contract in the form of an agreed work plan between the community and the local levels of the administration can set out responsibilities for construction, maintenance, operation and repair of equipment and systems as well as details of cash contributions and financing.

At the national level, the national action committee should decide on the best arrangements for consultation and participation for planning and implementation of Decade programmes. Governments should allow ample time for wide consultation with a view to making programmes socially relevant and to mobilizing community initiatives and resources. In the many cases where a rural or district development framework exists, it should be used in the preparation of the plan and its translation into local plans of action.

### *3.2.3 Strategy seminars and national workshops*

A national conference or seminar can provide a short and inexpensive way of stimulating a dialogue on policies and strategies, reviewing and assessing options, determining responsibilities, consulting agencies with a view to cooperation, introducing policy reorientation, involving the mass media, and stimulating open discussion on the reallocation of priorities between sectors and with in the water-supply and sanitation sector. A seminar can, for example, introduce the primary health care approach for community participation.

### *3.2.4 Communication and education*

People can be encouraged and motivated at an early stage to help achieve the objectives of the Decade by the carefully planned use of communications media, which are also a permanent feature of training, support programmes for community participants, and health education. Communications work should stress the close relation between safe water, good sanitation, food hygiene, adequate nutrition levels and health, as well as the meaning of the Decade as an institutional framework. The difference in local traditions, customs and behaviour makes planning and preliminary testing of communication methods for each target group essential. Preparations for and promotion of the Decade should be integrated with all current or planned programmes of health education.



### 3.3 Decade programmes

As noted above, programmes are those sets of projects or activities deemed most practical in a given country to carry out the plan. They:

- set specific targets for a specified period (about 5 years);
- identify priority projects or activities and establish schedules for their implementation on a year-by-year basis;
- specify institutional arrangements and allocate responsibilities, including those for planning and implementation of programmes and for operation and maintenance;
- establish staffing and logistics;
- provide budget and funding mechanisms.

Programmes are implemented through projects or similar activities within geographical areas or subsectors which have been grouped—often arbitrarily—according to the scope of an external assistance grant or loan. What is a programme to a national government may be a “project” to an external agency. Because Decade programmes cover a very large number of small projects, both national and external agencies must conduct their financing planning in terms of programmes rather than projects. Also, project evaluation for large urban or capital-intensive projects will become, under Decade priorities, programme evaluation of a sample of rural and urban-fringe projects and the institutional capabilities, procedures and criteria of the national agency to finance and manage them.

National authorities have often been reluctant to provide sufficient funds for the operation and maintenance of projects in the regular budget, particularly when there is external financial assistance. It may be easier to attract funding for the construction of new systems and for extension than to ensure the efficient and economic running of those in which capital has already been invested. Decade programmes must do both, since the rehabilitation of mismanaged schemes may benefit increased populations. However, where schemes were planned for centralized operation using high-level manpower and expensive imported materials, complete rehabilitation may not be warranted in the light of available funds and manpower, and earlier technology may be profitably modified.

A project may also differ from a programme in that its elements may come from several different programmes. Many Decade projects grouped for external funding may, for example, cover a large rural region (part of the country) but include a training scheme for village and district-level water-

system operators for the whole country. The support component (the training scheme, in this case) is often a difficult one to finance and assist with external resources, and to link it with a coverage project (the rural water-supply project, in this case) is one way of ensuring its implementation. Personality and even political reasons, and inertia, frequently make it difficult at national level to introduce the necessary institutional changes to match Decade approaches. The process may be justified by linking the need for change with an investment project. Thus projects are put together to match immediate financing conditions, while programmes can provide national governments with the means for solving their priority problems; and a country which has no strong programme basis may find that, despite all the effort it devotes to projects, it cannot achieve the desired coverage—the administration is controlled by the project it should be controlling.

A distinction should be made between coverage programmes and support programmes. Coverage programmes seek directly to extend coverage; for instance, by building rural water-supply or water and sanitation facilities. Support programmes reduce constraints; for instance, if a government decides on a plan for the attainment of Decade targets in a large arid area of the country and a total lack of hydrological data makes it impossible to carry it out, a 3-year groundwater study may be required in support of the regional coverage programme.

### *3.3.1 Coverage programmes*

Countries may find it practical to implement the plan through a series of programmes to cover:

- rural areas;
- urban-fringe areas (squatter settlements, slums, shanty towns);
- small and medium-sized towns;
- regions (large water catchments, river basins, geographical areas);
- intersectoral action.

There is one basic requirement all such programmes have to meet, all the way down to the level of the projects through which they are implemented: besides content and resources, they must have a sound institutional base, including arrangements for community participation and the support mechanism that requires.

Once its place in the programme has been identified each project will require:

- a pre-investment study, establishing its technical, financing and managerial or operational feasibility;
- design;
- ensuring the availability of capital and labour for construction, management, operation and servicing;
- funding to meet initial and recurrent costs;
- construction, and
- operation and maintenance.

Once coverage programmes have been formulated and priority projects identified, each project can be implemented and monitored individually by the institutions responsible for the programme. The programmes are defined in geographic terms; they cover towns or villages, or parts of them, individually or in groups, or, if they are regional, specifically delineated areas.

### *3.3.2 Support programmes*

Although each coverage project should include an element of community involvement as part of its machinery for implementation, a country may find it necessary to launch a broad programme for communication and health education in an effort to stimulate community involvement, with the ultimate aim of giving support to its various coverage programmes.

Support programmes may be needed in the following areas, each country having to define needs and content according to the support required by its coverage programmes:

- manpower development;
- communication and health education;
- technology and information;
- health and water-quality surveillance;
- groundwater study.

Again, each such support programme will comprise a series of activities requiring definition, planning and management. Some of these activities may be financed through coverage projects, others may be implemented separately.

### *3.3.3 Striking the balance between coverage and support programmes*

The balance between coverage programmes and support programmes and the urgency and political support to be given to each must be specified in the plan. In many countries support programmes may be more important or pressing than the coverage programmes themselves in the initial stages. Support programmes have often been neglected by the agencies responsible at the national level, and external funding agencies have rarely provided resources to broad support programmes. This tendency will have to be changed in many countries.

## **3.4 Coverage programmes**

The following sections are divided under two headings. Under the heading "Planning considerations", some factors are reviewed which, in the light of the Decade approach, would guide the planning of the particular coverage or support programme. Under the heading "Programme design", examples are given of elements or activities of a programme.

### *3.4.1 Programmes for rural areas*

The organizational and management problems of providing water supply and sanitation to large rural populations scattered over great areas, where the vast majority are poor and lack essential information, have all too often proved insuperable. The Decade, which gives high priority to rural areas, must solve these basic problems.

Rural programmes should be planned in the knowledge that large numbers of rural water-supply and sanitation systems in the developing world have failed. The failure may have occurred at village level owing to the breakdown of a handpump through misuse, lack of spare parts or absence of a technician to install them, or through inattention to routine maintenance because no-one had clear responsibility for this task. Such a failure could force the population to resort to traditional surface water sources—most likely polluted—or to destroy the protective cover of a well in order to reach the water. In more sophisticated supply systems, failure may have been caused by neglect and poor maintenance of pumping and chlorination equipment, entailing excessive expenditure on premature repairs. Decade programmes should incorporate technology appropriate to the local situation so as to make systems easier to operate, maintain, adapt and repair.

### *(a) Planning considerations*

Consideration of a number of questions such as the following has been found to assist in the process of reorienting policy and operation and management approaches for rural water supply and sanitation:

- How many functions and responsibilities can be delegated to the communities or the lowest administrative levels for both water supply and sanitation with a view to planning, implementing and managing greatly expanded and more viable programmes?
- What are the manpower needs at the community level and from the lowest administrative level upwards? What are the minimum training requirements for each level?
- To what extent can communities that cannot afford to use many different types of worker implement rural programmes for the Decade using multipurpose workers and the (seasonally) under-employed?
- Under what conditions, at what points in the planning and programming cycle, and at what levels of implementation should the organization of rural sanitation be linked with the organization of rural primary health care or community water supply? If a broad framework for implementation is laid down at the local level, should coordination be at programme rather than at project level?
- How can the agreed support programmes that are the responsibility of other agencies be integrated with the rural programme? Can procedures for determining and synchronizing support from other agency programmes be improved?

### *(b) Programme design*

Opportunities for encouraging local communities and the lowest administrative levels of agencies to take greater responsibilities and assume more functions, as appropriate, depend very much on how the programme is designed.

The choice of technology for rural water supply and sanitation will depend on the policy decision to extend coverage, the possibility of raising local funds and supplementing them from national sources, and the allocation of responsibilities for operation and maintenance. The choice should be part of the planning procedure, so that technology remains locally adaptable and can be changed. The lower the cost and the simpler the design, the easier it will be to produce, repair, adapt and finance the installation locally,

concentrating, in general, on hand-dug or bore wells, gravity-piped schemes, slow sand-filters for the simple surface treatment of the water supply, and improved pit latrines for excreta disposal. Where larger schemes initially appear to be cheaper than smaller schemes serving fewer people, it should be borne in mind that the development impact of smaller schemes is greater; the logistic problems of operation and maintenance of larger ones are harder to solve; people may have to wait a long time for the larger scheme, while the capital of smaller schemes can be amortized; and small schemes are labour-intensive and involve the community. Small simple schemes can be copied and are better suited for rapid extension of services.

With small water schemes and individual or grouped household sanitation, private operation and maintenance costs are higher but logistic problems are fewer and social costs lower. A decentralized system of operation and maintenance can be established involving the community auxiliaries as well as two or more levels of nonprofessional support and the private sector, but where minimum requirements are not met, and skills are not available, and payments in cash or kind cannot be made to operators, facilities will soon deteriorate, so that government support services and institutions are always indispensable. Responsibility for preventive maintenance and repair, together with logistical planning support, should be shared among community, district, regional and central levels, wherever feasible. Guidelines, manuals and combined institutional and on-the-job training programmes will be needed. It is only worth choosing capital-intensive schemes to minimize operation and maintenance where operation and maintenance are not decentralized.

No one sector can cope with all production and repair needs at the local level. Many sectors or agencies might combine to meet their own and private demands, though it might mean placing orders for spare parts or repair service contracts with local workshops, smiths, garages and youth employment agencies, and supporting them with suitable supervision, advice and credit facilities. The need for standardized parts and equipment, and the location of stores for spares and stock, would have to be decided upon accordingly.

Where it is possible to decentralize operation and maintenance or devolve responsibilities upon lower levels of administration, effective support from an appropriate governmental institution is needed. Central ordering, storage and distribution services for materials and spare parts can be strengthened and replacement and repair facilities developed (e.g., for water meters, handpump cylinders, and vehicle overhaul). The potential for inter-sectoral support must be considered with a view to minimizing cost and increasing effectiveness (e.g., integration with health, agriculture or housing

programmes). Support services may be more effective if provided from the provincial rather than central level because of easy access, knowledge of local needs, and acceptance by the community. Central services will not only gradually improve operation and maintenance but also the overall planning of programmes, the mobilization of resources, and the delivery of sound and viable programmes.

The labour requirements of construction as well as the operation and maintenance of small rural water-supply and sanitation schemes can be very high. Self-help or food-aid arrangements for the work force can make a major contribution if related tasks and supervision are simplified and delegated; with simple, cheap schemes, local contributions are greater. For example, it may be possible to finance a higher proportion of house connexions from the returns brought in by garden subsistence farming without having recourse to greater *per capita* government subsidies after the initial ones. In the main, however, it will be necessary to charge for communal water supply and sanitation, except where people are so poor that to do so would reduce demand to a level so low that health requirements could no longer be met. In order to reconcile broad strategies for coverage with limited national resources, even allowing for national Decade priorities, government *per capita* spending must be kept down. Ways of mobilizing and using community contributions in cash and in kind to cover both construction and operation and maintenance costs have to be accepted as part of rural programme reorientation. To continue high rates of subsidy would slow down the extension of self-sustaining and proliferating programmes and nullify the broad-front strategy. A high government budgetary commitment to the Decade and more external resources will not obviate the need to mobilize local resources to an increasing extent.

External assistance should be encouraged at the programme and not the project level and should, where possible, be calculated in relation to total programme cost so as to include operation and maintenance and other recurrent agency costs. A broad-front strategy for nationwide projects can only be encouraged if all areas are treated equally and none is given special priority in a project listing for external assistance.

#### 3.4.2 *Programmes for urban-fringe areas*

##### *(a) Planning considerations*

Most governments have rural programmes but few have declared programmes for the urban fringe, which can be thought of as covering the

urban poor in squatter settlements, slums and shanty towns. In deciding to carry out such a programme, governments would recognize the urban fringe as requiring priority treatment. This type of programme may require a special arrangement within the organization responsible for the water supply and sewerage of the city to ensure that water-supply and sanitation improvements are coordinated with other improvement programmes for the urban fringe, such as housing programmes.

Urban-fringe living standards may be higher than in rural areas, but are distinctly lower than those of the middle- and upper-income group in the city. Higher standards of service can be applied than in rural areas; indeed they need to be higher because of the greater health risks involved. Even if standards for the urban fringe are lower than for the city centre, some of the costs will usually have to be transferred to the middle- and upper-income groups. Policies to subsidize the urban fringe from more affluent parts of the city should be settled during the planning of a programme. Separation of general housing improvement programmes for the urban fringe from water and sanitation development is often not feasible, and some form of intersectoral and interdepartmental backing is needed. In countries with a large number of towns with urban-fringe problems, special attention may be given to the matter by the national action committee.

#### *(b) Programme design*

Although programmes are specifically directed to solving water-supply and sanitation problems they must be seen in the intersectoral context.

The Decade activities may be promoted through self-help cooperatives and dwellers' association in the urban fringe working for the construction of dwellings, for schemes to provide on-site services ("site-and-service schemes"), or for rehabilitation and improvement programmes. They are spontaneous movements, often with little official backing.

When subsidies are arranged, special credit institutions must be found that are willing to cover loans for very low-cost housing or housing improvements for slum dwellers or their representative institutions, and the arrangements should be integrated with the city's overall financial plan for water supply and sanitation.

If site-and-service schemes and housing rehabilitation are to proceed, land must be purchased, allocated and provided with mains services. Rehabilitation projects may involve temporary moving of residents, with the considerable social planning problems accompanying removals.



Support can be provided for purchase, stocking and construction; accommodation can be built slowly, house by house. Core water and sanitation units can be laid down first. If possible, support should be directed through self-help cooperatives or associations, but sometimes agencies will undertake construction of the core units themselves. The same applies to the building of communal lavatories or wash-rooms.

Other national programmes will provide material for guidance and education in schools. The urban-fringe programmes can provide assistance and promote action through public and semi-public bodies, through non-governmental organizations and through health and community welfare agencies.

Many of the operational problems associated with the urban fringe can be attenuated with the greater use of junior nonprofessionals and community or municipal auxiliary staff. They would be relied upon to prevent wastage and report and correct breakdowns and defects in both water and sanitation systems, thus reducing costs.

It is not envisaged that urban-fringe programmes would require special measures to provide water mains or water treatment; rather, they must extend existing services.

### *3.4.3 Programmes for small and medium-sized towns*

#### *(a) Planning considerations*

Smaller towns frequently provide poorer services than cities, partly because centralized agencies have concentrated on improvements for metropolitan areas, but partly because market towns are designed in national planning as focal points for rural development. These towns particularly require Decade support. How this support is to be provided is the subject of debate, notably as to whether agencies should give special recognition to the priority of small and medium-sized towns.

Central agencies are better placed to extend services for towns than for rural areas because towns are limited in number and area and the degree of decentralization necessary is much less. The more autonomous the municipal authorities become in financing and operating services, the more the central agency will need new links with the municipal agencies. This may require new legislation. The following four points should be borne in mind.

- (1) Smaller municipal agencies suffer from having to compete with larger municipalities for capital and services. Capital and services should be suited to the ability of the towns to meet their own costs.
- (2) The benefits of decentralization to semi-autonomous municipal agencies more closely involved in community activities are frequently lost in poor management—whether in water and wastes leakage control or in making out bills and collecting payments—with inadequate accounting and planning. If the benefits are not to be sacrificed, central support for management will have to be increased.
- (3) It may sometimes be better to support the municipal agencies indirectly through some kind of common services system than directly through subsidies. Low-cost alternatives to municipal sewerage are particularly suitable for smaller towns.
- (4) Most larger cities have some form of storm-drainage and waste-water system and an increase in water supply in smaller and medium-sized towns poses the same problem, so that the health benefits of drainage should always be explored in programming for them.

*(b) Programme design*

Support in improving coverage should include:

- institutional support for financing and management of municipal agencies;
- studies of groundwater and other new sources of water supply;
- assessment of sanitation and its improvement as appropriate;
- training programmes for municipal agency staff.

It is essential that a national agency or the ministry assesses which functions the municipal agencies cannot afford and establishes a mechanism to provide the necessary support.

*3.4.4 Regional programmes: planning considerations*

A regional scheme, combining rural and urban areas, may involve the development of large water-catchment areas, river basins, or major groundwater sources. Such schemes have been carried out with the aim of reducing costs and facilitating operation and maintenance, or for specific technical reasons, and central agencies are usually better equipped to deal with these

types of programmes than with any others. The major innovation of the Decade will be a stricter assessment to ensure the provision of services to the target population and to secure maximum economic and social benefit without wasting the resources needed from other Decade programmes. The criteria applied in this assessment would partly depend on whether or not resources were available for other Decade priorities besides those of regional schemes, since these use scarce high-level manpower, are capital-intensive and require more imported equipment, may cover less of the target population than several smaller programmes, are difficult to integrate with self-help or community participation, and have less local impact on development.

Water-supply and sanitation schemes are sometimes associated with new irrigation schemes, which may justify regionalization. However, apart from cases where development costs can be written off and where there is no competition for resources with other Decade priorities, regional programmes are on the whole not likely to be consistent with the Decade approach.

#### *3.4.5 Intersectoral programmes*

##### *(a) Planning considerations*

Coverage can also be increased to meet Decade targets by ensuring that water supply and sanitation are included in other principal development programmes such as those for integrated rural development, primary health care, community development, land settlement and resettlement, and irrigation. Each of these programmes may have its own organization or coordinating structure; special arrangements for coordination with Decade activities may therefore have to be made. Although the coordinating machinery for the Decade may be responsible for provision of water-supply and sanitation coverage in fulfilment of the Decade plan, other sectoral or intersectoral programmes will sometimes have to include their own water and sanitation components.

Rural development programmes may have their own ministerial coordinating committee to reinforce authority. The national coordinating machinery for the Decade can assign responsibilities to health authorities or water and sanitation agencies to ensure coordination in their sector, but coordination with other sectors, such as agriculture or housing, will sometimes exercise the initiative of the Decade machinery at a higher level. The fact that other ministries or coordinating committees, such as ministerial rural development coordinating committees, have responsibility for assembling certain components must not preclude liaison and innovation by the

coordinating machinery for the Decade with respect to components of its own programme. The Decade machinery cannot wait for finalization of rural development, site-and-service, resettlement or primary health care programmes but should take initiatives and make the contribution required by its mandate.

A principal instrument of coordination is the programme document specifying agency-department or ministerial contributions and responsibilities; the specifications are likely to be followed at the technical level once the political decision to work together across sectoral boundaries has been reached. It is sometimes useful to appoint a senior officer with a small secretariat to run an intersectoral programme, especially where the machinery of coordination at the technical level is weak, as liaison between the technical staff responsible for Decade coordination and the technical secretariat of other important programmes can be the best way to successful programme coordination.

Another instrument of coordination is strong local (district or provincial) administration allowing effective planning of programme phasing and integration, and providing an important link with the Decade coordinating machinery.

#### *(b) Programme design*

Coordinating functions are the only components of programmes at the planning stage. If a government wishes to subsidize Decade components in the programmes of other sectors, special financing would have to be sought as part of the programme at that stage, and those responsible for coordination would also be responsible for that aspect.

### **3.5 Support programmes**

The following sections, like those of 3.4 above, are divided under the heading "Planning considerations" and "Programme design".

#### *3.5.1 Programmes for manpower development*

##### *(a) Planning considerations*

Whether in the public or the private sector, staff properly trained and strongly motivated to provide effective water and sanitation services

in an efficient manner are lacking in most developing countries. Conservative estimates are that about 100 000 more must be trained and employed annually during the Decade if its targets are to be met. Maximum use of community resources and manpower will therefore have to be made, water supply and sanitation being essential to primary health care. The community worker will be a big element in implementing the Decade.

Countries must become more aware of the training support requirements of any new water-supply and sanitation programmes, considering manpower development and training as an integral part of Decade planning. The same clearly applies to the training of operations and maintenance staff for projects that include investments in equipment.

Emphasis on minimum standards for the services yet to be provided increases the demand for simple skills to match the simple water and sanitation systems proposed. The proliferation of self-sustaining programmes will have to be encouraged by increasing on-the-job training and giving greater responsibilities to more junior staff. All senior staff will be expected to assume some in-service training responsibilities.

Besides the need for recruitment and redevelopment of community-based auxiliaries for water-supply and sanitation work in their own areas, intersectoral demands at local level will require more common training programmes for workers in health, community and rural development or businesses in the private sector. This raises the question how much training can be carried out within specialized institutions and how much will be left to individual agencies; the more health workers are expected to work in water supply, or water-supply operators on sanitation or other projects, the less satisfactory any single agency's training will be. Training will vary according to whether or not health agencies are responsible for small water schemes as well as sanitation.

If public health inspectors and officers are more numerous than water agency staff in rural areas, they may be eligible for retraining to coordinate the work of community auxiliaries.

Overall manpower development and training will hardly be worth the effort unless governments implement the necessary institutional changes, creating or upgrading posts and paying staff during training. Many water-supply and sanitation agencies have no career development policy, yet priorities for the Decade require it, since if promotion and pay conditions are better for urban "prestige" projects it will be difficult to keep trained personnel working for the Decade.

### *(b) Programme design*

The manpower development and training strategy of a country will reflect the aims of the Decade. The following activities deserve particular attention in the design of a support programme for manpower development:

- the elaboration of national manpower development schemes as part of the overall plan;
- the expansion of existing and establishment of new national and regional vocational/technical training institutions to cater for middle- and lower-level craftsmen for water-supply and sanitation.
- the special promotion of training for multipurpose front-line workers (community health workers);
- the development of teaching/learning materials, including manuals, guidelines and visual aids;
- the establishment of crash training programmes to meet urgent needs;
- pressure for the inclusion of training schemes in the institution-building component of coverage projects.

### *3.5.2 Programmes for communication and health education*

#### *(a) Planning considerations*

There are two major areas of activity in a communication and health education programme. First, it coordinates the supply of guides, manuals, visual aids and teaching aids for staff, including community auxiliaries. Secondly, it organizes health education, sometimes treating the hygiene education aspects separately if that is appropriate in given circumstances.

Each programme probably requires its own manuals and teaching aids, but the following common factors argue in favour of a coordinating unit:

- assisting lower-level staff and community auxiliaries to learn new tasks and accept greater responsibilities;
- ensuring the use of methods of information suitable for each level of activity and especially for target communities;
- avoiding duplication in the supply of teaching aids and providing information relevant to the needs of different programmes in a single process.

The organization of health education is most effective when incorporated in specific health sector or other programmes. Countries will indicate which channels are most suitable to them; it may be school curricular development, family health and nutrition programmes (using traditional midwives, district nurses or other community health auxiliaries), primary health centre activities, or actual water supply and sanitation.

Mass media may be used in a more general way to supply the target communities with information on health and hygiene, the need for safe water supplies, health education and other Decade activities. The aim is to find acceptable media and to devise messages that will stick in the minds of the rural and urban poor. Information can sometimes be incorporated in entertainment, sometimes communicated explicitly and directly, depending on the social context. Mass-media programmes—though costly and beset with administrative and logistic difficulties—can be highly effective in creating and increasing awareness of the advantages and disadvantages of change, and later in informing the public of the means of building, using and maintaining wells and latrines. However, where there are social, cultural and behavioural barriers to such education methods mass-media programmes should be combined with informal discussions and meetings with representatives of selected groups of the population.

There are clear advantages in combining communications work for community development and primary health care with education programmes for the Decade. The close relation of water-supply and sanitation programmes aiming at community participation to communication and education programmes may be a reason for amalgamating them. Talking to people in order to learn to appreciate their problems and find solutions is a form of communication necessary also to encourage community participation. Where it is decided to separate community participation and communications programmes it is worthwhile considering the inclusion of a major communications element in the former, covering all aspects of the dialogue with communities and the choice of the media and the message, so as to ensure liaison with the latter.

#### *(b) Programme design*

It is suggested that support programmes for communications and health education might include:

- manuals, guidelines and visual aids for all Decade coordinating units (possibly incorporating material on other rural development and primary health care activities);

- programmes of health education for schools;
- programmes of health education for families, mothers and children;
- health education specifically related to water-supply and sanitation coverage programmes;
- radio programmes;
- other mass-media programmes.

### 3.5.3 *Programmes to encourage community participation*

#### *(a) Planning considerations*

The involvement of communities in coverage programmes is one of the principal features of Decade activities. A permanent national support programme might be set up to promote such involvement and devise support methodology. How large this should be would depend on whether similar support programmes exist or are planned for primary health care or for rural development and urban renewal. It would provide the necessary policy framework for deciding the part to be played by communities at each level of service programme activities, as well as ensuring constant daily contact between community support and coverage programmes. Its viability as a policy framework would be enhanced by the adoption of procedures for determining the needs of selected communities.

The community participation support programme increases the range of tasks in programmes for the Decade that can be done by community representatives, traditional organizations and auxiliaries in cooperation with local administrations. Where the need for rapid progress conflicts with a broad policy involving communities in coverage programmes, the support programme can represent the latter.

The area covered by the community participation support programme should be set within certain limits, which may, however, remain flexible, and could be measured in the same units as those recommended for primary health care, i.e., a cluster of farms, an organized group of villages, a town or a city district. The types of organization involved may range from elected bodies to committees specially appointed for the Decade or health committees, and may also include local nongovernmental organizations such as women's associations and youth and other organizations.

Staff of these support programmes must respond with sensitivity to local attitudes to water supply and sanitation and maintain close contact with com-



munity representatives, and staff of communications and health education programmes will need their advice on types of information required and suitable methods of dissemination. Close links will be forged with each coverage programme, the support programme usually acting independently only during the early stages, in ascertaining community needs and priorities and in promoting, motivating and strengthening participation by the community's institutions.

The success of community participation programmes applying the procedures worked out in the support programme will depend upon the approach and strategy adopted at higher planning levels and incorporated in the programme budget. Without a national lead the community participation programme will be ineffective. Ideally such a programme should come directly under the responsibility of the national action group or the ministry of health or community development so that the links with primary health care are strengthened.

One major difficulty in community participation in water-supply and sanitation activities with the local administrative units of a central government is the absence of a suitable form of community contract in which the obligations of both the community and the central government institutions are made clear, particularly as they apply to financing, self-help, operation and maintenance, and intersectoral follow-up. The community participation support programme could provide a major stimulus in bringing the parties together to negotiate a community contract.

#### *(b) Programme design*

Support programmes for community participation should include:

- surveys and studies of community attitudes, needs, means of communication and organizations involved in water supply and sanitation;
- measures to motivate communities and strengthen local community institutions;
- liaison with national, international and nongovernmental organizations;
- policy framework for decisions on the tasks for which the community is to be given responsibility, on the form of a community contract model, on financing and self-help in relation to other community programmes, and on inputs into coverage programmes for the Decade.

### 3.5.4 *Programmes to provide information and technology*

#### *(a) Planning considerations*

Information is essential for the design, management, operation and maintenance of water-supply and sanitation facilities if programmes are to meet the criteria of cost-effectiveness, simplicity of operation, maintenance and repair, and are to encourage community participation. There is general agreement that the principal constraint is not the lack of such information but rather failure to disseminate it both within and between countries following the relegation of its collection and use to a low priority.

Information programmes for the Decade consist largely of water-supply and sanitation technology, and the choice and adaptation of appropriate technology depends partly, sometimes largely, on the availability of information. The interdependence of information and technology makes it recommendable to include them under the same programme.

To provide information and technology for the Decade is not an end in itself. The overall objective is to facilitate and encourage a choice, from among the vast mass of information available, of techniques which can be used in designing a particular programme or project, be it for coverage or support; the information must help in the first instance in selecting technology appropriate to meeting particular needs, and in the second in finding the context in which the technology could best be applied. Thus information on both hardware and software technology is required.

The scope for reducing costs and for making simple innovations in design and operation of installations for water supply and sanitation is limited, and in the gathering and dissemination of information efforts may be directed more to the application of available but underutilized technology, to the transfer of suitable technology to countries which are unfamiliar with it, and to the adaptation of known techniques to local materials, needs and attitudes. This would involve comparatively little pure research at the country level, although research leading to the local manufacture of equipment or to effective community participation might have a compound effect on development.

Responsibility for the dissemination of information is not always clearly defined, and in general the ministry and the agencies active in water supply and sanitation are fully occupied with the planning, formulation and implementation of projects. Information studies may not be promoted, and if they are the information resulting from such studies may not be efficiently collected, collated, disseminated or used. There is usually no authoritative

national body that meets regularly and can make binding decisions for the choice of technology. Governments must therefore be convinced of the need to create or strengthen such authority for collecting, processing, exchanging and transferring information and for making decisions about the choice of technology. The responsible body should be located as is most expedient, i.e., within the agencies operating in the sector or, alternatively, in other governmental or semigovernmental institutions, libraries, information centres, universities, or training centres.<sup>17</sup> Only relevant and usable information should be collected, although it may require elaboration at each level of use.

In the light of the policies for the Decade, which stress the importance of communication and the development of community-based programmes, the information support network would also in particular provide links with:

- government field service staff, primary health care workers and community development staff;
- voluntary groups such as cooperatives, women's associations and youth groups, and professional associations;
- the information media, including radio, television, film and press services. Close relations should be established with national support programmes for communication and health education and for community participation in the Decade.
- the national manpower development infrastructure and related programmes for the Decade.

In order to accelerate sector development, information exchange and transfer will have to be activated in meetings, workshops, seminars and training sessions and supported by training and employment aids, in particular for on-the-job training and self-instruction.

Available knowledge and experience about community water supply and sanitation differ significantly among countries in a region and among regions. Considerable savings can sometimes be made by acquiring and applying information from other sources. A national support programme for technology and information should therefore have appropriate regional and international connexions.

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<sup>17</sup> Where academic institutions are chosen to act as information centres, they must be supported by a decision-making body in the choice of technology and equipment, because strong commercial interests are often involved.

*(b) Programme design*

Any support programme for information technology is likely to include the following:

- measures to strengthen infrastructure and institutions with a view to the establishment of a national information network linked to regions and international centres; these measures may vary from country to country, but promotional workshops, training of staff involved and provision of physical facilities and material will always be important;
- a programme of exchange of designated staff between countries and between national, regional and international institutions;
- specific activities for the transfer of information, such as meetings, workshops, seminars;
- selection, introduction and field-testing of specific designs and techniques or approaches in order to establish their acceptability and economic and technical feasibility; and
- manuals and guidelines for use as national training and reference material.

*3.5.5 Programmes for health and water-quality surveillance*

*(a) Planning considerations*

Water-supply improvements should not be introduced without sanitation and health education; piped water systems where water treatment produces a product of a lower standard than traditional sources are useless; and water development schemes (whether for irrigation, dams or reservoirs) that increase the risks of tropical diseases are worse than useless. This underlines the increased importance, for health and water quality, of surveillance programmes, which do not necessarily imply more investment in expensive laboratories and training facilities for highly-qualified laboratory technicians. The first priority is to provide for areas where services are known to be deficient and health risks high. Yet monitoring, surveillance and remedial action for disease prevention must be applied to all Decade programmes. The WHO *International Standards for Drinking-Water*, now under revision, will take into account not only community piped water supplies but also community standpipes, community wells and individual supplies; they will contain not only limits of various water constituents but also guidelines on their practical application.

Water-supply agencies have a primary responsibility for the selection of sources and for the quality of water supplied, particularly when it is treated; health agencies will normally undertake regular surveillance of the sanitary conditions at rural water sources and of the quality of water for consumption. If Decade activities are viewed in the light of primary health care, particularly in rural and urban-fringe areas, it will be easier for health agencies to participate effectively.

*(b) Programme design*

Programmes for health and water-quality surveillance in support of Decade activities should include:

- assessment and selection of water sources and consideration of social factors determining appropriate protective measures;
- establishment or strengthening of water-quality surveillance at all stages of development and distribution, with provisions for remedial action as required;
- staff training, including reorientation for public health inspectors, sanitarians, waterworks operators;
- strengthening or streamlining of laboratory services for bacteriological, chemical and physical testing of samples from rural and urban areas; and
- Preparation of manuals and guidelines based on the standards adopted and relevant legislation.

*3.5.6 Programmes for groundwater studies*

*(a) Planning considerations*

Groundwater may provide a source of safe supplies to scattered communities in many areas at relatively low cost and with little or no treatment, which would make it attractive to those working for the extension of water supply. However, lack of sufficient information on available quantities (i.e., safe yields) of groundwater is a major obstacle to expediting such development, at least during the early years of the Decade. Most developing countries have only recently initiated surveys and studies of their resources and it will be several years before sufficient information is available to allow a

rational allocation and exploitation of these resources. Without reliable surveys, it will be impossible to guarantee the continuity of water supplies for future generations, but the surveys are costly and considerable time is required for data gathering, analysis and dissemination. The degree of reliability is directly dependent upon the thoroughness of surveys and of record-keeping, which in the industrialized countries may go back over a hundred years. Where large quantities of water are required for densely populated and urban centres special care must be taken that adequate investigations of water resources precede heavy financial commitment, as failure of the system owing to a significant miscalculation of yields would mean that greater losses would be incurred than in small rural schemes.

Neither time nor financial and institutional resources are likely to be adequate during the Decade fully to satisfy these requirements. Therefore, cheaper and faster methods such as reconnaissance, aerial photo-interpretation and geomorphology, and limited drilling to find groundwater resources, must be accepted, especially for the rural areas. Decade commitments make it inevitable that greater risks in source selection should—at least initially—be the price paid for accelerating the development of water supply and that greater flexibility should be shown in the planning of new systems in the areas where insufficient information is available about water resources.

The initial objective would be that a maximum of rural communities should use shallower wells so as to minimize the requirements for deeper, drilled wells.

#### *(b) Programme design*

In the design of support programmes for groundwater studies the following points should be given particular attention:

- training of personnel capable of conducting the necessary investigations and drilling and developing wells for exploration of resources;
- protection and control of pollution of aquifers or, at the village level, prevention of inflow of surface water;
- water conservation and the avoidance of over-exploitation, especially important in regions where water is scarce, and, where necessary, artificial recharging of groundwater aquifers, either with seasonal floodwaters or with reclaimed waste-water; and
- extension and strengthening of the systems of storage and retrieval of hydrogeological information for the detailed mapping of resources.

### **3.6 The role of health agencies in the Decade**

Health agencies face two inherent problems: many of their staff are not interested in water supply and sanitation; and those who are may be regarded as interfering by the staff of water-supply and sanitation agencies. The emphasis on intersectoral approaches for the Decade might also be regarded as depriving health agencies of the initiative. On the other hand, within the framework of the Decade—and more significantly within the context of primary health care—health agencies must play a major role, but they must tackle any problem of conflicting interests at the outset if they are to do so. They will be better able to take the lead in intersectoral coordination and promotion if Decade activities are conducted as part of a major primary health care programme.

By strengthening health infrastructures to cover the whole population, and supporting health programmes that use these infrastructures, health agencies will be in a stronger position to implement their Decade activities. There is no substitute for strengthened Decade support programmes and primary health care infrastructures. Vertical programmes operating outside the permanent infrastructure can only yield transitory benefits and leave behind a legacy of distrust; they are inconsistent with the recommended WHO strategies for the Decade.

It is easier for the health agencies to organize integrated health, nutrition, water and sanitation programmes if they are responsible for rural water supply or small rural water-development schemes in addition to rural sanitation. However, in most cases they have responsibility for rural sanitation, where they have a major role to play—especially when water-carried sewerage is not feasible—and merely coordinate with other agencies with respect to rural water supply. Health agencies must be prepared to develop sufficient infrastructure to provide well-supported, broad-based programmes and to integrate them with family and child care and communicable disease control programmes.

Health agencies should be responsible for or closely involved in information and health education as well as community participation in Decade programmes. This again is easier in the context of primary health care.

Health and water-quality surveillance programmes give the health agency another major responsibility, which is sometimes extended to include the following:

- selective monitoring and evaluation of Decade activities on behalf of the national action committee;

- checking programme design and implementation to ensure they do actually have health impacts; and
- improvement of protection of water sources.

Health agencies can further increase their contribution by:

- ensuring that communicable disease and epidemiological services regularly indicate where environmental factors are major causes of disease;
- coordinating communicable disease control and immunization programmes with preventive aspects of water-supply and sanitation programmes;
- using health laboratory services to identify sources of safe and of polluted water;
- training multipurpose community and district workers and supervisory staff in environmental health tasks and related education;
- providing maternal and child health and family health care that concentrates on breaking the chain linking poor hygiene, diarrhoeal diseases and malnutrition;
- establishing or strengthening community health committees and health centres as part of primary health care, and ensuring adequate training in environmental health promotion, monitoring and referral.

Above all, health agencies must strengthen their own divisions of environmental health. Others will be prepared to make their contribution to environmental health once they see that it is receiving higher priority and more resources. The allocation of functions to each division or department can be planned and agreed in the course of preparation of plans for health for all in a truly multidisciplinary and intersectoral spirit.



*Annex 1*

**United Nations Water Conference—Resolution II and Plan of Action<sup>1</sup>**

**Resolution II. Community Water Supply**

*The United Nations Water Conference*

*In view of* the course taken by the discussions and the aspirations of the countries represented at the United Nations Water Conference and in view also of what was proposed at Habitat: United Nations Conference on Human Settlements, and

*Considering that:*

(a) All peoples, whatever their stage of development and their social and economic conditions, have the right to have access to drinking water in quantities and of a quality equal to their basic needs;

(b) It is universally recognized that the availability to man of that resource is essential both for life and his full development, both as an individual and as an integral part of society;

(c) To a significant extent similar considerations apply to all that concerns the disposal of waste water, including sewage, industrial and agricultural wastes and other harmful sources, which are the main task of the public sanitation systems of each country;

(d) The fundamental challenge facing all mankind can be met only with full international co-operation in all its aspects, entailing the mobilization of physical, economic and human resources;

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<sup>1</sup> *Report of the United Nations Water Conference, Mar del Plata, 14-25 March 1977*, New York, 1977, E/CONF.70/29 (United Nations publication, Sales No. E.77.II.A.12), pp.66-70.

(e) It is imperative to facilitate ways of achieving this essential co-operation, so that water is attainable and is justly and equitably distributed among the people within the respective countries;

(f) Those countries which are in a position to provide assistance, as well as international or regional organizations, should undertake to do so until the objective is attained, seeking to simplify regulations and administrative arrangements;

(g) Organizations of the United Nations system and other international organizations are making progress towards possible establishment of a consultative group mechanism on community water programmes.

### *Recommends*

(a) That where human needs have not yet been satisfied, national development policies and plans should give priority to the supplying of drinking water for the entire population and to the final disposal of waste water; and should also actively involve, encourage and support efforts being undertaken by local voluntary organizations;

(b) That Governments reaffirm their commitment made at Habitat to "adopt programmes with realistic standards for quality and quantity to provide water for urban and rural areas by 1990, if possible";

(c) That with a view to achieving these ends, the nations which need to develop their systems for providing drinking water and sanitation should prepare for 1980 programmes and plans to provide coverage for populations and to expand and maintain existing systems; institutional development and human resources utilization; and identification of the resources which are found to be necessary;

(d) That the United Nations agencies should co-ordinate their work efforts to help Member States, when they so request, in the work of preparation referred to in subparagraph (c) above;

(e) That in 1980 the national programmes which have been implemented for that purpose, and the extent to which the countries concerned have succeeded in mobilizing local and national support should be reviewed by an appropriate mechanism to be determined by the Economic and Social Council and based on the use of existing machinery, with a view to attaining co-ordinated action toward agreed targets;

(f) That in accordance with the decisions of the existing structures of the Economic and Social Council, appropriate external assistance should be available in order to assist in building, operating and maintaining these systems;

(g) That the Plan of Action formulated below should be implemented in a co-ordinated manner at the national and international levels.

## PLAN OF ACTION

In order to be able to reach the targets of Habitat recommendation C.12, drastic measures have to be taken. This will need firm commitment on the part of countries and the international community.

### A. *Priority areas for action*

1. Action must focus on promoting (a) increased awareness of the problem; (b) commitment of national Governments to provide all people with water of safe quality and adequate quantity and basic sanitary facilities by 1990, according priority to the poor and less privileged and to water scarce areas; and (c) larger allocation to this sector from the total resources available for general economic and social development.
2. Action must be taken to remedy constraints of manpower shortage (especially at the intermediate and lower levels), inadequacies in institutions and organization, and lack of appropriate and cost-effective technology.
3. New approaches should be developed which will result in larger flows of national, international and bilateral funds on more favourable and flexible conditions, so as to enable countries to increase the speed of implementation and, more important, enable the more effective use of the additional resources.
4. Communities must be provided with effective education on domestic hygiene and must be motivated and involved as appropriate at every level of the programme, including the planning, construction, operation, maintenance and financing of services, and the monitoring and safeguarding of the quality of the water supplied.

### B. *Recommendations for action at national level*

5. Each country should establish goals for 1990 which match as far as possible the global targets adopted. In order to attain these goals, each country should:

(a) Develop national plans and programmes for community water supply and sanitation, and identify intermediate milestones within the context of the socio-economic development plan periods and objectives, giving priority attention to the segments of the population in greatest need;

(b) Immediately initiate engineering and feasibility studies on projects that are considered to be of the highest priority, and are based on a cost-effective technology appropriate to local conditions, with community participation, good management, and provision for operation and maintenance;

(c) Assess the manpower situation and, on the basis of this assessment, establish training programmes at the national level, to meet the immediate and future needs for additional professional staff, intermediate level technicians and, most important, village technicians;

(c) Promote massive national campaigns to mobilize public opinion regarding the provision of basic sanitary services, and develop appropriate procedures to ensure the active participation of communities in the programme;

(e) Establish appropriate institutions, if these do not exist, and assign to them specific responsibilities for the planning, implementation and monitoring of progress of the programme;

(f) Co-ordinate the efforts of all sectors active in rural areas, utilizing the manpower and other resources available, to ensure the provision of technically and socially acceptable sanitary facilities in rural areas;

(g) Develop a national revolving fund, in the first instance financed from substantially increased loans and grants from national and foreign sources, for water supply and sanitation which will encourage both the mobilization of resources for this sector and the equitable participation of beneficiaries; discourage wasteful consumption; and include a flexible combination of rates and, where necessary, explicit subsidies or other measures designed to achieve the economic and social objectives of the programmes.

### *C. Recommendations for action through international co-operation*

6. To achieve the Habitat targets, the international community must adopt new approaches to support increased national commitments with particular reference to the least developed and most seriously affected countries. It is, therefore, recommended that:

(a) Financial contributions be increased to strengthen the capabilities of international and bilateral agencies co-operating with Governments in the extension of community water supply and sanitation;

(b) At the request of national Governments, co-operation be extended to the formulation and implementation of high priority projects and programmes for community water supply and sanitation, with analysis of goals, methods and resources;

(c) Collaboration with the ongoing activity of the World Health Organization for monitoring and reporting on the status and progress of community water supply and sanitation be intensified.

7. The international community should give high priority to collaborating with Governments with regard to manpower surveys, the establishment of national training programmes (to meet immediate and future needs for professional staff, intermediate level technicians, and village technicians), research, and the promotion of community participation.

8. There should be even greater emphasis on social benefits. Multilateral and bilateral financing institutions should recognize the need for a higher level of grants and low interest-bearing loans to community water supply and sanitation programmes and, where this practice is already accepted, increase the proportion of such loans. They should be prepared to shoulder a higher proportion of local costs when financing community water supply and sanitation, increase their total allocations especially to rural water supply and sanitation, and complement local efforts in the rehabilitation and maintenance of systems.

9. Developing countries should foster co-operation among themselves, *inter alia*, in the establishment of intercountry training facilities; the development of appropriate technologies and of methodologies for training and management, and the exchange of experts and information, so that experience available elsewhere can be adapted to local conditions.

10. An effective clearing-house mechanism should be developed through international co-operation, by strengthening existing mechanisms if available, at the national, regional and international levels, to provide for the communication of selected information concerning all elements of community water supply and sanitation. An interrelated communication function should be included at every stage in all community water supply and sanitation projects.

11. Regular consultations should be held among Governments, international organizations, the international scientific community and relevant non-governmental organizations to ensure co-ordinated and accelerated action in the area of rural water supply and sanitation.

12. Co-ordination within the United Nations system should be improved at country level in order to ensure (a) a multidisciplinary approach in the development of community water supply and sanitation services; and (b) that rural water supplies and sanitation form part of integrated rural development projects.

*Annex 2*

## **Resolution 35/18 of the General Assembly of the United Nations**

### **Proclamation of the International Drinking Water Supply and Sanitation Decade, 1981–1990**

*The General Assembly,*

*Deeply concerned* that a large portion of the world's population does not have reasonable access to safe and ample water supplies and that an even larger part is without adequate sanitation facilities,

*Concerned also* that the plight of that population will not improve significantly unless there is a major commitment and effort on the part of Governments and of the international community to bring about the necessary changes,

*Recalling* that Habitat: United Nations Conference on Human Settlements<sup>1</sup> called for Governments to adopt programmes to provide safe drinking water for all by 1990, if possible,

*Recalling further* that in the Mar del Plata Action Plan the United Nations Water Conference called for the designation of the period 1981–1990 as the International Drinking Water Supply and Sanitation Decade,<sup>2</sup>

*Noting with satisfaction* the growing efforts by Governments and by intergovernmental and non-governmental organizations, in response to that Plan, to increase the flow of technical and financial co-operation to developing countries in water supply and sanitation,

*Recalling also* its resolution 34/191 of 18 December 1979, by which it decided to hold a special one-day meeting to launch formally the International Drinking Water Supply and Sanitation Decade,

<sup>1</sup> See *Report of Habitat: United Nations Conference on Human Settlements, Vancouver, 31 May–11 June 1976* (United Nations publication, Sales No. E.76.IV.7 and corrigendum), chap. II, recommendation C.12.

<sup>2</sup> See *Report of the United Nations Water Conference, Mar del Plata, 14–25 March 1977* (United Nations publication, Sales No. E.77.II.A.12), and corrigendum, chap. I, para. 15.

*Bearing in mind* resolution 25, entitled “International Drinking Water Supply and Sanitation Decade”, adopted on 30 July 1980 by the World Conference of the United Nations Decade for Women: Equality, Development and Peace,<sup>3</sup>

1. *Proclaims* the period 1981 – 1990 as the International Drinking Water Supply and Sanitation Decade, during which Member States will assume a commitment to bring about a substantial improvement in the standards and levels of services in drinking water supply and sanitation by the year 1990;
2. *Calls upon* Governments which have not yet done so to develop the necessary policies and set the targets to this end, to take all appropriate steps for their implementation, to set sufficiently high priorities for the activities concerned and to mobilize adequate resources to achieve their targets for the Decade;
3. *Urges* Governments to strengthen, as appropriate, their institutional frameworks for carrying out these activities, to mobilize the necessary technical expertise at all levels and, in general, to heighten popular awareness and support through education and public participation programmes;
4. *Calls upon* Governments, organs, organizations and bodies of the United Nations system and other intergovernmental and non-governmental organizations concerned to continue and, if possible, to increase their technical and financial co-operation with developing countries in order to enable them to attain the targets they have set, and to continue also their efforts to co-ordinate their activities so as to maximize the impact of their assistance to developing countries;
5. *Calls upon* the regional commissions to review periodically, on the basis of national reports, the progress being made by the Governments of their respective regions in establishing national targets and carrying out programmes to attain those targets;
6. *Decides* to review at its fortieth session the progress made towards the attainment of the Decade’s national and international goals, as outlined in the reports of the Secretary-General concerning the present situation and prospects relative to the Decade<sup>4</sup> and requests the Secretary-General, in consultation with the Administrative Committee on Co-ordination, to prepare a comprehensive analysis of the situation on the basis of progress reports by Governments and by the international organizations concerned and to submit it to the General Assembly at that session through the Economic and Social Council.

55th plenary meeting  
10 November 1980

<sup>3</sup> *Report of the World Conference of the United Nations Decade for Women: Equality, Development and Peace, Copenhagen, 14–30 July 1980* (United Nations publication, Sales No. E.80.IV.3), chap. I, sect. B.

<sup>4</sup> United Nations document A/35/367 and Add.1.