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INTERNATIONAL DRINKING WATER SUPPLY AND SANITATION DECADE

Regional Workshop on Support Programmes and Projects

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CENTRE FOR COMMUNITY WATER SUPPLY
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P.O. Box 93190, 2309 AD The Hague

Tel. (070) 814911 ext. 141/142

RN: ish 1524

LO: 71 SEARO 81

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SUMMARY

The Workshop was organized as a follow-up of the "Regional Consultation" held in New Delhi, from 26 to 28 November 1981. Senior officials from Water/Sanitation and Primary Health Care programmes from nine countries of the South-East Asia Region participated in the Workshop, besides representatives of UN agencies involved in the Decade, WHO short-term consultants and WHO specialist staff. The Workshop was inaugurated by the Regional Director, WHO South-East Asia Region, and discussed the following "support" programme areas:

- (a) Human resources development
- (b) Community education and participation; and integration of the Decade with primary health care
- (c) Operation and maintenance of ~~communit~~ community water supplies, and water quality surveillance.

The following recommendations were made:

- (1) In each country, a national focal point responsible for planning, implementation, and evaluation of activities should draw up a phased programme of work and its budgetary needs in accordance with guidelines provided by the National Action Committee.
- (2) Self-reliance on the part of the community and sharing of responsibility by the government and the community should be promoted.
- (3) The National Health Council for PHC/HFA (primary health care and health for all) and the National Action Committee for the Decade should jointly review the Decade and PHC programmes and ensure coordination and integration.
- (4) The National Action Committee should review the existing programmes on community water supplies and water quality surveillance, develop clear policies and arrange for the mobilization of internal as well as external support. A task force be set up to assist with the execution and follow-up of the programmes.

1 INTRODUCTION

The Workshop was held in the WHO Regional Office for South-East Asia from 28 September to 1 October 1981. Twenty-two participants (including senior officials of national action committees, sector agencies, and focal points for primary health care) from nine member countries, six WHO country engineers, four consultants, a specialist from WHO Headquarters, and a six-member secretariat from the WHO Regional Office for South-East Asia attended the Workshop (Annex 1).

1.1 Objective

The objective of the Workshop was to define approaches and methodologies for preparing and implementing priority support programmes or projects for the International Drinking Water Supply and Sanitation Decade.

1.2 Inauguration

1.2.1 Address by the WHO Regional Director

Dr U Ko Ko, WHO Regional Director for South-East Asia, inaugurating the Workshop, stated that though countries of the world had designated the eighties as the International Drinking Water Supply and Sanitation Decade, in fact, there would be as many decades as there were countries because each country had to set its own goals, and plans for its activities in the light of its own needs and resources. With the global impetus for the Decade, there was justifiable eagerness on behalf of Governments to embark on "coverage" programmes immediately. However, it was necessary to strengthen the existing infrastructure and capability through "support" programmes to make the activities effective, and self-sustaining.

Stressing the need for giving priority attention to the development of human resources in various categories, Dr Ko Ko said: "Unless we seriously take up the question of manpower development as a priority project in itself, the Decade goals will remain mere pipe-dreams". He also emphasized the need for community participation and involvement in the Decade and warned that unless the programmes permitted a motivated community to be actively involved, the goals would remain unrealized.

Pointing out how the Decade and primary health care strategies were identical the Regional Director urged that conscious efforts be made to ensure that actions in these two programmes were integrated at each stage, i.e., planning, implementation operation and maintenance. Concrete strategies, procedures, and action plans had to be developed to implement and evaluate this integration.

The Regional Director observed that operation and maintenance of water supply and waste disposal facilities were often in a poor state and, as a result, many communities were receiving water of doubtful quality;

waste disposal was either non-existent or unhygienic. He said: "It should be a part of the Decade goals to upgrade the service so that the investments made yielded dividends in terms of utility and health benefits. At the same time, the service provided to new population groups must be so planned that efficient operation and maintenance is automatic with the full involvement of the communities concerned". The drinking water quality had to be improved gradually in keeping with technical and other resources.

1.2.2 Address by UNDP Resident Representative

Mr M. Priestley, Resident Representative, UNDP, reiterated the vital interest of his agency in the Decade and mentioned two UNDP support projects in India. He informed the meeting of UNDP/World Bank cooperation at the regional level to station a multi-disciplinary team in Colombo to assist governments in project preparation. At the global level, UNDP was engaged in a massive campaign to promote the Decade as well as in supporting projects on public information, solar-powered pumps, and selection of hand-pumps for rural water supplies.

1.2.3 Address by the UNICEF Regional Director

Mr D. Haxton, Regional Director, South Central Asia UNICEF, stated UNICEF's firm commitment to the goals of the Decade and added that more than a quarter of the global UNICEF assistance was being allocated to water supply and sanitation because UNICEF believed that safe water and clean environment could surely lead to less child morbidity and mortality. The approaches adopted were (1) promotion of simple and cost-effective technologies which could be made readily available and be managed by the community, and (2) training of technicians and skilled workers. He stressed that investments on water supplies should be matched by suitable outlays on health education and sanitation in order that full potential benefits from these investments might be derived. In the interest of the health of the majority, the present imbalance between rural and urban sub-sectors as well as that between water supply and sanitation should be corrected substantially during the Decade. He mentioned some of the factors that had been responsible for poor results in the past and cautioned that if costly systems were designed and implemented during the Decade the needs of the people would remain substantially unmet.

1.2.4 Address by World Bank Representative

Mr Buky, referred to the effort being made by his organization to support the work of inter-national agencies ranging from research and information dissemination to Decade planning and project development. He mentioned that a new effort was being made to bring private funding and enterprise into implementing the Decade targets. Development components specifically directed towards hygiene and health were being given increased funding and attention. Statistics showed that during the Decade, several million people would be deprived of safe water owing to poor operation and maintenance.

1.2.5 Address by ESCAP Representative

Dr (Mrs) M. Ramani, Representative of ESCAP, expressed her organization's commitment to support the Decade and wished the Workshop success.

2 WORKING METHOD

After the above inaugural addresses background papers and country reports (Annex 2) were presented and discussed in the plenary. The participants then divided themselves into three working groups and each group prepared responses to pre-drafted issues on one of the following subjects:

- (a) Human resource development;
- (b) Community education and participation, and integration of the Decade with primary health care, and
- (c) Operation and maintenance of community water supplies, and surveillance of drinking water quality.

These responses were presented and discussed in the plenary on the basis of which a draft consolidated report was prepared. This report was reviewed and adopted at a plenary session.

3 CONCLUSIONS AND RECOMMENDATIONS

The main observations, Conclusions and Recommendations are summarized below. An analysis of the components elaborating possible approaches and activities for each of the support programme discussed may be found in Annexes 3, 4 and 5.

3.1 Human Resources Development (HRD)

In terms of priority programme activities, manpower planning should precede manpower training and manpower management and the programme components, approaches and activities have been arranged bearing this in mind.

The range of tasks to be performed during the Decade is broad and includes various tasks involved in planning; programming and budgeting; design; construction; operation and maintenance of facilities. In most countries, the last set of tasks requires immediate attention which means that a greater emphasis will need to be placed on the training of large numbers of people for intermediate and lower level supervisory positions and for skilled labour, i.e., sanitarians, public health inspectors, sanitation aids, community development workers, water works technicians and operators and village water attendants.

Planning must take into account each country's capacity to provide jobs for individuals who receive training - jobs which are commensurate with their knowledge and skills. The content of training programmes must be directly correlated with the jobs to be filled.

Decade HRD must be tailored to high priority problems, be consistent with national policies and be feasible of implementation. Account should be taken of the fact that, although most of the resources for the implementation of the country's HRD plans will need to come from the country itself, there will be a requirement for international support geared to specific country needs.

Estimates of the quality and quantity of human resources required should be made for the entire Decade; these estimates should reflect the emphasis of the new policies for the Decade (e.g. large-scale use of community or village level workers) rather than merely being an extrapolation of past trends. A very careful assessment needs to be made of all training resources available in the country. It was felt that most countries have more resources than authorities are aware of. There is need for a national focal institution for HRD under the National Action Committee (NAC) or equivalent body, to provide expert HRD advice and coordinate the efforts of the various country agencies and thus helping to ensure that what needs to be done, is done. In this connexion there should be an inventory of all actual and potential resources for Decade HRD and these should then be linked into a network.

Reorientation of the programme for providing water supply and sanitation for the Decade requires radical changes in the attitudes and skills of the managers of human resources. Personnel policies need to be revised so as to provide material incentives, career development opportunities, evaluation of workers' performance, and logistic supports.

The following methodology for implementing the Decade HRD programme is suggested:

- (1) The NAC (or equivalent body) will provide guidelines for all aspects of the manpower development programme, and will set up a national focal point for HRD, which will be responsible for the planning, implementation and evaluation of the programme of activities and will draw up a phased programme of work and estimated budgetary needs (Project document).
- (2) The national focal point for HRD will mobilize, within the country, resources as far as possible for the planning, implementation and evaluation of this programme.
- (3) A national workshop will be held to review (i) the inventory of available manpower and training facilities, (ii) preliminary estimates of future HRD needs, and (iii) identified priorities and constraints in further work, and to define the proposed programme of HRD activities for the Decade.
- (4) The NAC will seek and coordinate external (bilateral/international) support where necessary, and in (i) drawing up a phased programme and (ii) scheduling and monitoring its implementation.

3.2 Community Education and Participation (CEP) and Integration of the Decade with Primary Health Care

For obvious reasons, water supply and environmental sanitation programmes need to be planned, installed and maintained with the full involvement and participation of the individual, family and the community. To influence community involvement and participation, education is one of the few means that water supply and environmental health personnel have at their disposal. This means that, of necessity, education must inform and motivate and enable the individual family and the community to perform the different roles expected of them in connexion with water supply and environmental sanitation programmes. For want of education and consequent community involvement and participation, water supply and environmental health programmes have often failed or achieved partial success. Needless to stress that community education and its corollary - participation - play a vital and critical role in Decade activities.

The lack of consensus on the meaning of participation has caused confusion. The term participation, which denotes an essential end product of education, is often used to designate a spectrum of activities, ranging from inactivity, compliance and utilization, to active decision making, planning, and ultimately community control of facilities. Similarly, the term education is used ambiguously. Often, it is viewed narrowly, and is operationally limited to the dissemination of information and the development and distribution of educational materials. Others see education as basic to community participation and as a process to help individuals to become competent in, and to carry on, those activities they must undertake for themselves, as individuals or in small groups, in order to realize fully a given state of health. This conceptual problem as well as the fact that education does not always lead to immediate results has impeded its recognition as an essential and vital part of water supply and environmental sanitation programmes. Besides lack of funds, inadequate organization for planning and coordinating CEP activities, shortage of adequately trained and experienced staff have all prevented educational programmes being developed.

3.2.1 CEP Programme Components

The following recommendations for the development of CEP activities, especially in water supply and environmental sanitation programmes, can serve as broad guidelines; country-specific approaches and detailed activities need to be planned and implemented taking into account the above and other relevant considerations.

3.2.1.1 Policy and strategies

Possible approaches

- (1) Promotion of self-reliance on the part of the community and shared responsibilities between the government and community in overall development; provision of adequate support to bring about these.

(2) Promotion of the planning and implementation of the Decade programme with CEP as an integral part of it.

(3) Promotion of the recognition of the CEP contribution to total development.

Possible priority activities

(1) Provide for CEP in all Decade-related projects, allocating financial and other resources for operation and maintenance of CEP activities.

(2) Set targets for CEP activities within the country Decade programme.

(3) Establish a mechanism for coordination of CEP efforts within the concerned sectors and other related governmental and non-governmental agencies.

Other possible activities

(1) Promote and ensure that top decision makers give high priority to CEP.

(2) Plan feasible and flexible CEP programmes in keeping with the aspirations and needs of the people, involving them at all stages, wherever possible.

3.2.1.2 Methodology for Planning for CEP (including implementation monitoring and evaluation)

Possible approaches

(1) Identify country specific problems in Decade activities which call for CEP.

(2) Identify community resources and factors which support Decade programmes.

(3) Identify barriers which hamper the programmes including organizational constraints.

(4) Formulate guidelines for CEP project planning and implementation.

(5) Plan suitable community involvement and educational activities to be carried out by the programme personnel in the field.

(6) Identify functions and assign responsibilities among the different agencies.

(7) Plan and implement appropriate pre-service and in-service training for personnel at all levels for CEP.

(8) Identify community volunteers and leaders required for the decade programme and adequately train them for CEP.

- (9) Utilize appropriate methods and resources in keeping with need of CEP for different Decade activities.
- (10) Provide for monitoring and evaluation the CEP as an integral part of all Decade project plans.
- (11) Prepare community to take decisions, organize resources, take responsibilities, share work, and supervise activities.

Possible priority activities

- (1) Collect, process and analyse ~~minimum~~ required baseline data in the shortest possible time, i.e.,
 - (a) existing water and sanitation resources and utilization of these;
 - (b) perception of agency by the people of the communities;
 - (c) social, psychological, cultural, and economic characteristics of the people;
 - (d) epidemiological information with special reference to diarrhoeal diseases;
 - (e) topographical and physical characteristics.
- (2) Redefine appropriately roles of health personnel and establish working patterns to meet the needs of CEP activities.
- (3) Establish a functional monitoring and evaluation mechanism, and utilize data for programme improvement.

Other possible activities

- (1) Determine appropriate institutions, organizations at the village level and intermediate level and delegate authority for organizing and supervising CEP.
- (2) Develop rapport between workers and communities. Establish credibility of programme and generate a sense of partnership and community pride.
- (3) Deliver supplies, materials and technical assistance to the communities on condition that community is involved and is also providing resource inputs.

3.2.1.3 Resources for CEP

Possible Approaches

- (1) The country planning exercises for organization and management of resources, manpower, etc. should take into account needs for CEP activities.

(2) CEP programme needs should be specifically taken into account in the country Decade programme.

(3) CEP should be an integral part of the work of all personnel involved directly or indirectly in the Decade programme. Services of specialists for specific tasks should be obtained wherever necessary.

Some possible priorities

(1) Identify community/inter-agency/voluntary organization resources for implementation of CEP.

(2) Develop viable proposals for external assistance to strengthen country support programmes for CEP.

Other possible activities

Allocate resources for training of personnel for implementing CEP programme activities.

3.2.1.4 Research needs

Possible approaches

Utilization of existing CEP-related information and research data in programme planning, operation and evaluation.

Other possible activities

(1) Identify priorities of research for the following:

(a) Programme operation and management

(b) Social and behavioural aspects of water and sanitation

(c) Appropriate methodology for CEP

(d) Methods of programme management

(2) Initiate research where needed in collaboration with competent agencies.

3.2.2 Methodology for Implementation

For the development and implementation of community education and participation activities in Decade programme.

(1) Have the Action Committee or equivalent body to review CEP support component of the country Decade programme, and to reformulate guidelines (in line with the PHC objectives) for incorporation of CEP activities as an integral part of the Decade programme.

- (2) Establish an intersectoral CEP support programme and prepare guidelines for CEP, manpower development and training, resource development and allocation, and detailed procedures for implementation.
- (3) Identify and strengthen appropriate agency/agencies for providing expert technical assistance in the development of CEP and establish an information network for the collection of relevant data for CEP including experiences in CEP activities in other sectors.
- (4) Identify and strengthen appropriate agencies, with international assistance if necessary, to design methods and materials for CEP and formulate guidelines for the purpose.
- (5) With the support of the National Health Council and the National Action Committee for IDWSSD, sanction and direct relevant Decade sector agencies to provide training, and initiate community involvement and education programmes along the line of primary health care objectives.
- (6) Establish appropriate monitoring and evaluation systems for CEP at different administrative levels in each country.

The Decade and PHC have become two distinct programmes undertaken by governments, WHO, UNICEF and other relevant UN agencies. These two programmes are similar in several respects and the former is an integral part of the latter. Therefore, there is an urgent need to integrate Decade and PHC activities at the country level as quickly as feasible. Towards this end, the following recommendations are made.

Recommendations for integration with primary health care

- (1) The National Health Council for PHC/HFA and the mechanisms set up in the country for coordination of the water and sanitation Decade, such as the National Action Committee, should jointly review the Decade and PHC programmes to ensure coordination and integration without retarding or impeding the progress of either PHC or the Decade activities.
- (2) The National Decade Plan should provide for the collection of baseline data and development of strategies and guidelines for incorporation of PHC objectives and methodology in planning, operation and utilization of water and sanitation facilities.
- (3) Allocate resources, i.e., information, technical, financial, selectively to the community in accordance with the principle of self-reliance and self-help.
- (4) Provide for adequate health care support in keeping with the Decade programme; similar provisions should be made for water and sanitation activities in the PHC. For better coordination and integration of PHC and the Decade activities, critically review the organization of concerned agencies and, where necessary, reorganize them. National, regional and community level coordination functions should be established through agreement, government directions and legislation.

(5) Coordination between ministries should begin at the very top and follow through at the intermediate administrative levels.

(6) In the National Decade programme provision should be made for the planning and implementation of the educational aspects of primary health care. Similar provisions should be made to meet the educational needs of IDWSS.

3.3 Operation and Maintenance of Community Water Supplies and Water Quality Surveillance

3.3.1 Background to problems and constraints

The full benefits of new coverage schemes are not realized in the absence of proper operation and maintenance and in several instances existing schemes are no longer operative for this reason. Adequate budgetary requirements for operation and maintenance of new schemes are not given due consideration at the planning stage. At the same time, manpower availability for operating and maintaining small schemes was also a serious problem.

In view of the large Decade programme ahead of the countries, it is essential that the primary objective should be to ensure adequate operation and maintenance of all existing and new drinking water supply and sanitation schemes, and to make every effort to find the financial and manpower resources and undertake the necessary institutional, managerial and technological actions to bring operation and maintenance to an adequate level. It is necessary to establish at the highest national level, the required priority for O & M to ensure that this is done.

Drinking water quality monitoring and protection of sources by the water producing agencies were considered an essential part of their operation and maintenance practice. Drinking water surveillance, however, also had another dimension: it needed to be strengthened at the control agency level to ensure that the water supplying agencies carried out their functions both at the treatment plant and in the distribution system, properly.

For developing a comprehensive support programme in operation and maintenance and water quality surveillance, at least, the following components should be considered.

For operation and maintenance:

- Manpower development
- Employment practices, service conditions and incentives for efficiency
- Use of appropriate technology
- Development of maintenance programmes
- Funding, institutional aspects and programme evaluation
- Community involvement

Additional items for water quality surveillance:

- **Legislation and policies**
- **Technological aspects in implementation**

3.3.2 Priorities

A set of priority activities that may be generally applicable to most countries of the Region, is as follows:

- (1) Prepare inventories of existing drinking water supply and sanitation schemes.
- (2) Assess current programmes and analyse performance problems.
- (3) Develop criteria for operation and maintenance and drinking water quality surveillance programmes.
- (4) Assess operation and maintenance requirements for new schemes, adopting appropriate technology as far as possible.
- (5) Estimate requirements for implementing the programme for existing and new schemes:
 - **Manpower**
 - **Materials (including standardization and local manufacture)**
 - **Support activities**
- (6) Estimate available resources, and additional requirements, if any.
- (7) Strengthen the operation, maintenance and surveillance work of national organizations through the following:
 - **Training programmes**
 - **Improved service conditions**
 - **Legislation and institutional review**
 - **Adequate communications**
 - **Research and development**
 - **Guidelines and codes of practice**
 - **Programme monitoring and evaluation**

Several local circumstances should be kept in mind as each of these items is considered. All levels of personnel must be taken into account, that is, the caretaker of a facility in a village, up through district.

province, and region to the central authorities in the capital city. Consideration must be given to community participation, public relations, and health education so that there is coordination of all activities and at all levels that have input to planning and implementation. Community involvement must be the common thread holding all activities together. Thus the national guidelines established as a result of implementation of these priorities will include each level or group so that their input is considered and their responsibilities clearly defined.

Items 1 through 6 in the priority listing could be carried out with existing resources within the country. However, item 7 would probably require additional resources from international or bilateral agencies.

8.2.3 Methodologies of implementation

In order to give further definition to each of the seven priority activities, the implementation methodology listed below suggests ways for an organization to go about implementing their plan:

At the national level

- Activate the NAC (or equivalent body) to review existing programmes and recommend clear policies for adoption at the highest governmental levels; for this purpose the NAC may designate a working group comprised of representatives of all sector agencies involved in operation, maintenance and surveillance work.
- Ensure continued co-ordination by NAC (or equivalent body) in mobilizing internal resources and external support, where necessary, and in undertaking inter-sectoral programmes.

At the agency level

- Set up a group of selected personnel (a task force) within the agency concerned with water and sanitation to undertake tasks listed at items 1 to 6 in the above list of priority activities, and to follow up with the NAC on questions of policy, resources, etc.
- Strengthen the operation, maintenance and surveillance capabilities of the organization with regard to various activities listed at item 7 in the above list of priority activities, initially through the following:
 - (i) development of in-service staff training facilities, in collaboration with a national training institute;
 - (ii) establishment of mechanisms for recognizing and suitably rewarding high level of operation of water supply and sanitation systems, including R and D for appropriate technology, and
 - (iii) assessment of the nature and extent of community participation likely to be obtained in planning, construction and operation of systems and adoption of programmes for promoting community involvement.

List of ParticipantsBANGLADESH

1. Mr K.A.W. ASGHAR
Superintending Engineer
Public Health Engineering
Department
Planning Circle
Dacca, Bangladesh
2. Dr K. BASHER
Civil Surgeon
Dacca, Bangladesh

BHUTAN

3. Mr S. TAMANG
Superintending Engineer
Public Works Department
Bhutan
4. Dr S.Y. ANAYAT
Coordinating Officer of
Leprosy and TB
Department of Health
Bhutan

BURMA

5. Mr NGWE SAN
Director
Rural Water Supply Division
Agricultural Mechanization
Department
Ministry of Agriculture and
Forests
Rangoon, Burma
6. Professor MIN WUN
Professor of Civil Engineering
Rangoon Institute of
Technology
Ministry of Education
Rangoon, Burma
7. Mr MIN SWE
Assistant Director, Health
Education
Department of Health
Rangoon, Burma

INDIA

8. Mr M.K. MUKHERJI
Secretary
Ministry of Works and Housing
New Delhi, India
9. Mr L.M. MENEZES
Joint Secretary
Ministry of Works and Housing
New Delhi, India
10. Mr N.N. VOHRA
Joint Secretary
Ministry of Health and Family
Welfare
New Delhi, India
11. Dr M.D. SAIGAL
Deputy Director-General
Health Services
New Delhi, India
12. Mr V.R. IYER
Deputy Secretary
Ministry of Works and Housing
New Delhi, India
13. Mr V. VENUGOPALAN
Acting Adviser
Central Public Health and
Environmental Engineering
Organization
New Delhi, India

INDONESIA

14. Mr W. WIDODO
Director
Directorate of Hygiene and
Sanitation
Jakarta, Indonesia
15. Mr O. SIDIK
Director
Directorate of Sanitary
Engineering
Jakarta, Indonesia

16. Dr P. PUDJIASTUTI
Director
Directorate of Health
Education
Jakarta, Indonesia

MALDIVES

17. Mr M. IBRAHIM
Assistant Manager
Maldives Water and
Sanitation Authority
Maldives

NEPAL

18. Mr S.B. RAI
Additional Secretary
Ministry of Panchayat and
Local Development
Kathmandu, Nepal

19. Mr D.B. RAYAMAJHI
Chief Engineer
Department of Water Supply
and Sewerage
Kathmandu, Nepal

SRI LANKA

20. Mr R.H.P. FERNANDO
Senior Assistant Secretary
Ministry of Local Government,
Housing and Construction
Colombo, Sri Lanka

21. Mr T.B. MADUGALLE
General Manager
National Water Supply and
Drainage Board
Colombo, Sri Lanka

22. Dr K.T.K. DE SILVA
Assistant Director (Hospitals)
Ministry of Health
Colombo, Sri Lanka

THAILAND

23. Dr ULTI LEEYAVANIJA
Principal Medical Officer
Department of Health
Bangkok, Thailand

24. Mr SUANG LIAMRANGSI
Acting Director, Sanitation
Division
Department of Health
Ministry of Public Health
Bangkok, Thailand

25. Dr PRICHA DESAWADI
Director, Primary Health Care
Office of Under-Secretary of
State for Public Health
Bangkok, Thailand

UNDP

26. Mr M. PRIESTLEY
Resident Representative
United Nations Development
Programme
New Delhi, India

UNICEF

27. Mr D. HAXTON
Regional Director
United Nations Children's Fund
UNICEF House
New Delhi, India

28. Mr M. BEVACQUA
Senior Programme Officer
United Nations Children's Fund
New Delhi, India

29. Miss A. VISHALAKSHI
Programme Officer
United Nations Children's Fund
New Delhi, India

30. Mr K.D. GREY
Project Officer
United Nations Children's Fund
New Delhi, India

WORLD BANK

31. Mr J.B. BUKY
Water and Wastes Project
Adviser
Transportation, Water and
Telecommunications
Department
The World Bank
1818 H Street
N.W., Washington, D.C. 20433
U.S.A.

ESCAP

32. Dr M. RAMANI
Consultant
Economic & Social Commission
for Asia and the Pacific
Rajdamnern Avenue
Bangkok, Thailand

WHO HEADQUARTERS

33. Mr A. REDEKOPP
WHO/HQ
Geneva

WHO/SEA REGIONAL STAFF

34. Dr D.A.W. NUGENT
WHO Programme Coordinator
New Delhi, India

35. Mr D.N. WIJEYARATNE
WHO Sanitary Engineer
Rangoon, Burma

36. Mr E. PANCAROGLU
WHO Sanitary Engineer
Jakarta, Indonesia

37. Mr K. KHOSHCHASHM
WHO Sanitary Engineer
Kathmandu, Nepal

38. Mr P. LAO
WHO Sanitary Engineer
Colombo, Sri Lanka

39. Mr N. SARAVANAPAVANANTHAN
WHO Sanitary Engineer
Bangkok, Thailand

WORKSHOP SECRETARIAT

40. Mr D.V. SUBRAHMANYAM
Chief, Environmental Health
WHO/SEARO

41. Mr S.J. ARCEIVALA
Regional Adviser on
Environmental Health
WHO/SEARO

42. Mr H.S. SUPHI
Regional Adviser,
Environmental Health
WHO/SEARO

- Organizing Secretary

43. Dr C.H. PIYARATNA
Regional Adviser,
Health Education
WHO/SEARO

44. Dr V.K. SHARMA
Medical Officer, Primary
Health Care
WHO/SEARO

45. Mrs N. SAIYUD
Acting Regional Adviser,
Health Manpower Development
WHO/SEARO

46. Mr P. BLIZARD
Technical Officer, Health
Manpower Development
WHO/SEARO

47. Mr A. BESA
WHO Sanitary Engineer
WHO/SEARO
48. Dr J.H. AUSTIN
(WHO Temporary Adviser)
United States Agency for International
Development (USAID)
c/o the Department of State
Washington, D.C.
(USA)
49. Dr V. KOCHAR
(WHO Consultant)
Department of Sociology & Anthropology
University of Hyderabad
Nampally Station Road
Hyderabad 500 001
50. Miss J. RAMAKRISHNA
WHO Temporary Adviser
(Behavioural Science)
WHO/SEARO
51. Mr C.R. NAGABHUSHANA RAO
WHO Consultant
WHO/SEARO

COUNTRY STATEMENT1 BANGLADESH

The Government of Bangladesh recognizes the importance of the provision of safe drinking water and sanitation for the protection and promotion of health. Projects are being initiated during the course of the Second Five-Year Plan (1980-85) taking into consideration the objectives of the Decade.

Two major constraints in urban water supply are: (a) inadequacy of financial resources to implement new projects and (b) poor operation, maintenance and management of completed projects. Collection of water revenue has not been efficiently done. In rural areas, the government attached great importance to installation and operation of hand-pumped tube-wells. At the end of the Five-Year Plan period (1985), the country aims at having 750 000 tube-wells. To improve operation and maintenance, 200 000 caretakers are being trained. Emphasis is being placed on development of low-cost sanitation.

Priority is also being given to the establishment of a training and research centre in meeting the manpower development requirements.

Preparation of a complete and detailed master plan for the Decade is considered to be a prime requirement, and the initial phase of this plan is being undertaken by the Government.

2 BHUTAN

The Government of Bhutan has constituted a national commission and a working committee for the Decade. A technical support cell assists UNDP. During 1982-1987, it is proposed to complete 1500 schemes and another 1500 schemes are proposed to be executed during 1987 - 1990, thereby covering approximately two thirds of the villages. During the Decade 70 000 rural household latrines will be promoted and cycling of household wastes by composting is planned. In urban centres, regulations will be formulated for houses to be provided with septic tanks. Personal hygiene and sanitation will be introduced in regular school curricula. Community participation will be promoted in Decade programmes. Human resources development will be undertaken through in-service training or otherwise. Communities will be made responsible for the maintenance of water supply and sanitation facilities.

3 BURMA

The Decade target set by the Government is to provide 50% of the country's population with access to safe drinking water and sanitary waste disposal facilities. Guidelines and policies for the Decade

programme will be laid down by the Water Resources Utilization Committee. A National Action Committee will be formed to co-ordinate activities for the Decade, and will be assisted by a technical committee. The programme will be monitored by the Project Appraisal and Progress Reporting Department, of the Ministry of Planning and Finance, the Institute of Economics and the Department of Medical Research.

A basic strategy for the Decade programme is the development of national industries for the production of materials required for the construction as well as for the operation and maintenance of water supply and sanitation systems. Based on the national strategy, priority will be given to the development of the following production units: (1) a small batch-type petro-chemical plant to produce plastic pellets from locally available raw material; (2) plastic pipe extrusion units to produce plastic pipes; (3) steel pipe making unit; (4) a production unit for assembling water pumps, air compressors, electric motors, petrol engines; (5) mini-sized units for cement production, using appropriate technologies, and (6) a small production unit for water meters.

The Rangoon Institute of Technology provides Sanitary Engineering training to senior undergraduate civil engineering students. Government Technical Institute and Technical High Schools provide technician training. Health education will be expanded and for promoting community participation, the services of Lanzin Youth Red Cross Societies, water supply committees, community health workers will be mobilized.

Minor repairs and routine maintenance of rural water supplies will be the responsibility of village water supply committees, while major repairs will be undertaken by the Rural Water Supply Division. The Environmental Sanitation Division has prepared plans for the surveillance of water quality, in collaboration with the National Health Laboratory, Department of Health and the Laboratories of the Rangoon Institute of Technology.

4 MALDIVES

Many islands have no piped water supply or sewerage schemes. The main source of drinking water in each island is a fresh water lens floating on the sea water within the confines of coral strata. The ground water is invariably polluted with faecal matter.

The National Health Plan has become an official document and high priority has been given for its implementation. The plan recommends primary health care approach in which, water supply and sanitation plays a significant role in the development of community health. At present, two water supply projects are being implemented with UNICEF and UNCDF assistance.

A comprehensive water supply and sanitation project for Male has been prepared. The first phase of the project is estimated at US \$13 million. Part of it will be financed by West Germany and the European community is being approached by the Government for funding the balance.

A national programme has been prepared for providing water supply and sanitation to all 201 inhabited islands. It provides for construction of rain-water tanks and community latrines, and is estimated to cost US \$17.5 million.

Maldives Water and Sanitation Authority is the only organization in the country responsible for planning, implementation, operation and maintenance of water supply and sanitation schemes in the country. Restructuring of the Authority has been planned. Training of personnel is a pre-requisite for future project implementation for which provision has been made in the national programme.

5. NEPAL

Service coverage targets for the Decade are as follows:

	<u>Urban</u>	<u>Rural</u>
Water Supply	94%	67%
Sanitation	18%	13.4 million

The total capital outlay required to achieve these targets is estimated at US \$238 million.

A "National Group" is coordinating the Decade activities.

The major constraints are: (i) lack of funds and trained personnel, and (ii) inaccessibility of rural areas. A sizeable project for training engineers in the region is under implementation. In the implementation of rural water supply schemes, communities are involved. It is necessary to make communities more aware of their responsibilities for the upkeep and maintenance of the water supply facilities; health education is being integrated in the school curricula. Special care is being taken in the selection of water sources to see that supplies are safe and maintain a reasonable water quality. Due to lack of communication and transportation facilities, delivery of supplies and management of project present difficult problems.

6. INDIA

The service coverage targets for the Decade are as follows:

	<u>Urban</u>	<u>Rural</u>
Water Supply	100%	100%
Sanitation	100% (for class I cities)	25%
	80% (for all cities)	

Decade Master Plans for all States are now being produced. This will be followed by a composite National Master Decade Plan for Water Supply and Sanitation, indicating firm commitments up to 1985 and perspective forecasts for the latter half of the Decade. The allocation for the Sixth Five-Year Plan amounting to nearly Rs.39 100 million constitutes over 4% of the total Five-Year Plan budget and is more than the provision in all previous plans put together. However, it is estimated that as much as Rs.150 000 million may be required to attain the Decade targets. The Government has formed an Apex Committee, under the chairmanship of the Secretary, Ministry of Works and Housing, in order to formulate policies and guide the Decade programme. Although there are no serious manpower constraints, there are specific categories of manpower that have to be developed in sufficient numbers. It is also necessary to re-orient the professional staff to Decade approaches. Organizational problems of maintenance of rural water supply scheme are a cause of anxiety, and is now being closely studied. Much remains to be done in improving the operation and maintenance of water and waste-water utilities in all (urban and rural) areas.

7. INDONESIA

The Government of Indonesia has taken decisions and major steps during the Third Five-Year Plan (1979-1984) in the provision of safe water supply and sanitation to rural and urban populations. The service levels for the Decade have been planned to be:

- 60% of rural population and 75% of urban population having access to safe and adequate water supply,
- 40% of rural population and 60% of urban population having access to sanitary facilities.

Policies of meeting Decade targets have been set identifying at the same time clearly the responsibilities to be shared by the Government agencies. Strategies to be followed are identified and general plans of action recommended. The Government recognizes the importance of support programmes in achieving the Decade targets among the support

programmes Human Resources Development is realized as the foremost. Other support programmes such as health education, community participation and operation and maintenance are considered essential.

8 SRI LANKA

The Decade Plan has been prepared with the goal of providing 100% coverage to the urban population in drinking water supply and sanitation and excreta disposal facilities; in the rural sector the coverage will be 50% in both water supply and sanitation. The Plan makes an assessment of sector needs, examines policies and strategies to be followed and recommends a ten-year investment plan and a two-year rolling plan. The emphasis during the first few years, however, has been on the support programmes for operation and maintenance, human resources development, community participation, water-quality surveillance etc., required for effective implementation of on-going schemes and for the expanding coverage programmes later in the Decade. In addition to these, investments will be made on rehabilitation of existing schemes. Apart from these there will be no major investments on coverage projects during the first few years except to continue schemes under construction and to undertake new projects like community wells where the per capita cost is low. Feasibility studies on such coverage projects will be undertaken during the early years of the Decade.

9 THAILAND

The National Economic and Social Development Board will direct and monitor the implementation of the Decade plan which gives priority to the rural sector. The Decade service targets are 95% coverage for rural water supply and 70% for rural sanitation. The Government policy is to provide water for both drinking and other domestic purposes by 1985 and thereafter emphasize safe drinking water by 1990. Drinking water supplies will be provided mainly through rain-water tanks, household water filters dug-wells, tube-wells, and water treatment plants. In sanitation, first priority is given to provision of water-seal privy for households, followed by promotion of the use of refuse containers, disposal of solid wastes, food sanitation, and insect and rodent control.

Government internal budgetary resources are limited and will not be sufficient for achieving the Decade targets. Private sector contributions are being considered but external aid is also expected. Community education participation is the key to the success of the Decade programmes. Human resources development, appropriate technology, improvement of administration and coordination, research, and follow-up and evaluation are also considered important.

ANALYSIS OF PROGRAMME COMPONENTS FOR IDWSS DECADE

Support Programme for Human Resources Development

<u>Programme Component</u>	<u>Possible Approach</u>	<u>Possible Activities</u>
Inventory of existing manpower in the sector at the start of the Decade.	The preparation of guidelines by the national focal point agency for Decade HRD and collection of Data from appropriate sector agencies. (The focal point should have expertise in Human Resources Development).	Prepare suitable proforma and collect manpower data sector agencies to be analysed and compiled at national level.
Inventory of existing training facilities related to the sector in the country.	The preparation of guidelines by the national focal point agency for Decade HRD and collection of data from appropriate educational/training centres and institutions.	Collect and compile data on the existing sector-related training institutions on number of persons being trained at different levels (managerial, middle-level and technician level), and content of the training programme for each of the categories being trained.
Projection of manpower required during the Decade on an annual basis (keeping in view the manpower needs of the public and private sector).	Projection of future needs to take account of the optimum level of efficiency of staff, keeping in view job descriptions and possible increases in efficiency of manpower with proper in-service training.	Prepare future manpower requirements based on proposed institutional arrangements and established staffing patterns and norms for each of the manpower categories.

Support Programme for Human Resources Development (Contd.)

<u>Programme Component</u>	<u>Possible Approach</u>	<u>Possible Activities</u>
Action for increasing and improving the quality of facilities to meet the needs of the sector during Decade.	Utilization of existing educational/ training institutions to optimum level and their up-grading where necessary.	Utilize existing institutions and/or strengthen existing institutions to meet the additional manpower needs as projected for the Decade.
	Development of programme for trainers to train multipurpose workers for the sector.	Coordinate sector agencies concerned for the optimum utilization of training facilities operated by sector agencies, particularly for the purpose of training of trainers of multi-purpose workers.
	Decentralized training activities at the provincial/district levels to meet the needs of the Decade.	Examine relevance of existing training programmes in the context of the Decade and include in the planning for HRD, mounting training programmes on-site whenever possible.
	Establishment of new or adapting existing institutions for training manpower as required for the Decade.	Examine all available and potentially useful training resources available within the country before establishing new institutions for manpower training for the Decade.

Support Programme for Human Resources Development (Continued)

<u>Programme Component</u>	<u>Possible Approach</u>	<u>Possible Activities</u>
Development of relevant and appropriate training programmes for the Decade.	Strategy for manpower production and the utilization of the multi-disciplinary approach.	Prepare job descriptions for different categories of personnel (both for implementation and maintenance) which should include levels of responsibility.
	Inter-sectoral coordination in developing training programme.	Develop competency based curricula for new and existing training programmes.
	Communication and collaboration between producers and users of trained manpower.	Prepare guidelines, job-aids and practical manuals for technicians, operators and artisans.
	Training programmes for technicians to be related to the range of technology employed locally.	Prepare teaching/learning aids and training materials.
Implementation of training programmes for the Decade.	Utilization to the extent possible the experienced workers as trainers.	Develop a mechanism for transfer of information on training.
	Adoption of a suitable selection mechanism for trainees based on national policies.	Provide for incentives to attract experienced workers with right attitude and aptitude as trainers.
	Utilization of existing pool of experience and information from allied fields available with WHO, SEARO and other specialized agencies.	Define selection criteria prescribing minimum and not maximum prerequisites for trainees.

Support Programme for Human Resources Development (Contd.)

Programme Component

Possible Approach

Possible Activities

Resources' mobilization

Full mobilization of existing resources for education and training with emphasis on training of trainers and on-the-site training for relevant skills.

Mobilization of internal and external financial resources to support the country's training programme with flexibility to use donor funds to meet local costs including costs of local resource personnel.

Plan crash programmes for training of trainers, of operation and maintenance staff as well as training of O & M staff.

Organize management training courses for managerial staff to orient them to new Decade approaches.

Mobilize external sources of support.

Establish mechanisms for exchange of experiences for technical cooperation (TCDC)

The RR/UNDP supported by the Technical Support Team and the NAC in each country will maintain a continued dialogue on resource mobilization.

Support Programme for Human Resources Development (Contd.)

<u>Programme Component</u>	<u>Possible Approach</u>	<u>Possible Activities</u>
Programme evaluation	Continuous monitoring and evaluation of the training programmes against predetermined criteria, by the national focal HRD agency in collaboration with sector agencies and institutions involved with training programmes during Decade.	Review manpower development practices and the efficiency of manpower utilization. Establish mechanism for evaluation of HRD programmes. Utilize evaluated evidence for programme change and improvement.
The development of efficient and effective policies of personnel management and training.	Development of effective system for career development and job satisfaction.	Develop in-service training programme for upgrading and subsequent promotion. Develop policies of incentives for personnel to work in remote areas. Retain trained manpower in the sector on a permanent and continuous basis, (effective policies should be evolved providing for a mechanism of obligation between employer and employees).

ANALYSIS OF PROGRAMME COMPONENTS FOR IDWSS DECADE

Support Programme for Community Education Participation

<u>Programme Component</u>	<u>Possible Approach</u>	<u>Possible Activities</u>
Goals and Policy	Promotion of self-reliance and equal partnership in overall development, through planned support.	Plan feasible and flexible programmes in keeping with the operations and needs of the people, involving them at all stages, wherever possible.
	Provision of minimum water and sanitation facilities as a basic need of the community.	Mandatory inclusion of CEP components in all the Decade-related projects before, during and after the projects, including financial and other resources at the outset.
	Promotion of CEP based programme planning and implementation for better health.	Plan and provide for CEP activities as an integral part of the plan for the Decade activities.
	Promotion of CEP contribution to total development.	Establish a mechanism for coordination for coordinating CEP efforts within the sector and other related agencies, government and non-government.
Methodology of Planning for CEP - Planning, Implementation, Evaluation and Monitoring.	Country specific problem identification in Decade activities which call for CEP.	Set specific targets for CEP to be identified within country Decade programme.
	Formulation of guidelines for CEP project planning and implementation.	Taking decision, organizing learning tasks, taking responsibilities, sharing work, and combining resources (self-reliance and self-help).
	Employment of appropriate methods and resources in keeping with the problems of CEP with respect to different Decade activities.	Determine appropriate institutions, organizations at the village and intermediate level, and delegating authority for organizing and supervising CEP. Redefine appropriate roles, resources, working patterns to cope with CEP activities.

Support Programme for Community Education Participation (Contd.)

Programme Component

Possible Approach

Possible Activities

Employment of appropriate methods and resources in keeping with the problems of CEP with respect to different Decade activities.

Redefine appropriate roles, resources, working patterns to cope with CEP activities.

Provision of appropriate pre-and in-service training to personnel at all levels.

Demarcation of functions and assignment of responsibilities among the different agencies involved in CEP.

Participation by involvement of the community in planning, construction, management, monitoring of the programme activities.

Identify factors in the community which support water and sanitation programmes

Collect, process and analyze minimum required base-line data in the shortest possible time.

Identify factors acting as barriers which hamper the programme including organizational barriers.

- existing water and sanitation resources and utilization;
- perception of the agency by the community;
- socio-cultural, economic characteristics;
- epidemiological studies, and
- topographical and physical characteristics.

Establish immediate, intermedidate, and ultimate Decade goals and unaccepted CEP activities in the light of the above two.

Condition delivery of supplies and material and technical assistance to physical involvement and inputs by the community.

Support Programme for Community Education Participation (Contd.)

Programme Component

Possible Approach

Possible Activities

Establish credibility (and rapport) of workers and the programme to generate sense of belonging and community pride.

Identify suitable community volunteers and leaders required for the Decade programme and adequately trained.

Plan suitable community involvement and educational activities to be carried out by programme personnel in the field.

Insure regular supervision procedures and delegate supervisory responsibility at all levels of the programme.

Establish a functional monitoring and evaluation mechanism or system and utilize data for programme improvement.

CEP programme activity needs.

Training for personnel in CEP activities.

Identification of community and inter-agency resources for implementation.

Identify voluntary agencies and voluntary organizations that can participate in CEP.

Develop viable proposals for external assistance to strengthen country support programmes for CEP.

Monitoring and evaluation should be included as an integral part of all project plans for the Decade.

The country planning exercises for O & M resources, manpower, etc. should include the organizational needs for CEP support programmes components as well as the manpower and resources.

CEP programme activity needs will be specifically taken into account for the Decade programme.

CEP should be an integral part of work of all personnel involved directly or indirectly in the Decade programme. Services of specialists for specific tasks should be obtained wherever necessary.

Resources - Finance, physical, social welfare,

Support Programme for Community Education Participation (Contd.)

<u>Programme Component</u>	<u>Possible Approach</u>	<u>Possible Activities</u>
Research Needs.	<p>Utilization of existing CEP related research in programme planning, operation and evaluation.</p> <p>Where there is need for further research initiate new research activities in collaboration with competent agencies.</p>	<p>Indicate the area set priorities of research:</p> <ul style="list-style-type: none"> - operation research; - social and behavioural aspects of water and sanitation use; - CEP technology; - technology for community participation; - methods of programme management, and - cost benefit and cost effectiveness.

ANALYSIS OF PROGRAMME COMPONENTS FOR IDWSS DECADE

Possible Programme Components, Approaches and Activities for Operation,
Maintenance and Water Quality Surveillance Support Programmes

Programme Component

Possible Approach

Possible Activities

Manpower Development

Introduction of staff training programmes and development of technical and managerial skills for O & M and training of persons involved in O & M at the community level.

Assessment of current programmes and problems faced.

Establish procedures to analyze performance problems in the system and to isolate problems related to skill/knowledge deficiencies, management deficiencies, and motivational, incentive and attitudinal deficiencies.

Prepare listing of job titles, job descriptions and staffing patterns.

Estimate manpower required for:

- ad hoc programme of urgent repairs of schemes in disuse;
- routine programme of repairs and maintenance, and
- routine operation of schemes.

Prepare listing of institutions and organizations who can provide training.

Establish training facilities for:

- caretakers, operators, repairmen, supervisors, etc., and
- training of trainers.

Possible Programme Components, Approaches and Activities for Operation, Maintenance and Water Quality Surveillance Support Programmes (Contd.)

Programme Component

Possible Approach

Possible Activities

Identify master or exemplary performers to serve as models in developing training.

Establish procedures to provide for new entries into system.

Undertake attitudes survey.

Determine turnover rates and reasons.

Review and recommend employment policies and service conditions.

Establish clear lines of communication and lines of authority for all decision-making steps.

Promote motivation through better communication and other means and provision of career ladders and incentive systems.

Promote research and development of appropriate technology.

Establish cross links between design and operation teams to ensure use of appropriate technology.

Control application of technology so that community can operate and maintain their systems.

Establish standardization so as to minimize the diversity of hardware to be operated and maintained in systems constructed.

Employment Practices/
Service Conditions/
Incentives for Efficiency.

Survey of technical and managerial staff attitudes to O & M of completed schemes.

Review of employment policies and institutional service conditions in water utilities and other public utilities.

Promotion of motivation.

Use of Appropriate
Technology

Use of appropriate technology to facilitate O & M.

Possible Programme Components, Approaches and Activities for Operation,
Maintenance and Water Quality Surveillance Support Programmes (Contd.)

Programme Component

Possible Approach

Possible Activities

Establish importation policies that will not interfere with the utilization of a new appropriate technology.

Establish in public and/or private sector an ability to manufacture and supply spare parts, supplies and service to systems.

Inventory of existing water and sanitation schemes and required maintenance activities.

Establish procedures to analyze performance problems in the systems and to isolate problems related to skill/knowledge deficiencies, management deficiencies and motivational, incentive and attitudinal deficiencies.

Review of norms concerning:

- type and frequency of maintenance;
- time required for maintenance;
- composition of service teams, and
- composition and workload of operation staff.

Establish facilities required for:

- ad hoc programmes of urgent repairs of schemes;
- routine programme of repairs and maintenance, and
- routine operation of scheme.

Development of Maintenance Programmes (spare parts, tools information system, etc. etc.)

Organization of support facilities and procedures for better O & M (systems approach).

Possible Programme Components, Approaches and Activities for Operation, Maintenance and Water Quality Surveillance Support Programmes (Contd.)

<u>Programme Component</u>	<u>Possible Approach</u>	<u>Possible Activities</u>
		Organize support facilities for O & M by way of: <ul style="list-style-type: none">- suitably located and stocked depots for tools and spares;- adequately staffed;- transport of men and materials;- information systems including reporting and follow-up;- teaching materials and manuals, and- communication.
		Establish local manufacture of spare parts and supplies.
Funding, Institutional Aspects and Programme Evaluation.	Review of institutional policies to ensure O & M aspects are given due weightage in water and sanitation schemes.	Review institutional policies. Review and ensure adequacy of revenue and budgeting. Cost control. Ensure resources are available for undertaking a phased programme of work and seek external resources, if necessary. Cost benefit studies.
	Implementation of community involvement.	Undertake periodic evaluation and assessment of programme. Undertake periodic evaluation of the effectiveness of lines of communication and authority within the organization and between other organizations.
	Ensure availability of funds.	Activate NAC/Ministries/Agencies to demand better O & M of completed schemes.

Possible Programme Components, Approaches and Activities for Operation,
Maintenance and Water Quality Surveillance Support Programmes (Contd.)

<u>Programme Component</u>	<u>Possible Approach</u>	<u>Possible Activities</u>
Community Involvement	Promotion of community involvement.	<p>Promote public relations.</p> <p>Promote community involvement in local planning, construction and in O & M.</p> <p>Control application of technology so that community can operate and maintain their systems.</p> <p>Provide training in O & M to people from community and at a level commensurate with their skill, knowledge and financial ability.</p> <p>Undertake health education for better use of facilities.</p> <p>Promote cooperation between public health workers and technical personnel at the community level.</p>

ANALYSIS OF PROGRAMME COMPONENTS FOR THE DECADE

Possible Additional Programme Components, Approaches
and Activities for Operation and Maintenance, etc

<u>Programme Component</u>	<u>Possible Approach</u>	<u>Possible Activities</u>
Legislation and Policies	Proper allocation of duties/responsibilities between water supplying and controlling agencies.	Review existing duties/responsibilities in the light of agreed guiding principles between related agencies.
	Determination of surveillance priorities taking into account size of community and relative risk to health.	Assessment of current surveillance programmes: (i) communities to be covered in a phased programme; (ii) level of surveillance considered appropriate for rural and urban communities, and (iii) level of surveillance for special situations (slum areas and urban fringes, touristic areas, disaster situations, etc.).
	Formulation of drinking water quality standards and required legislation for enforcement.	Set appropriate level of water quality standards source protection and waste management for rural and urban communities, treated and untreated water supplies, etc. Ensure enabling legislation exists or develop new legislation to enable enforcement of water quality standards.
Technological Aspects in Implementation.	Acquisition of data for programme planning.	Prepare inventory of existing water supply system and size of communities served and areas of special concern. Promote investigation and preparation of codes of practice.

Possible Additional Programme
Activities for Operation and

Programme Component

Possible Approach

Possible Activities

Primary surveys.

Formulation of guidelines for undertaking sanitary surveys for both new and existing systems (extent of survey, frequency, etc.)

Sampling and analysis.

Formulation of guidelines for sampling and analysis of drinking water (sampling, frequency, parameters, analytical methods, reporting methods).

Preparation and implementation of a phased programme for sampling and analysis reporting and provision of personnel, laboratory and transport facilities for implementing it.

Improvement in treatment and distribution systems.

Promotion of adequate disinfection and treatment facilities.

Survey and control of possible cross connections.

Provision of adequate engineering protection of water sources from surface contamination.

Review and improvement of intermittent distribution systems.

SEQUENCING OF ACTIVITIES FOR IDWSSD PROGRAMME

T 21021

Support Programme for Operation & Maintenance - Water Quality Surveillance

S.No.	ACTIVITY	1982												1983											
		J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
1.	Pre inventories	←	←	←	←	←																			
2.	Assess programme	←	←	←	←	←	←	←																	
3.	Decade programmes		←	←	←	←	←	←	←																
4.	Assess requirements			←	←	←	←	←	←	←															
5.	Estimate requirements				←	←	←	←	←	←	←	←	←	←	←										
6.	Estimate resources					←	←	←	←	←	←	←	←	←	←	←									
7.	Strengthen O & M						←	←	←	←	←	←	←	←	←	←	←	←	←	←	←	←	←	←	
8.	'Monitor and Evaluate						←	←	←	←	←	←	←	←	←	←	←	←	←	←	←	←	←	←	

