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# Global Consultation on Safe Water and Sanitation for the 1990s



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# REGIONAL STATEMENTS

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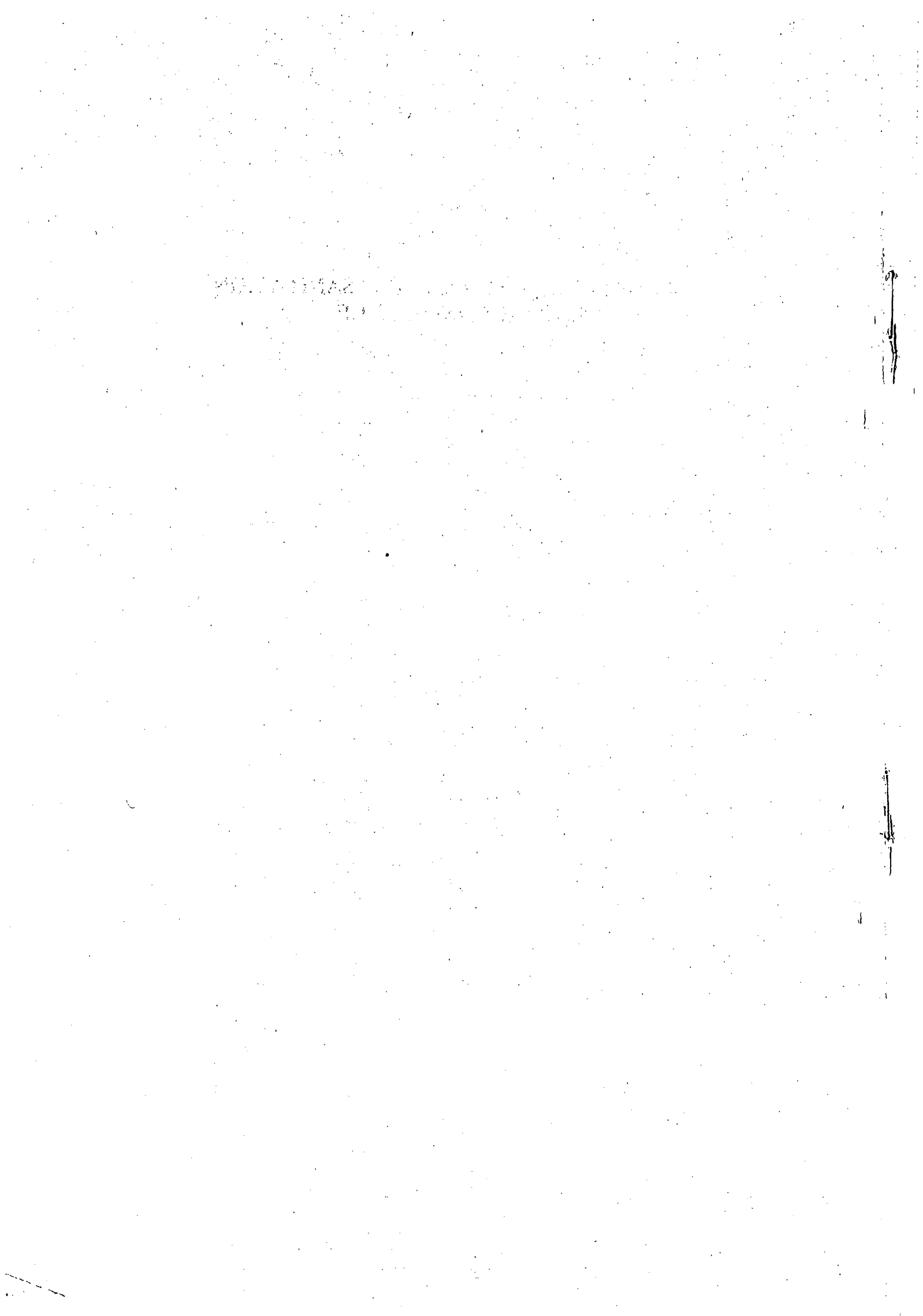
AFRICAN WATER SUPPLY AND SANITATION  
SECTOR CONFERENCE

Abidjan, 10-11 May 1990

MEETING REPORT

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August 1990



**AFRICAN WATER SUPPLY AND SANITATION  
SECTOR CONFERENCE**

Abidjan, May 1990

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## **Conference Statement**

Delegates from 46 African countries met in Abidjan, Côte d'Ivoire, on 10-11 May, 1990, and reached agreement on the approaches and strategies needed to tackle their formidable problems in meeting the water supply and sanitation needs of the continent's urban and rural populations in the 1990s. The outcome of their deliberations, entitled *Guidelines for the Development of Country Strategies for the 1990s*, is attached as Annex 1 to the present Conference Statement. Prior to the Conference, the delegates held a three-day workshop on rural water supply and sanitation issues, the conclusions of which are attached as Annex 2.

The *International Drinking Water Supply and Sanitation Decade* (1981-1990) has provided sector policy makers with many lessons, and cooperation between countries in the sharing of skills and experiences has enabled these lessons to be incorporated in what will now be a concerted approach to providing improved and sustainable services and resulting health and social benefits to the maximum number of people in the coming decade.

Following the *Abidjan Accord*, each country is committed to promoting sector development strategies and policies which will ensure equitable provision of water supplies and improved sanitation facilities to those in greatest need. The *Guidelines for the Development of Country Strategies* (Annex 1) have been endorsed by the 30 representatives of the external support community attending the meeting, who expressed a willingness to respond positively to government requests for support in implementing them.

A temporary Regional Committee of five African sector specialists<sup>1)</sup> was set up to oversee the final drafting of the Guidelines for the Development of Country Strategies. Following the recommendations of the Conference, the African Development Bank has been requested to organize a *Regional Orientation Committee*, which will meet periodically to review implementation of water supply and sanitation strategies in Africa in the coming years, and recommend any necessary adjustment to the Guidelines to suit changing circumstances.

In formulating their individual strategies, the countries of Africa will now be able to adopt a series of approaches which have proved to be successful, and to work together to find ways of overcoming what are recognized to be daunting constraints. Despite the severe economic plight of many countries, the continuing effects of natural disasters, and the increasing problems caused by rapid urbanization, countries face the 1990s with confidence that their joint efforts can make most effective use of scarce resources.

Under the agreed Guidelines, countries will adopt strategies with clearly defined objectives for the sector, establishing the responsibility and authority of institutions at all levels and taking maximum advantage of the proven strengths of non-governmental organizations in assisting with the implementation and upkeep of projects. Investments will be based on the effective demand and long-term sustainability of services, with priority given to rehabilitation of existing facilities, use of low-cost appropriate technologies and development of national capacities in the planning, design and implementation of new programmes.

Community and especially women's participation will be an integral part of project development and implementation, varying only in degree between conventional urban projects and programmes in periurban and rural areas. The agreed approaches include the development of methodologies and systems for involving women in the formulation of strategies and the planning of programmes. Water supply and sanitation programmes will be developed in an integrated way, and will be planned in coordination with programmes in associated sectors such as urban and rural development, and environmental protection. In the countries where Dracunculiasis (Guinea Worm) is endemic, water supply and primary health care interventions will be linked to eradication campaigns as a matter of priority.

The special problems of watershort areas and the increasing demand for finite resources will be addressed through an integrated approach to water resources management, involving detailed consideration of supply, demand, conservation and protection. Promotion and use of appropriate recycling and conservation technologies will be backed by support programmes in applied research.

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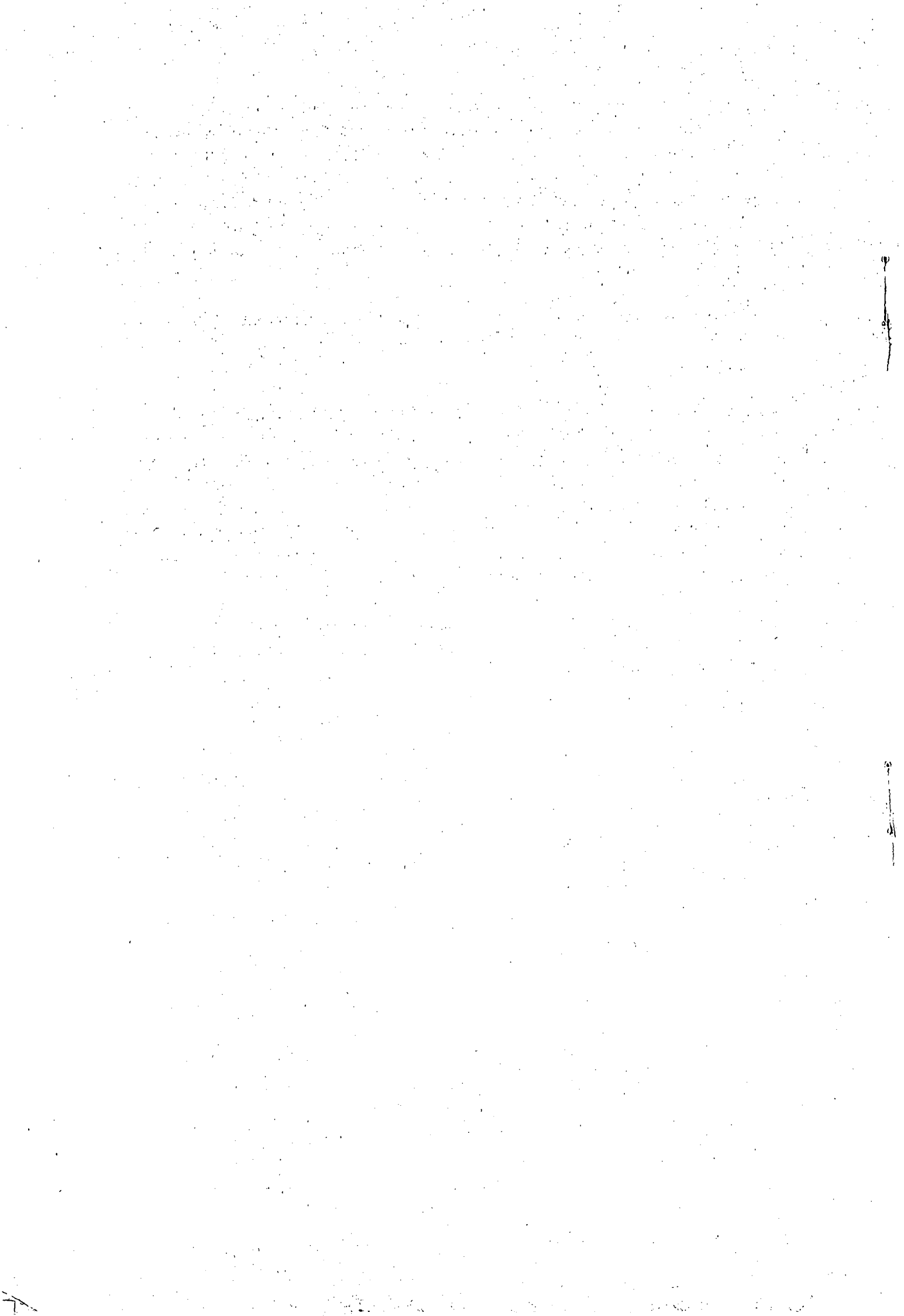
<sup>1)</sup>The Chairmen of the five Working Groups which developed the Consultation working paper into an agreed strategy: Messrs. Cardoso of Guinea Bissau, Nenonene of Togo, Kadima Mwamba of Zaire, Ceko of Swaziland, and Birru Ittisa of Ethiopia

Strategies provide for cost sharing between governments and beneficiaries in ways which best match the ability and willingness to pay of consumers with the objective of full sustainability. While it is recognized that subsidies will be needed in many African countries for some time to come, policies adopted will bring financial viability to sector organizations, economic efficiency and social equity. New avenues are being sought to mobilize financial resources for the sector through the creation of appropriate financial intermediaries, such as credit unions, and initiatives through the banking sector.

The Abidjan Accord has been reached in a spirit of cooperation and collaboration which must be continued. The detailed agreement on strategic approaches will now be widely disseminated.

For the future, the Abidjan delegates are committed to continuing their collaborative efforts, and will immediately seek mechanisms - including the proposed Regional Orientation Committee - to ensure regular exchange of expertise and experience within the region. In this they have been assured the full support of the African Development Bank, the World Bank and of other external support agencies. Sector specialists will seek the cooperation of political leaders and external support agencies in promoting the enormous needs of the sector at every opportunity to as wide an audience as possible.

Meanwhile, the countries have asked that this statement of commitment, and the strategies which will result from it, should be promoted widely, beginning with the Global Consultation to be held in New Delhi, India in September 1990.



**AFRICAN WATER SUPPLY AND SANITATION SECTOR CONFERENCE**

Abidjan, May 10-11, 1990

**Guidelines for the Development of  
Country Strategies for the 1990s**

14 August 1990



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# Summary

The Decade has provided sector policy makers with many lessons, some of them self-evident and universally accepted, others less easily recognized. Implementation of strategies developed on the basis of these lessons should help accomplish long-term improvements in the management and operations of the sector, increasing its efficiency and its ability to finance a greater proportion of investments from its own resources. This would make the sector more attractive for external investments and, hopefully, would lead to the generation of the financial resources needed to reach the goals set for the sector at the beginning of the Decade.

## Suggested strategies for the 1990s

1. Each country should formulate a sector development strategy defining, inter alia, sector objectives, institutional responsibility and authority, and resource allocation and cost recovery policies (at government request, ESAs<sup>1</sup>) may advise on the formulation of this strategy).
2. All participants in the sector's development - both ESAs and country organizations - should be governed by this development strategy. ESAs should increase collaborative and complementary activities to increase sector effectiveness.
3. Investments should be based on effective demand and long-term sustainability by the users (by payment or by their own efforts) of the facilities built. Tariffs set to recover the cost of service should ensure the financial viability of the service organization, economic efficiency, and social equity.
4. Access to capital market and private savings by the sector should be promoted through the creation of appropriate financial intermediaries.
5. Rehabilitation and maintenance of assets and effective management should be given priority, both for operational reasons and to make the sector more attractive to investors.

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<sup>1</sup>ESA: External Support Agency

6. Community and especially women's participation must be an integral part of all project development and implementation, varying only in degree between conventional urban and periurban or rural projects.
7. Institutional decentralization and restructuring should be implemented to bring decision-making closer to the user. Privatization, including community ownership should be part of this restructuring, as appropriate.
8. Technologies should be appropriate to the socio-cultural conditions in the communities they are designed to serve, and should be the least-cost solution to solve the problem at hand. The use of appropriate technology must be promoted through training, information dissemination and applied research programs.
9. To accelerate service to the underserved, investment priority should be to provide the maximum number of people with at least basic service before upgrading service standards of those already with adequate service.
10. The scope of sector services should include water supply, sanitation and hygiene education, with rainwater drainage and solid waste removal understood to be integral part of any comprehensive sanitation strategy.
11. The African Development Bank and other organizations should be encouraged to organize regular regional meetings to provide for the exchange of experience and expertise among African countries. At the regional and sub-regional level, a Regional Orientation Committee should be established, which would meet periodically to review sector progress and strategies, and recommend adjustment to the Strategy Guidelines, as necessary.

# Introduction

## Background

1. The 1980s were declared the International Drinking Water Supply and Sanitation Decade by the United Nations, in order to give the sector greater visibility and to encourage governments and donors to provide all communities with adequate services by the end of the Decade. That objective has not been accomplished. However, considerable advances were made in developing more cost effective approaches.

2. The new methods include the use of a greater variety of technologies which are more responsive to the users' socio-economic environment, and which stress the participation of communities (and particularly of women) in the decisions on technology choice, on financing, and in the operation and maintenance of facilities. Properly implemented, these new approaches promise for the 1990s what the Decade could not achieve.

3. These considerations are equally true for urban and rural areas and their subdivisions, although the emphasis and method of application may be different because:

**There is no universal solution appropriate for every situation, only a common objective: to select from all the choices available the one the community is able to sustain over the long term, however the community is defined, and however it sustains the facilities, by its own labor or by paying someone to do it.**

In the future, the greatest success of the Decade may very well be seen to have been the creation of the awareness of these issues by those responsible for sector development.

## Objective

**4. The objective of this paper is to help countries to develop strategies for the sector which will enhance the prospects of achieving more rapid progress towards the achievement of their targets in the 1990s.**

5. Because strategies must reflect country conditions, this paper presents a sector program outline which can be adapted by each country to its own situation. The program outline:

- briefly discusses issues
- explains the process of program development, and
- suggests policies and strategies.

The paper then concludes with suggestions on how international collaboration can contribute to a country's development of the sector.

6. A draft of this paper was presented by the African Development Bank as a contribution towards the development of sector strategies for the 1990s. Its final version reflects the discussions held among delegates from African countries and ESAs during the Abidjan Conference.

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## Sector planning and programming

7. To achieve satisfactory results, any organization must define its objectives, formulate policies on how to achieve them, and devise a strategy for actions which will achieve the desired result. In the water sector, governments usually determine or at least approve objectives, and set policies which define the sector organizations' responsibilities and operating authority. These organizations in turn define strategies and action plans to implement them. The following is a brief outline of this process.

### Sector Objectives

8. There are several major objectives common to most programs:
- **Social and economic development**
  - **Support to urban and rural development**
  - **Improvement of human health and productivity, as well as relief from the chore of water collection;**
  - **Support to economically productive activities, such as industry, commerce, and tourism**
  - **Long-term sustainability and financial self-sufficiency**
  - **Provision of basic services to as many people as possible, rather than the enhancement of levels of service for those already served.**
  - **Protection of the environment, and particularly of water resources**

### Policies

9. To achieve the objectives, policies should provide for:
- **Community Participation** in rural and periurban areas
  - **Institutions and Support Structures** appropriate to the communities being served
  - **Coordinating Mechanisms**, since most programs will involve activities by a large number of organizations
  - **Project Justification Criteria** based on priority of service to the underserved, optimization of investments, and long-term sustainability of services
  - **Resource Allocation and Cost Recovery** leading to financial self-sufficiency of the sector and, ultimately, to the principle of user payment for services

- **Institutional and Human Resource Development** conditions clearly establishing institutional responsibilities and autonomy
- Promotion of and support to sector-related **local enterprises**

## **The Implementation Process**

10. The process leading to the approval and implementation of sector plans and programs proceeds in several steps, and involves activities which can take place simultaneously. It needs to consider policies, strategies and programs which already exist, and to modify or confirm them. The steps consist of :

1. **A Statement of Position (Position Paper)**
2. **Discussion of Issues (Issues Paper)**
3. **Strategy Formulation**
4. **An Action Plan**

ESAs should be involved in each step of the implementation process, as appropriate, but should not seek to influence the content of the strategy or Action Plan.

### **The Position Paper**

11. This paper provides country background and information about the sector necessary to evaluate its performance and identify constraints impeding its progress. The topics to be covered are the following:

- **Country Background**
- **Economic and Health Indicators**
- **Water Resource Availability**
- **Sector Organization**
- **Service Coverage and Extension Standards**
- **Quality Standards**
- **Sector Objectives**
- **Financial Implications**
- **Involvement of NGOs**
- **Involvement of External Support Agencies**

### **The Issues Paper**

12. Its purpose is to present the major constraints which affect the progress of the sector, and to provide the analysis which leads to the establishment or revision of objectives, policies, strategies and plans. Both what has worked well and what has failed need to be evaluated. The water and sanitation sector is extraordinarily complex because it affects developmental and human behaviour issues and in turn

is affected by them. Some of the principle issues are discussed below:

### *Institutional Development*

13. Institutional Development is invariably the most difficult problem faced by the sector. This is because the problems concern not only the institutions themselves, but also deal with government policies and political issues:

14. The ROLE OF THE GOVERNMENT should gradually shift from that of a provider to that of a promoter.

15. COMMUNITY PARTICIPATION is essential to all projects if they are to be successful. Community participation ranges from marketing efforts to convince users in urban core areas of the need for proposed measures (and the inevitable tariff increase), to actual participation of the user in the decision-making and implementation process in rural areas or periurban districts.

16. DECENTRALIZATION is essential if an organization is to be responsive to local communities. Ideally, the objective should be to create a support structure which will help the community (however defined) to implement, operate and maintain its own systems. Where a highly-centralized structure exists, the first step may be to ensure that true decision-making authority is transferred to local level, within overall guidelines laid down at central level. If this is successful, it can be followed by devolution of autonomy to the local unit.

17. PRIVATIZATION is one of several possibilities to achieve decentralization and improved operational efficiency. The overall aim should be to take maximum advantage of the resources and capabilities of public sector agencies (at all levels), non-government organizations, and the private sector (formal and informal). A decision on full or partial privatization should be based on whether the private service provided is superior at the same or lesser cost than the same service if provided by public authorities. Where appropriate, the transfer of authority can be achieved step by step ; in a number of African countries, one intermediate step could be to strengthen and give appropriate authority to regional and local public sector bodies and to community organizations, and to equip them to implement, operate and maintain water and sanitation facilities.

18. In rural and periurban areas, many responsibilities can be transferred to NON-GOVERNMENTAL ORGANIZATIONS (NGOs); these are often better equipped to perform outreach and grassroot-level tasks.

### *Resource Mobilization*

19. Policy setting on resource mobilization is the responsibility of the government;



policies will be defined according to sustainability and development objectives of the sector for urban and rural areas alike. there will be policies on operation, maintenance, rehabilitation, replacement, and extensions.

20. In urban areas, operation and maintenance should be funded from charges for services provided by the institution. Rehabilitation, replacement and extensions may be financed from borrowings because sufficient capital cannot normally be generated from current income or accumulated savings. Grants are often used to provide funds for capital expansion, but no government or external donor is able to satisfy the sector's capital needs over the long term.

21. EFFICIENT OPERATION, including adequate maintenance of assets, is an indispensable condition to attract capital and to engender in a user a willingness to pay for services provided. Unaccounted-for water rates of 50% tell both user and financier of incompetent operations.

22. EFFECTIVE DEMAND determination is the basis for developing sound investment programs which are a second prerequisite to attract capital; its absence in the past has commonly resulted in overestimation of consumer demand, excessive investment and, consequently, inadequate revenues. *There is no doubt that in the long term the users in the water and sanitation sector have to pay for the services they receive, just as they do in other service sectors.* Users must therefore be in a position to express how much they are willing to pay for a given standard of service (effective demand) and have a say in determining that standard. It follows that technology and service level options available must be clearly linked to ability of potential beneficiaries to pay for them. Design for effective demand will result in efficient projects, and avoid excessive investment and excessive financial burdens on government.

23. EQUITABLE CHARGES FOR COST RECOVERY are required for a fair allocation of the financial burden on the consumer. Charges, whether based on metered consumption of water for both water and sewerage, earmarked real estate taxes, charges for on-site pit emptying or maintenance, environmental improvement taxes or others, must incorporate three important factors; they must:

- signal to the consumer the financial cost of the service (by charging at least the marginal cost at the highest level of water consumption)
- provide the necessary income to the institution to enable it to operate and maintain its assets and provide funds for routine expansion
- be equitable by charging appropriately for each standard of service

24. In rural areas, the principle of cost recovery through user payments may have to be established step by step, taking into account the ability of beneficiaries to pay for the services. In order to enhance this ability, sector project should include income-generating activities. Moreover, rural banks and credit unions should be de-

velopped to facilitate lending to communities for sector projects.

25. FINANCIAL INTERMEDIARIES for investment funds will assume greater importance with increasing decentralization of the sector. Decentralization should therefore provide for appropriate mechanisms to channel funds to sector institutions from government and external donors.

#### *Financial and economic benefits*

26. Financial and Economic Benefits must justify project investments in any sector. The water supply and sanitation sector is no exception, merely a sector in which it is more difficult to quantify benefits. Careful analysis of health and environmental benefits often helps to quantify at least some of them. As a minimum, such an analysis will help to identify ways and means to reduce cost and/or optimize benefits. The principal benefits listed often include:

- Health benefits and improved quality of life
- Increased income, due to greater personal productivity
- Income from the sale of water and the provision of sanitation services
- Increased commercial and industrial activities
- Increased value of real estate
- Reduction of health care costs
- Improvements in environmental conditions

#### *Improved health*

27. Improved Health is an important benefit of adequate water supply and sanitation services. Adequate access to drinking water is, among other things, a vital factor in the fight against dracunculiasis. However, health improvements require other interventions, such as hygiene education, not just water supply and sanitation. A recent review of literature by WHO revealed that such a combination can reduce diarrhoea morbidity by as much as 50%. *Linkages* have therefore to be established with organizations responsible for hygiene education. Recent work also indicates that filariasis and dengue fever are on the increase in urban areas. Lack of proper drainage and inadequate environmental services contribute to this increase.

#### *The role of women*

28. One of the anomalies in *rural water supply and sanitation* at the beginning of the Decade was that women, responsible since time immemorial for carrying water to the household, were not given the responsibility to maintain simple water systems when they became available to the community. Today, women are becoming equal partners in the management of water facilities in rural communities. *In the urban areas, particularly in the neglected periurban areas*, women's role in the sectors's de-

velopment is just as important. They are productive members of the urban society and generate income through many economic activities, as independent entrepreneurs and as employees. These economic activities come to a halt, or are at least seriously reduced, when a woman has to go in search of water, wait in line for it, or take care of a sick family member. Women therefore have a vested interest in the sector's performance, and must also become partners in the sector's development.

#### *Technology choice*

29. Technology Choice was a major issue at the beginning of the Decade, primarily because the standard approach at the time was based on industrialized countries' technologies. Today there exists a consensus that technology must be appropriate to the socio-cultural environment where it is to be used, to the financial capacity of the user to pay for it, and to the user's ability to operate and maintain it. Experience shows that these are indispensable conditions for the achievement of long-term sustainability. To this end, it is necessary to encourage and support applied research efforts in centres in the countries of the region. Technology choices should take into consideration the advantages of standardization; this should be recognized by ESAs.

#### *Environmental impacts*

30. Environmental impacts caused by inadequate water supply and sanitation are particularly serious for inhabitants of periurban areas, although they also affect, but to a lesser degree, the entire urban and adjacent rural population. For the periurban dweller, the polluted nearby surface waters are often the principal source of water, supplemented by expensive drinking water from vendors. Health hazards and the financial drain on limited resources are obvious.

#### *An integrated approach*

31. An integrated approach to the provision of expanded sector services in urban areas should be considered, so that the impact and the complementarity of various interventions can be evaluated, and coordinated solutions implemented, in order to provide the benefits of water supply and sanitation to the greatest number of people at least cost.

#### *Water resources development*

32. Water resource development, the allocation and efficient use of water resources, is an increasingly important issue for water supply and sanitation sector organizations. When water resources are scarce, priority should be given to the provision of drinking water. Urban institutions in particular must encourage water conservation (through the use of appliances with low water consumption, appropriate

tariffs, etc.) to reduce the cost of importing water and the expenses of subsequent disposal.

### Strategy Formulation

33. Strategies describe how the government expects its policies to be implemented, and what actions are to be taken to achieve the desired objectives. They should specify, *inter alia*, that:

- **Effective Demand** should be the basis of project and program design, in order to ensure the long-term sustainability of new projects.
- **Rehabilitation** of existing assets has to be given priority over the addition of new assets. As a minimum, financing of new facilities should be conditional on concurrent rehabilitation of existing deteriorated assets.
- **Credit and Repayment Mechanisms** gradually leading to financial self-sufficiency of the sector must be established. To this end, the government must promote and provide incentives for savings and encourage the development of financial intermediaries through the banking sector.
- **Technology Choice** should be based on appropriateness and meeting effective demand at least cost with due consideration for the benefits of standardization.
- **Training and Applied Research Activities** must continue to contribute to the development of appropriate technology.
- **Community Participation in the Management** of periurban and rural water supply and sanitation facilities is required to achieve long-term sustainability.
- **Initial Activities** in the development of periurban and rural water supply and sanitation programs should always include hygiene education and the promotion of community participation.
- **Replicability** on a large scale is essential and should be encouraged so that rural and periurban water supply and sanitation coverage can be significantly improved.
- **Decentralization**, including strengthening of the role and powers of local agencies of public sector institutions should be introduced or reinforced.
- Where appropriate, a legal framework for **direct program-contracts** between these agencies and governments should be established.
- **Privatization** of parts or all of the water supply, sanitation and solid waste disposal activities should be encouraged where appropriate.
- **Exchange of experience** at national and regional level should be encouraged, so that sector decision-makers can learn from experience elsewhere and so improve their own sector's performance. At national level, promotional multi-agency National Action Committees, suitably strengthened and authorized, can provide effective means of transferring information and integrating sector policies; regionally, countries should support initiatives to exchange experience and expertise through such mechanisms as the proposed Regional Orientation Committee and regional professional associations. Within individual projects, a budget line needs to be provided for the collection of technical information

and its dissemination.

- **Collaboration with External Support Agencies** should follow established government policies, priorities and strategies.
- **Sensitization of Communities** to the needs for and benefits of improved water supply, sanitation and health education is an important prerequisite of programme planning based on effective demand.
- A **National Action Plan** should be formulated, which reflects not just the perceived needs of the water and sanitation sector, but also other sector priorities, and the links between sectors.

### **The Plan of Action**

34. The plan prescribes all those actions required to implement the strategy, and should include:

- *Government Approvals*; and
- *Implementation Activities*, with a schedule for their completion

35. The plan of action should result in:

- **Objectives, and policies for their implementation, which will result in the provision of water supply and sanitation services on a sustainable basis to the largest number of people possible with any given amount of funding.**
- **A coordinating mechanism at the policy level which ensures that all organizations active in the sector, including ESAs, follow the same policies in pursuit of the same objectives.**
- **A decentralized support structure which can provide assistance to the community for tasks which exceed its ability to undertake, coordinate input from other sectors (public health, etc.), develop sector programs and projects and provide the training to communities and institutions necessary to enable them to develop and implement water and sanitation projects.**
- **A pipeline of investment projects prepared in accordance with the objectives and policies of the sector.**
- **Steps to be taken in order to foster applied research and disseminate information.**
- **Corollary activities designed to increase self-reliance of the sector (promotion of local manufacturing, etc.).**

36. *Monitoring and Evaluation* must be an integral part of any sector program. Project developers must learn from implementation experience to avoid repeating mistakes and to increase the efficiency of the sector.

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## Collaboration and the role of External Support Agencies

### The Role of External Support Agencies

37. It should be noted that **responsibility for the provision of water and sanitation services, for setting policies and for determining priorities, is the countries' alone.**

38. ESAs support and assist with their activities, but they do not assume responsibility for the sector. Although this seems self-evident, past history shows an often excessive influence by ESAs on sector policies. Preference for inappropriate technologies, lack of socio-cultural sensitivity and sometimes conflicting approaches and priorities (amongst themselves and with government agencies), have resulted in problems.

39. On the positive side, ESAs have had many beneficial impacts with their participation in the development of the sector. A number of sector organizations have benefitted from ESA-supported training of staff, and their financial support has made possible large and small sector development projects without which millions of people now provided with service would still be without it. The impact of lenders on the rational development of sector policies, investment strategies and institutional development is recognized.

### ESA Strategies

40. Each ESA has objectives set by its government or governing body and strategies to implement them. Objectives may emphasize specific subsectors, for example rural water supply, strategies for implementation and, indeed, priorities in country selection. Most are reasonably flexible in their implementation policies.

### ESA Coordination and Collaboration

41. During the various roundtable discussions which took place during the Decade and in which both ESAs and government sector representatives have participated, a consensus on sector concepts has evolved which includes the role ESAs should play in their promotion/implementation. The concepts are described in detail in the World Health Organization booklet : *Global Sector Concepts for Water Supply and Sanitation*, dated March 1987.

42. Agreement on sector development strategies under the umbrella of a national policy framework would make the activities of all ESAs in the country more efficient. Eventually, these efforts would lead to sector program lending (credits) which are more efficient tools for providing financial support to the sector than project-by-project financial assistance.

43. Cooperation within agreed-upon national policies would result in greater opportunities for collaboration. A typical example is the financing of physical facilities by one ESA and the training of local staff by another. A variety of other opportunities for collaboration exist at country level:

44. The UNITED NATIONS DEVELOPMENT PROGRAMME (UNDP) is funding technical assistance programs from interregional, regional and country funds. The best known of these programs is the project sponsoring the Regional Water Supply and Sanitation Groups located in Abidjan and Nairobi. Many bilateral agencies are participating in this project, either by seconding staff to it or by supporting it financially. The project cooperates with governments in the formulation of sector programs and action plans, the preparation of projects and institutional development. A companion project, the International Training Network (ITN), is devoted specifically to train national staff in the use of appropriate technology and related topics. This project also is supported by bilateral organizations. The project can serve to further increase collaboration at country level and develop consensus on policy and strategies.

45. HEALTH FOR ALL BY THE YEAR 2000 is a WHO program which includes water supply and sanitation in its primary health care activities. This program could promote hygiene education in water and sanitation sector expansion programs.

46. HEALTHY CITIES is another WHO project supported by UNDP which deals with the improvement of the urban human environmental health conditions and which could assist national efforts in the improvement of sector services.

47. The MEGA-CITIES PROJECT supported by UNDP attempts to disseminate information about successful problem-solving in major cities so others can employ similar methods to improve their municipal services, including environmental services.

### **Information Exchange**

48. To coordinate activities successfully, in particular to plan ahead for such cooperation, requires the systematic exchange of information about forthcoming activities as early as possible. The information retrieval system (CESI) developed by WHO can serve this purpose if supported by ESAs and Governments. Access to CESI or similar information centres should be made easy for governments.

## **Regional Cooperation and the Collaborative Council.**

### **Regional Cooperation**

49. Regional consultations organized by WHO and UNDP with the support of various bilateral agencies have led to a fair degree of consensus on the important issues of the sector's development. These consultations were organized on an *ad hoc* basis. They helped the exchange of information between representatives of donors and countries, but there have been no opportunities for sector policy makers to meet on a regular basis.

50. The sector could clearly benefit from a more systematic exchange of information at all levels, among Governments and ESAs. Knowledge of successes (and failures) or of new approaches implemented in one country, can contribute to solving similar problems in another. Use of scarce expertise or resources to undertake applied research or demonstration projects to solve a generic problem or test a new approach may be far more cost-effective if shared than if each problem were tackled independently.

51. The ADB is a regional development financing institution involved in financing projects in the sector in Africa since 1968. It has collaborated with multilateral and bilateral financing institutions, UN Agencies and NGOs involved in the sector in Africa. Based on the experience gained in its years of involvement, ADB has developed and adopted a sector lending policy for its activities in the Continent. As such, it could, with the help of other institutions, mobilize the necessary human and financial resources to help its member countries develop adequate sector policies and strategies that will ensure:

- development and strengthening of the management and operation institutions,
- selection of the most appropriate and effective projects, and
- the systematic extension of water and sanitation services to the most deserving section of the population.

### **Regional Orientation Committee**

52. In order to strengthen regional consultation and cooperation for the development of the sector, the Conference requests ADB to set up a Regional Orientation Committee as soon as possible. In doing so, to the extent possible, the Orientation Committee should rely on existing sector organizations. The objectives of the Committee would be:

- to monitor the development of the water and sanitation sector and the implementation of the strategy recommended by the Abidjan Conference;
- to promote the exchange of experience and the sharing of skills;



- to review the orientations of programmes undertaken at regional and subregional levels;
- to liaise with the global consultation bodies, in particular with the Collaborative Council and similar bodies.

53. The Regional Orientation Committee, which should keep a light structure, will include

- (i) Representatives from the various regional groups formed at the Conference<sup>1)</sup>;
- (ii) Representatives of organizations and institutions active in the sector at the regional or subregional levels;
- (iii) Representatives of multilateral agencies, including ADB, the World Bank, UNDP, WHO, ECA, and Unicef.

### **Collaborative Council**

53. The ESAs participating in the Collaborative Council do so in order to exchange information about their activities for the purpose of promoting cooperation at country level, to share experiences to improve the effectiveness of their individual programs and projects, and to encourage joint activities on topics of common interest such as applied research, dissemination of information, and institutional development. The Collaborative Council has also increasingly become a forum where sector professionals from developed and developing countries can meet and exchange ideas. Consequently, it is desirable that the proposed Regional Orientation Committee be represented in the Collaborative Council. It is equally desirable that the Collaborative Council assist regional agencies (such as ADB) in mobilizing ESA support for regional activities such as workshops, seminars and other consultations and collaborative activities.

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<sup>1)</sup>*Group 1:* Algeria, Burkina Faso, Cape Verde, Chad, Guinea Bissau, Mali, Morocco, Mauritania, Niger, and Senegal; *Group 2:* Benin, Cameroon, Central African Republic, Congo, Cote d'Ivoire, Equatorial Guinea, Gabon, Guinea, Sao Tome and Principe, and Togo; *Group 3:* Angola, Burundi, Comoros, Djibouti, Madagascar, Rwanda, and Zaire; *Group 4:* Botswana, Lesotho, Malawi, Mauritius, Mozambique, Swaziland, Tanzania, Zambia, and Zimbabwe; *Group 5:* Ethiopia, The Gambia, Ghana, Kenya, Nigeria, Sierra Leone, Sudan, and Uganda.

## ENGLISH

### 3 Group discussion reports

#### Group 1

Countries: Algeria, Burkina Faso, Cape Verde, Chad, Guinea-Bissau, Mali, Mauritania, Morocco, Niger, and Senegal

Observers: CIDA, ADB, World Bank, BOAD, CCCE, EEC, CIEH, WHO, DTCD, UNDP

Chairman: Mr. Cardoso, Secretary of State for Natural Resources of Guinea-Bissau

Rapporteur: Mr. Lahlou, Finance Manager of the Morocco National Drinking Water Office

Facilitator: Mr. Ouali of ADB

#### Introduction

The group reviewed the objectives and strategies of the water and sanitation sector beyond the IDWSSD and came up with the following observations and recommendations:

#### Observations and recommendations

Group 1 noted that African countries are facing challenges in the field of water supply and sanitation, and will still be facing them during the next Decade: not only must the sector make up for being behind schedule, but it must also face increasing demand as a result of the demographic pressure due to natural population growth as well as to the urban drift. This challenge is all the more important since water is a limited resource and its scarcity is more acutely felt, and since this multipurpose resource is facing mounting risks of contamination and pollution. Difficulties are aggravated, both because of the financial austerity that some countries have to introduce, and because of natural disasters (draughts, desertification, etc...) that may affect our resources as well as our economies.

In spite of these problems, and in view of the fact that the provision of water supply and of sanitation, with reciprocal interaction anyway, is the essential element in the improvement of hygiene and health conditions of the population and in the fight against water-related diseases, and indeed in the eradication of some of them such as the Guinea worm, Group 1 recommends to aim at the objective of the provision of adequate water supply and sanitation for all by the year 2000.

In this context, Group 1 considers that the documents presented by ADB and by the Union of African Water Suppliers (UADE) are a valid basis for the definition of water supply and sanitation strategies for the years beyond the IDWSSD. These documents, which complement one another in a way, should also take into account the report on rural water supply and sanitation presented by Group 1 on May 8, 1990.

Furthermore, the group stresses the importance it gives to the following points:

1. A global approach, not a partial, sectorial, technical or technological approach, must be used when dealing with water supply and sanitation. The global approach must encompass all aspects, including the environmental ones with a direct or indirect impact on the quality or the quantity of water that may be used for human consumption;
2. Take all measures that will favour the preservation and the protection of water resources;
3. Base project planning and implementation on effective demand and on the needs during a lifetime determined in function of the economic activities;
4. Pay a special attention to sanitation and strongly encourage cost recovery, as well as the related training and extension activities;
5. Pay also attention to the drinking water supply in rural and periurban areas;
6. Create an adequate legal and institutional environment for the promotion of community participation at all the cycles of a projet;
7. Such an environment should also promote the participation of women in all the cycles;

8. Using all appropriate means (mass media, health education, etc.), promote the sensitization, the information and the training of the population;

9. Provide all the necessary training, at all levels, to ensure the success of projects and of cost-saving measures;

10. The responsabilization of local skills;

11. Seek cost reduction in particular through the use of appropriate technologies; to that end, applied research should be developed and encouraged through the involvement of universities and research institutions;

12. Select drinking water and waste water standards, with reference to the WHO standards, adjusted to the country reality and possibilities;

13. Encourage the establishment of structures for the control of the quality and the monitoring of the implementation of the standards (monitoring and supervision laboratories);

14. The need for country-specific objectives, implementation strategies, programmes and actions;

15. The importance of aiming at the best country-level coordination possible, involving all actors concerned;

16. The importance of the promotion of regional cooperation among countries with similar characteristics and of international cooperation;

17. The importance of the implementation of an institutional framework showing clearly the respective responsibilities of the governments and of the public or private sector institutions

18. Finally, Group 1 deems it necessary to:

a) present the recommendations of this meeting to the New Delhi Conference;

b) entrust a committee of African personalities and institutions such as ADB and UADE with the follow up, for our continent, of the implementation of the recommendations for the next decade

**Group 2**

**Countries** Benin, Cameroon, Central African Republic, Cote d'Ivoire, Congo, Equatorial Guinea, Gabon, Guinea, Sao Tome and Principe, and Togo

**Observers:** CIEH, CREPA, UADE, ADB, French Ministry of Cooperation

**Chairman:** Mr. Nenonene of Togo

**Rapporteur:** Mr. Abouki of Benin

**Co-Rapporteur:** Mr. Mangnougou of Congo

**Facilitator:** Mr. Zongo, ADB

Group 2 met on 10 May 1990 in order to review the Strategies for the 1990s proposed by the African Development Bank.

Mr. Zongo briefly presented the document, after which the discussions focussed on the following topics (See Annex 15):

1) *To what extent is the document, proposed as a guideline for governments to establish a national sector development strategy, in line with the main conclusions of the Workshop?*

2) *What amendments should be made to the document for it to be effectively used?*

As far as the first point is concerned, the working group has unanimously accepted the need for new strategies for the water and sanitation sector in the 1990s. In this respect, the document takes the various concerns expressed during the Workshop into consideration, i.e.:

- Selection of appropriate technology
- Community participation
- Health education
- Financial self-reliance (cost recovery)

With respect to the second point, the working group deems it necessary to bring some modifications to the proposed document; these modifications are attached in the annex.

The group then considered the subsidiary topics, and wishes to record the following:

Regarding question 3 (effective demand as a basis for investments and long-term sustainability through user payments), the group, although agreeing in principle, stresses the necessity for a distinction between urban and periurban or rural areas.

In urban areas, national solidarity requires that the water rate be defined based on cross-subsidization, so that rich areas support the poorer ones.

In periurban and rural areas, the notion of effective demand should be introduced gradually in order to ultimately reach financial self-sustainability.

Regarding point 4, the following measures are proposed:

- Inform the population on the advantages of savings;
- Encourage the creation of credit unions that will enable the mobilization of rural savings;
- Introduce revenue-generating micro-projects among peasants;
- Simplify the procedures for obtaining credits.

Regarding point 5, the following was observed:

- a) In the simple case of one department controlling all sector activities, coordination should rest within that department;
- b) in the case of several ministries being involved, a National Water Committee, with a permanent secretariate under one of the ministries, should be created or reactivated.

Finally, regarding point 6, the group unanimously considers that the proposed procedure is not to be regarded as a bureaucratic exercise, given that its implementation calls for the participation of all sector actors, namely the beneficiaries, the government, the ESAs, and the NGOs. The awareness of the various actors must be heightened in order to obtain their support and effective participation at the various stages. In the plan of action, the roles of the various actors should be well defined, and regular evaluations should be programmed.

#### Annex

Among the sector objectives, under the objective of improvement of health and of human productivity, a special

mention should be made of the eradication of water-related diseases, with specific reference to dracunculiasis in countries is endemic.

Under "policies", the sentence on resource allocation and cost recovery is to be reformulated in the following way: Resource Allocation and Cost Recovery, leading to financial self-sufficiency of the sector, and ultimately, to the principle of user payment for services.

On para 16, the working group acknowledged that a better efficiency can also be reached through program-contracts between the government and parastatals, ensuring the financial and management autonomy of the latter. Privatization should only be contemplated when these intermediary solution have no chance of success.

Regarding para 19 (formerly 17): Resource mobilization includes the collection of funds for design studies, construction, awareness-building, outreach, maintenance, etc.

Para 21 (19): Replace with: "A more rigorous approach to affordable demand and to user ability to pay is required for improved design and more adequate equipment specification."

Para 28 (25): Add: *"To this end, it is necessary to encourage and support on-going applied research efforts in various centres."*

Para 31 (28): When water resources are insufficient, priority should be given to the provision of drinking water.

Para 32 (29): Before the item on privatization, an item should be added to invite governments to establish program-contracts between the supervision authorities and the parastatal organizations.

### Group 3

Countries: Angola, Burundi, Comoro, Djibouti, Madagascar, Rwanda, and Zaïre

Chairman: Prof. Kadima Mwamba, CNAEA, Zaïre

Rapporteur: Mrs. Kabamba Bilonda, CNAEA, Zaïre

Facilitator: Mr. B. I. Mohlinger, ADB

1. The document "Strategy for the 1990s," presented by ADB and submitted to the scrutiny of

the working group, has been analysed point by point with great care.

2. The lively debates, a demonstration of the specific interest of the group for the proposals of this document, can be interpreted as a global approval of the text. However, in order to stay in line with the recommendation of the Workshops on Rural Water Supply and Sanitation, held in Abidjan on May 7 to 9, 1990, the Group agreed on the modification presented in the Annex.

3. Furthermore, so as not to offend sensibilities through tendentious or useless statements, Group 3 unanimously decided to simply remove paragraphs 51 and 53 (former 47 and 49).

#### Recommendations

4. Group 3 recommends that ADB keep its active support and promotion of the formulation and implementation of sector strategies and development plans in the member countries

Given that the IDWSSD goals have not been reached, it should be extended by 10 years in order to keep national and international attention. One way to do this is to put task forces at the regional and continental level in charge of monitoring the progress of sector development.

5. Finally, Group 3 unanimously endorsed the conclusions of the General Managers Meeting of UADE, held in Lomé on March 20-22, 1990.

6. We cannot close this report without thanking the organizers of this event, who enabled us to exchange constructive views and compare notes on the development of the water and sanitation sector in our countries. We are also grateful for the opportunity to participate in the formulation of sector strategies for the 1990s, which will allow us, through improved coordination of the support and of the national as well as foreign actors, and through the optimal development of South-South and North-South partnership, to reach the objectives defined by each of our governments, based on the experience gathered during the ending decade.

#### Annex

Suggested editorial changes to "Strategy for the 1990s"



Summary, para 9: remove "*rainwater drainage and solid waste removal,*" as these are understood to be part of "sanitation".

Para 4: "The objective of this paper is to *help countries to develop a strategy...*"

Para 8, last item: "*Provision of basic services, to the extent possible, to the greatest number of people.*"

Add two items:

- *Alleviation of the water supply chore*
- *Protection of the environment, and particularly of water resources*

Para 9: Add two items:

- *Promotion of and support to sector-related local enterprises*
- *Promotion of partnership*

Para 10: "...The steps consist of:

1. *General points on the sector*
2. *Constraints*
3. ...

Para 11: New title: "*General Points on the Sector*"

Para 12: New title: "*Constraints*".

12. Its purpose is to present the major constraints..."

Para 19 (formerly 17): Replace the entire paragraph with following text: "*Resource mobilization is the sole responsibility of each government, according to its strategy.*"

Para 20 (18): Remove the last sentence.

Para 21 (19): "*Users in rural areas must therefore be in a position to express...*"

Para 22 (20): "... they must: signal to the consumer the *economic cost of the service...*"

Para 28, second-to-last sentence (formerly para 25, last sentence): "*...achieve long-term maintenance.*"

Para 32 (29):

- "*Where appropriate, Community Management of ... facilities is required to achieve ... sustainability.*
- *Privatization ... of the water supply and sanitation activities...*"

Para 47 (44): Add the following sentence: "*This system should be made available to governments through ESA support.*"

**Group 4**

**Countries:** Botswana, Lesotho, Malawi, Mauritius, Mozambique, Swaziland, Tanzania, Zambia and Zimbabwe.

**Observers:** the World Bank, EEC, ECA, NORAD, ADB, Kuwait Fund for Arab Economic Development and PROWESS.

**Chairman :** Mr Sandile Ceko from the Kingdom of Swaziland Principal Secretary, Ministry of Natural Resources & Energy.

**Rapporteur:** Mr Bernard Khupe from Botswana, Deputy Director Department of Water Affairs.

**Facilitator:** Mr K. Mhango of ADB.

The Group 4 met to discuss a document on "Strategy for the 1990s" prepared by the African Development Bank for this sector conference.

Mr Mhango gave the outline of the document, shortly going through the various phases for the strategy formulation. He cautioned the group that privatization process should be treated with caution in most African countries and the process should be gradual if change is required.

In considering strategy for the coming decade, peri-urban settlements near towns/cities should also be included since they are problems and have no WSS facilities.

**Discussion**

The discussion that followed still went back to previous group sessions under the workshop, expressing similar feelings.

The general points which arose from the discussion were that :

- The existing systems should be reviewed for different countries and be consolidated before new schemes are brought in.

- Most African countries have their plans and strategies and these should be reviewed for the coming decade. If these strategies exist then ESAs/NGOs can analyse them and then choose whether they can fund or not and come as collaborators/partners.
- Recipient Governments have the right to shop around for funds rather than be subjected to tied funds by some ESAs.
- Expansion or maintenance of existing systems by the communities/users should go hand in hand with mechanisms.
- Grant money is different from loan money and governments are more attracted to grants because they don't have to pay back.
- Establishing strong democratic structures at community level before giving them full responsibilities of running the system.
- Strategies and development plans should be integrated i.e. all necessary sectors needed by the community done at once.
- At his point, Group 4 decided its final recommendations be based on the 10 points suggested in the summary of the document prepared by ADB mentioned at the beginning. The group adopted some of the points as there are and others with corrections and additions. These points are:
  1. *Each country should formulate a sector development strategy defining, inter alia, sector objectives, institutional responsibility and authority, and resource allocation and cost recovery policies (at government request, ESAs may advise on the formulation of this strategy).*
  2. *All participants in the sector's development both ESAs and country organizations, should be governed by this development strategy. ESAs should increase collaborative and complementary activities to increase sector effectiveness.*
  3. *Investments should be based on effective demand and long-term sustainability by the users (by payment or by their efforts) of the facilities built. Tariffs set to recover the cost of service should ensure the financial viability of the service organization, economic efficiency and social equity. Group 4 realised that this strategy is achievable if the conditions are good, but in time*

of disaster governments should intervene and play the role of provider.

4. *Access to capital market and private savings by the sector should be promoted through the creation of appropriate financial intermediaries.* Here the group felt there should be further elaboration/expansion of the approach by ADB, since this could be a difficult area in setting up financial institutions in different countries.

5. *Rehabilitation and maintenance of assets and effective management should be given priority both for operational reasons and to make the sector more attractive to investors.*

6. *Community and especially women's participation must be an integral part of all project development and implementation, varying only in degree between conventional urban and peri-urban or rural projects.*

7. *Institutional decentralization and restructuring should be implemented to bring decision-making closer to the user. Privatization should be part of this restructuring as appropriate.*

8. *Technologies should be appropriate to the socio-cultural conditions in the communities they are designed to serve and should be the least-cost solution to solve the problem at hand.*

9. *To accelerate service to the under-served investment priority should be to provide the maximum number of people with at least basic service before upgrading service standards of those already with adequate service.*

10. *The scope of sector services should be expanded to include water supply, sanitation, rainwater drainage and solid waste removal. Hygiene education should be an integral part of all water and sanitation projects.*

11. *The Collaborative Council, through its members, should promote global collaboration and the dissemination of information helpful to country sector agencies and should assist the regional and sub-regional agencies to increase the knowledge and competence of sector staff and the awareness of decision-makers in countries of its region through inter alia, regional and sub-regional consultations, workshops and seminars.*

12. The group 4 felt that the lead agency i.e. ADB should present the region's formulated strategies for the New Delhi Conference.

#### Group 5

Countries: Nigeria, Ghana, Sierra Leone, The Gambia, Sudan, Ethiopia, Kenya and Uganda.

Chairman: Mr Birru Ittisa - Ethiopia.

Rapporteur: Mr Peter Sackey - Ghana

Facilitator: Mr John Tomaro - WASH Project.

The group sat from 3.00 pm to 6.00 pm on the document "Strategy for the 1990s". Mr Tomaro gave a brief introduction of what is contained in the document and suggested that the document be taken as guidelines for developing countries to prepare strategies for the 1990s. He also advised that participants should not assume the position of engineers and other working on Water Supply and Sanitation projects but that of policy and decision makers. After briefly reviewing the paper and the topics suggested for discussion, the group chose to discuss and formulate recommendations relevant to the suggested topics (See Annex 15).

#### Topics 1 & 2

In relation to the topics 1 and 2, it was proposed that the document "Strategy for the 1990s" was in general, in accord with the conclusions reached during the workshop of May 7-9 with the following exceptions :

- That in the area of institutional development, the important role of NGOs/PVOs should be acknowledged.
- That a paragraph emphasising the need for government to take action to enable communities to implement income generating activities should be added.
- That shift in emphasis of the role of government as a promoter rather than a provider of services needs to be incorporated.

- Touching on paragraph 9 of the summary which asked for inclusion of rainwater drainage and solid waste disposal in the sector, it was explained that the implication is not for implementation but for policy formulation.

#### Topic 3

In response to the statement that "Investments should be based on demand by the users of the facilities built", it was decided that "Ability to pay" as well as "willingness to pay" should be taken into account. This is because most African countries have found it difficult to define and apply "willingness to pay criteria".

#### Topic 4

In examining the need to increase access to capital, it was proposed that communities be encouraged to form credit unions; that ESAs including NGOs consider providing grants, low interest loans, revolving funds or guarantees to communities and that governments encourage the formation of Rural Banks to facilitate lending to communities for sector projects. This recommendation is in harmony with the position taken by the same group during the workshop.

#### Topic 5

In endorsing the position that governments have primacy for setting policies and determining priorities in the sector, the group encouraged the formation of a national body that would take lead in policy formulation and coordinate activities in the sector. It was noted that these bodies would benefit from having access to a centre for information on sector activities within the country and among countries in Africa. Further, it was suggested that collaborative meetings of African governments and ESAs take place on a regular basis and that regional level meetings be organised by ADB with assistance as necessary from the WB/UNDP RWSS offices in Abidjan and Nairobi. In addition, countries should continue to play an increasing role in the activities of the Collaborative Council based in Geneva.

#### Topic 6

The group concluded that the steps involved in securing the development, approval, and implementation of sector plans and programmes were

appropriate. It was noted that the steps are interconnected and that in the course of executing each step, ESAs should be involved although ownership of the plans reside with the government. To reduce the time and cost associated with the development of the documents, it was emphasized that local consultants familiar with national conditions should participate. The participants further noted that ESA financing for these activities would be considered and, at times, welcomed.

As a final comment, the group expressed its gratitude to the chairman and asked the rapporteur to express his appreciation to all the organisers who made this conference possible.

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*Pan American Sanitary Bureau, Regional Office of the*  
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**PROCEEDINGS OF THE**  
**18TH CARIBBEAN WATER ENGINEERS' CONFERENCE**  
**WATER AND SANITATION IN THE CARIBBEAN BEYOND 1990**

**Volume I**

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**1-3 November 1989**

**ENVIRONMENTAL HEALTH PROGRAM**

**WASHINGTON, D.C.**



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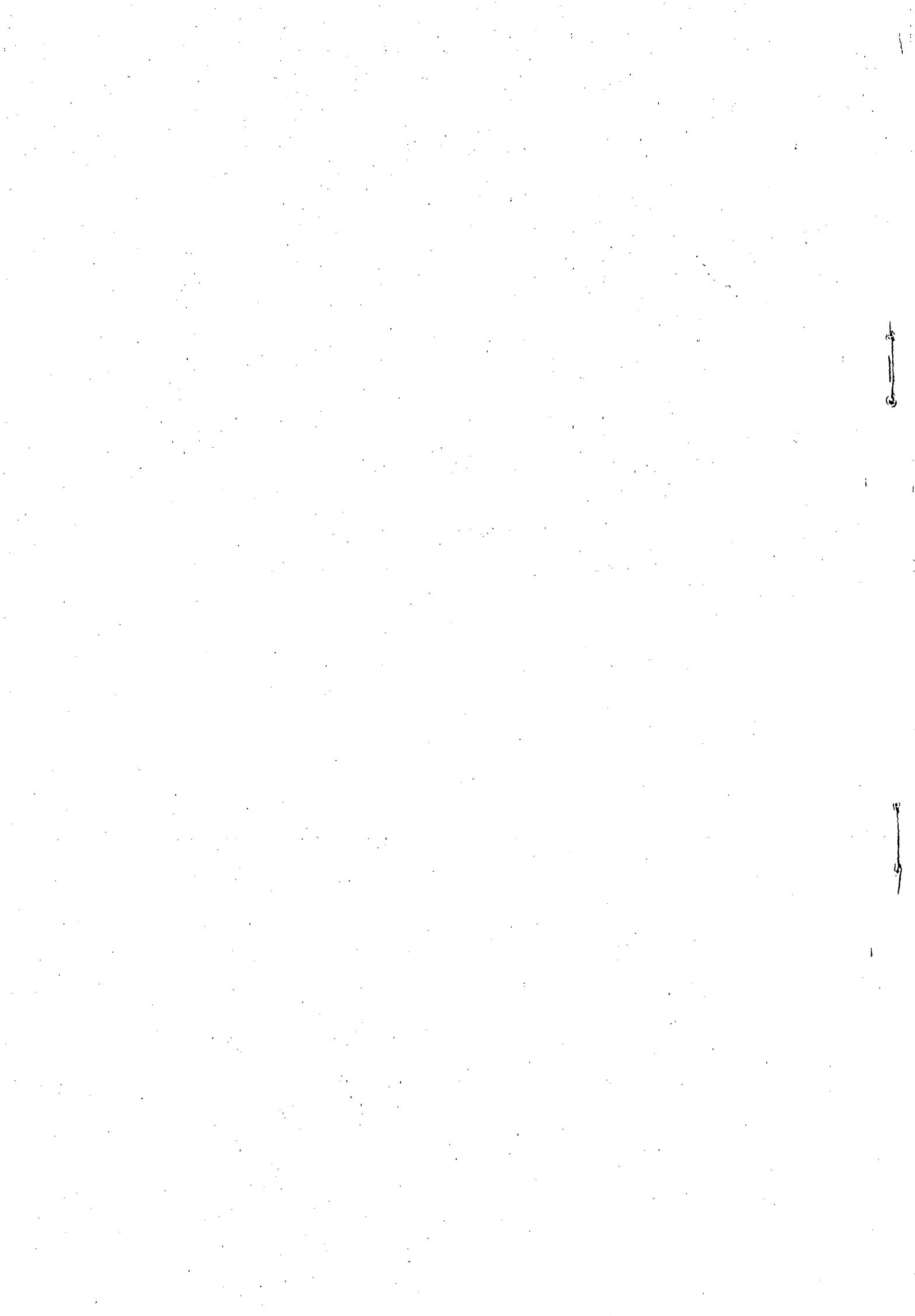
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Water and Sanitation in the Caribbean Beyond 1990

Volume I



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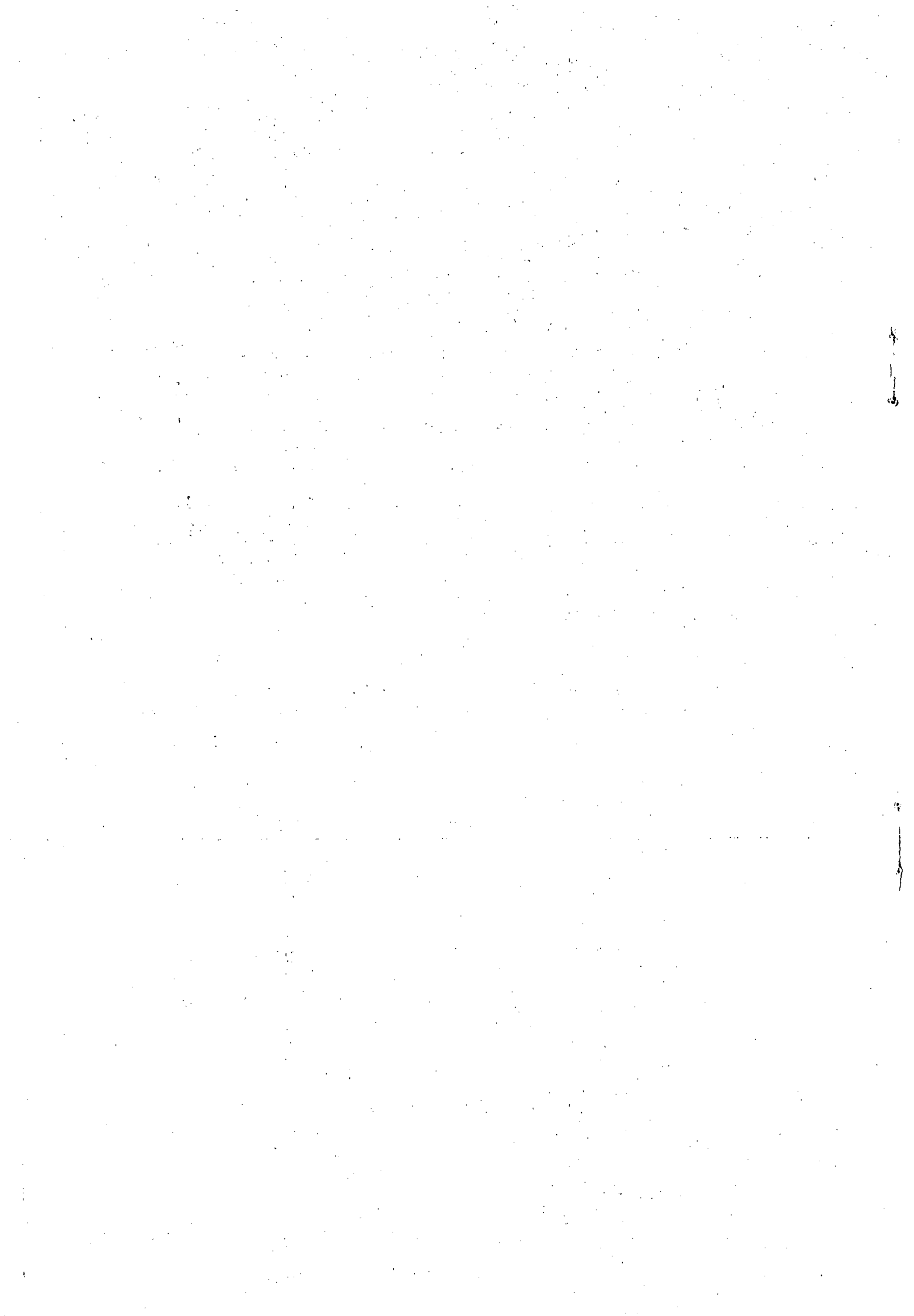
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2.1.6 (7) - where?  
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## LIST OF ABBREVIATIONS

CBWMP	Caribbean Basin Water Management Project
CDB	Caribbean Development Bank
CEHI	Caribbean Environmental Health Institute
CIMH	Caribbean Institute for Meteorology and Hydrology
HRD	Human Resources Development
PAHO/WHO	Pan American Health Organization/World Health Organization
UN	United Nations
UNDP	United Nations Development Program
UNICEF	United Nations Children's Fund
UNDTCD	United Nations Department of Technical Cooperation Development



## ACKNOWLEDGMENT

The Conference is part of a global effort, the primary objective of which is for the developing countries to design effective water supply and sanitation strategies for the 1990's. The Conference gratefully acknowledges all those whose support has led to its successful realization, in particular the Collaborative Council of External Support Agencies of which WHO is the Secretariat for its guidance and financial support. The Conference also acknowledges the contribution of the Caribbean Development Bank for sponsoring the participants from the Eastern Caribbean countries and the Pan American Health Organization/World Health Organization (PAHO/WHO) for organizing and managing the Conference. Special acknowledgment is given to the Government of St. Christopher/Nevis for hosting the Conference and for the courtesies extended to all the participants.

## EXECUTIVE SUMMARY

i) The 18th Caribbean Water Engineers' Conference jointly sponsored by the Water Department of St. Christopher-Nevis, PAHO/WHO, Caribbean Development Bank, Collaborating Council of External Support Agencies, was convened at the Fort Thomas Hotel in Basseterre, St. Kitts, West Indies, on 1-3 November 1989.

ii) Representatives from sixteen countries of the Caribbean Region participated in the Conference. The International Organizations represented at the Conference included: the World Health Organization (WHO), the Pan American Health Organization (PAHO), the United Nations Development Program (UNDP), and the World Bank. UNICEF was unable to attend the Conference, but in a message to the Conference, UNICEF reaffirmed that in collaboration with other agencies it will continue its support to the water supply and sanitation sector in the Caribbean Region. Regional institutions: Caribbean Community Secretariat (CARICOM), the Caribbean Development Bank (CDB), the Caribbean Institute for Meteorology and Hydrology, the Caribbean Environmental Health Institute (CEHI), involved in the development of the water supply and sanitation sector played an active role at the Conference. Private companies and manufacturers were represented by staff from their head office abroad and/or from their offices in the Region. The complete list of participants is attached as Annex 1.

iii) Conference's documentation included: Consultant Report on the Water Supply and Sanitation Sector in the Caribbean; specialized reports by the Pan American Health Organization and the Caribbean Development Bank; technical papers on relevant Caribbean issues; external support agencies statements; and country statements on National Status of Water and Sanitation and priority issues and programs for 1990's. The latter which provide up-to-date information on the water supply and sanitation sector in the countries of the Region are part of Volume II of the Conference proceedings.

iv) Conference's methodology consisted of plenary sessions and working group discussions on the following four topics: (1) Program Support: institutional and human resources development, information, community participation (Group I); (2) Financing, Cost Recovery (Group II); (3) Water Resources and Quality Management; and (4) Waste Water Management (Group IV), in accordance with Conference's Agenda which is appended as Annex 2.

v) The Conference defined the objectives to be achieved for the countries in the Caribbean during the 1990's as follow:

Program Support: institutional and human resources development, information, and community participation: to provide the water supply and sanitation agencies with trained manpower in terms of categories, number, and quality required to deliver services as an important contribution to institutional development; establish a centralized, computerized data bank as a tool of management to collate, store, retrieve and disseminate relevant information; and further promote public education to ensure community involvement and participation prior to the formulation of project proposals.

**Financing-Cost Recovery:** to ensure the following: the sustainability of agency; funding of capital cost investment; expansion of facilities; achievement of financial autonomy by the agency; provision of improved service to consumers; and establish systems for identifying the cost of the service provided in order to ascertain that revenues generated are adequate to support sector operation and remain in the sector.

**Water Resources and Quality Management:** to ensure State control of exploitation of water resources; reduce unaccounted-for water to a maximum of 25 percent over the next Decade; develop a centralized inventory of water resources to facilitate accurate planning, design and allocation of water resources; ensure the supply of safe water to the consumer; and optimize the use of developed water resources.

**Waste Water Management:** to improve public health by reduction of water pollution and excreta related diseases; protect surface and ground waters, as well as coastal and marine ecosystems; protect fisheries; preserve the tourist industry; and improve public awareness and community involvement.

vi) Conference's concluding statements and major recommendations are as follows:

**Institutional and Human Resources Development, Information and Community Participation.** The Conference asserted that these are important considerations which need to be reemphasized in all water supply and sanitation programs and projects contemplated for execution during the 1990's, and recommended, inter-alia that the following be undertaken: formulation of HRD policy aimed at achieving objective of responsible agency; promote manpower planning to determine categories, number, quality of employees required to deliver services; clearly define mandates of agency which, in turn, should concentrate on core functions; elaboration of agency's personnel management system as an important input to institutional development; carry out investigations to determine existing manpower resources and turnover rates; establish centralized, computerized data bank as a tool of management; and further promote public education to ensure community involvement prior to the formulation of project proposals.

**Financing, Cost Recovery:** The Conference affirmed that financing and cost recovery are important for the water supply and sanitation sector to ensure the sustainability of the agency, in line with the above objective. To this end, the following recommendations are made: establish statutory status for water utility/agency; aiming at financial, autonomy/self-sufficiency; design of uniform methodology for developing tariff structures; and examination of comparative costs of water in the Caribbean.

**Water Resources and Quality Management:** The Conference asserted that it is imperative that the State exercise its authority for the protection and ownership of water resources.. This is to be achieved through the following: formulation of policy for the protection of ground water, water conservation; enactment of legislation to define surface water rights; licensing for extraction of ground water and the disposal of wastewater, including the identification of agency or determination of mechanism for enforcing legislation; and preparation and implementation of leak detection and public health education programs.

vii) Waste water management, including excreta disposal have been given low priority because of the economic conditions of the Caribbean countries, lack of understanding of the adverse environmental impacts created, and lack of knowledge of available technologies which have resulted in the degradation of the human and natural environment, hence, the pressing need to tackle this problem during the 1990's; more specifically, the Conference recommended the following: development of policy and master plan; examination of potential of waste water as a resource, e.g., reuse; design some effective strategy to deal with waste water disposal created by developments such as hotels; development of uniform quality standards for the marine environment.

viii) Foremost among the recommendations made by the Conference is the need to include disaster preparedness in planning water supply and sanitation projects which are contemplated for execution during the 1990's.

ix) Activities for follow-up and periodic evaluation include: (1) early preparation of Conference proceedings for submission, within a month, to CARICOM, WHO/Headquarters in Geneva, and countries; (2) early designation of a Task Force or Steering Committee to translate Conference recommendations into a meaningful action plan to be presented to the Caribbean Consultative Forum.

## CHAPTER I

### 1. INTRODUCTION

#### 1.1 Particulars of the Conference

##### 1.1.1 Venue, participants and sponsors

The 18th Caribbean Water Engineers' Conference jointly sponsored by the Water Department of St. Kitts/Nevis, PAHO/WHO, Caribbean Development Bank, Collaborating Council of External Support Agencies was convened in Basseterre, St. Kitts, and attended by: (a) representatives from sixteen countries of the Region; (b) staff of WHO/PAHO, UNDP and CDB; (c) personnel of regional institutions such as CARICOM, CIMH, CEHI; (d) representatives from external support agencies: Canadian High Commission, Commission of European Communities, French Mission of Cooperation and British Development Division in the Caribbean; and (e) private companies and manufacturers representatives.

##### 1.1.2 Background

Water supply and sanitation has a long and progressive history of development in the Caribbean Region. As early as the mid-1960's, yearly meetings were convened and attended by water engineers to discuss specific topics and exchange information and experiences on the water supply and sanitation sector. This collaborative effort was further strengthened ever since the United Nations launched the International Drinking Water Supply and Sanitation Decade (IDWSSD) in November 1980. In response to IDWSSD, the developing countries of the world committed themselves together with donor agencies and external support agencies (ESA) to promoting water supply and sanitation developments as a top priority.

##### 1.1.3 Conference's objectives

The objectives of the Conference were: (a) "to examine water/sanitation sector achievement during IDWSSD, including analysis of sector support activities in the Caribbean; (b) to recommend an action program for improving sector effectiveness and for maintaining and accelerating momentum of activities of national and regional interest during the 1990's involving external support agencies (ESA) as well as countries." Additionally, Conference's recommendations are to provide support to: (i) the Collaborative Council Meeting which will convene in Sophia, Antipolis, France, on 28 November - 1 December 1989, in which a representative of the Caribbean Region, jointly sponsored by Canadian International Development Agency (CIDA) and the Caribbean Development Bank (CDB) will participate, and (ii) to the global meeting scheduled to take place in New Delhi, India, in September 1990, at which a strategy for the 1990's will be formulated.

#### 1.1.4 The Opening Session

Mr. A. Rawlins, Manager, Water Engineer of St. Kitts and Nevis' Government chaired the opening ceremony. Seated at the head table with him were: Mr. Ryden Benjamin, Assistant to the Honourable Minister of Communications, Works and Public Utilities; Mr. A. Rotival, UNDP/WHO Coordinator of IDWSSD and Chairman of the Collaborative Council; Mr. O. K Yhap, Project Manager, Caribbean Basin Water Management Project (CBWMP), Caribbean Development Bank; and Mr. R. Reid, PAHO Regional Advisor, Environmental Health Program (HPE) and PAHO'S Coordinator of the Conference.

##### 1.1.4.1 Chairman speech

As Chairman of the Conference, Mr. Rawlins of the host country welcomed the water engineers from the Region and the participants from overseas and wished them all a pleasant stay in St. Kitts. He emphasized the importance of this Conference, the primary purpose of which is to formulate an action plan for the Caribbean Region beyond 1990. He then expressed the wish that the Conference would discuss the effects of natural disasters (hurricanes and earthquakes) on water supply installations. He extended words of welcome to the International Organizations represented at the Conference for their support in the past which, he hoped, will continue in the future (copy of his address is included as Annex III).

##### 1.1.4.2 Statement by Mr. A. Rotival, UNDP/WHO Coordinator, IDWSSD, Chairman, ESA Collaborative Council

Mr. Rotival referred to the two faces of the Decade as it approaches its termination in 1990. On the negative side he indicated that the prime objective of service coverage of population with potable water supplies and adequate sanitation has not been met, and identified the factors that have contributed to the shortfall. Asserting that only approximately 50 percent of the population in the developing countries will have potable water supply by 1990, he indicated that the Caribbean countries have done much better than the global average. With regard to rural sanitation, Mr. Rotival spoke of the "disgraceful figure of 14 to 15 percent during the ten years of the Decade." Investments in sanitation in contrast to investments in water supply "must be characterized The Cinderella of the Water Decade." On the positive side, Mr. Rovalti mentioned: the major financing to develop appropriate technology; a development of cost effective and community manageable technology; an understanding of the primacy of the role of the community and the pivotal "role of women in rural water supply, and rural and peri-urban sanitation. The unique facet of the Decade, he said, "has been the exchange of information between developing countries and the ESA community," including "the role of Government in coordinating sector activities" which has resulted in the ESA's harmonizing their policies and approach. He concluded his address by suggesting that the message of this Conference will be a valuable input to two important forthcoming meetings: (a) the Meeting of the ESA Collaborative

Council scheduled to take place at Sophia Antipolis (France), on 28 November - 1 December 1989; and (b) the UNDP'S sponsored Global Consultation in India in 1990 for the formulation of strategy for the 1990's. Mr. Rotival's address is included in report as Annex IV.

1.1.4.3 Statement by Mr. O. K. Yhap, Project Manager, Caribbean Basin Water Management Project, Caribbean Development Bank

Mr. Yhap first thanked the Chairman for his kind and complimentary introduction. On behalf of CDB, he expressed appreciation for being involved in the Conference. CDB, he said, is cosponsoring the representatives from 13 regional countries to the Conference, through the Caribbean Basin Water Management Training Project which has enjoyed financial support from the Canadian International Development Agency (CIDA) starting from about the mid-1970's. In conclusion, he underlined the importance of "commitment," "commitment by all of us to our jobs, our water institutions, and on the whole to the whole to the water and sanitation sector." Mr. Yhap's statement is included in this report as Annex V.

1.1.4.4 Address of Mr. Royden Benjamin, Assistant to the Honourable Minister of Communications, Works and Public Works

The thrust of Mr. Benjamin's address is the emphasis he placed on the need of potable water supply and sanitation to improve overall living conditions, particularly public health, since, in some countries disease incidence up to 80 percent could be attributed to unsafe water and poor sanitation. Making reference to Hurricane Hugo which struck St. Kitts, Mr. Benjamin praised the work performed by the Water Department to restore damaged water supply installations and provide services in the shortest possible time. Mr. Benjamin then gave a brief account of the Government effort in its pursuit of attaining the objectives of the Decade of service coverage of population with potable water supplies and adequate sanitation. More importantly, he reiterated Government commitment to continue collaboration with other regional countries and institutions with a view to ensuring and strengthening sector effectiveness during the 1990's.

1.1.4.5 Expression of thanks

The opening ceremony ended after Mr. P. Braithwaite, Water Manager, Antigua Public Utilities, thanked on behalf of the Caribbean participants in the Conference, all the ESA's for their sustained support and for their presence at the meeting.

## CHAPTER II

### 2. CONFERENCE'S METHODOLOGY AND TOPICS DISCUSSED

The Conference consisted of plenary and working groups sessions. The topics discussed are listed in Annex II (Conference's agenda). What follows is a summarized account of the critical issues arising out of discussions on the presentation of technical papers, as well as statements made at plenary sessions, and in particular those identified and discussed by the working groups.

#### 2.1 Plenary sessions - Wednesday, 1 November and Friday, 3 November

2.1.1 Host country statement and overview of the situation of water and sanitation sector, and progress of Decade, including approaches to achieve Decade's objectives

In the introduction of his paper, Mr. Rawlins indicates that the economic growth of the country is dependent upon the accelerated development of agriculture and tourism, which, in turn, must rely on a well-structured program of water resources development. The water supply and sanitation project is principally constrained by the lack of funds, affecting in particular the programs of maintenance and operation of existing installations, and of expansion of the water supply systems. Mr. Rawlins then provided the Conference with information on the achievements at the Water Department during IDWSSD, and on programs that were contemplated for the future. Making reference to hurricane Hugo, he mentioned the problem of pollution of water resources. Mr. Reid, made a brief review of the circumstances which have led to the establishment of IDWSSD, emphasizing in particular, the beneficial effects of water supply and sanitation on the life and well-being of the poor in the developing world. He underlined the basic principles of IDWSSD and, more importantly, emphasized the need for the Conference to design an effective strategy and new approaches to accelerate program development in the 1990's.

Two critical issues were identified, following the host country statement and the presentation made by Mr. R. Reid, PAHO Regional Adviser, Coordinator of the Conference. These were: (i) organic pollution of water sources, and (ii) degradation of the situation with regards to maintenance and operation of installed water supply and sanitation systems. To overcome these deficiencies, it was recommended that the problem of organic pollution should be an important consideration in the development of projects during the 1990's, and the development of operation and maintenance programs that are readily applicable to local conditions.



### 2.1.2 Situation and economics perspective of area and sector

The paper presented Mr. C. Pemberton, Project Officer, CDB, is included in Volume II of the Conference Proceedings. The paper's introductory statement suggests that, while it is recognized that water is essential not only to the promotion of health and living conditions of communities, but also for sustained economic growth, its availability and use for supply purposes in the Caribbean Region is severely constrained by: current economic climate; pollution due to improper disposal of waste water (from households, industries, hotels, agricultural runoff); improper watershed management. Each one of these topics is discussed in details in the paper. The outcome of this discussion is reflected in some of the author's concluding statements, which read: "It is imperative from a public health perspective, that the achievements of the Water Supply and Sanitation Decade be sustained, and attention be now focussed on setting new goals for the 1990's and beyond. With respect to the economic activities in the Region, water must not be a deterrent to development, nor must the waste water derived from present and future development be a public health hazard or be a pollutant to the environment."

### 2.1.3 Statements by selected countries (Suriname and Haiti)

Arising out of the discussions that followed the statements from the participants from Suriname and Haiti, information on major areas of concern, and suggestions to overcome these, is summarized as follows:

<u>Areas of Concern</u>	<u>Suggestions</u>
- multiplicity of Government Ministries and agencies, and a countless number of NGO's involved in sector development, each one operating independently;	- establishment of a high level Government Committee, and/or an appropriate mechanism to ensure coordination of sector activities;
- lack of basic information on many factors and parameters which influence sector development;	- develop a data base and/or an information system;
- sporadic effort in carrying out community participation activities, and lack of follow-up.	- elaboration of a community participation program within sector development program, and allocation of resources for its implementation; and exchange of ideas and experiences on both information system and community participation.

## 2.1.4 Water supply in the Caribbean: needs and improvement

### 2.1.4.1 Overview of current situation

There are features common to the water supply services in six of the small islands covered in the paper presented by Mr. Emile Warner, PAHO/WHO Temporary Adviser, including in particular, the high percentage of population served through house connections and public standpipes. Yet, water demands and services, as well as management of water resources differ in each of the islands. Worthy of mention are the following: (i) master plans have been prepared in both Antigua and Montserrat; (ii) the use of sea water as a source of supply in Antigua; (iii) privatization of the water utility in Dominica where, in addition, arrangements are being made to sell water to neighboring islands, at the rate of 100,000 gallons/day. (Mr. Warner's paper is in Volume II of the Conference Proceedings).

### 2.1.4.2 Improvement of service quality in the 1990's

A broad range of activities are contemplated for implementation with a view to improving service quality in the 1990's not only in the islands covered in the paper, but also in the Caribbean Region as a whole. The major activities include: preparation of Master Plans; ground water exploration; monitoring pollution of ground and surface waters; leak detection and water wastage investigations; studies and investigations to determine adequate tariffs; training of professionals in specific areas of expertise (management of water resources, leak detection, etc.). These were identified at plenary sessions, and were discussed more extensively by working Group III. The outcomes of the discussions of the group are detailed later in this report.

## 2.1.5 Waste water collection and disposal: status and strategies

### 2.1.5.1 Overview of current situation

The most common methods of disposal of waste water are through septic tanks and pit privies. Available 1985 data show that 80 percent of the population of the Caribbean Region are served by these two methods of disposal. Septic tank effluents are not treated before their disposal into soakage pits, rivers, streams or the ocean, thus, contributing to the pollution of ground and surface water, and to gross marine and coastal areas pollution. This, in turn, represents a threat to tourism on which most of the islands depend for their economic growth. In the windward islands, the disposal of waste water is through septic tank and collection systems, with the exception of Dominica, Saint Lucia, and Grenada where sewerage systems were constructed during the period 1940-1982. The collection systems are old, pipelines are broken, so are the marine outfalls. The experience with package sewage treatment plants at hotels is most disheartening because of poor operation and maintenance (unavailability of spare parts and dearth of trained manpower). Few countries of the Region have sewerage systems serving only nine percent of the population. Eleven percent of the population of the

Region have no facilities for the disposal of waste water. There are few instances in which Water Authorities are entrusted with the responsibility to manage, operate and maintain sewerage system, but the sewerage sector is invariably subsidized by the water sector. (Paper presented by Mr. A. Archer, Temporary Advisor PAHO/WHO, is included in Volume II of the Conference Proceedings).

#### 2.1.5.2 Proposed strategy

Fundamentally, the development of a strategy, including its implementation, is dependent upon: (i) political awareness, and Governments' commitment; (ii) availability of external financial and technical assistance, the composite components of which include, inter-alia: formulation of regional/subregional and national policies; enactment of legislation; preparation of comprehensive plans for the densely populated urban and coastal areas to attract external financing; establishment and/or strengthening of Water and Sewerage Authorities; manpower training in specialized areas of expertise; investigation and research for the identification of appropriate technology (least cost solutions) and the establishment of effluents standards. These were identified at plenary sessions, and were more extensively discussed by Working Group IV. The outcomes of the discussions of the Group are detailed later in this report.

#### 2.1.6 Water resource management in small Caribbean States (Plenary session on Thursday, 2 November 1989)

The paper, prepared by Dr. Bernard Clement, United Nations Chief Technical Adviser, Water Resources Management in Small Caribbean States, and presented by Mr. K. Suthakar, Water Engineer, UNDTCD, is well documented and of interest to all parties involved in water resources management in the Caribbean region, and in other developing regions of the world. The paper which is included in Volume II of the Conference Proceedings, provides a detailed account of activities of the technical assistance project, its broadened scope, and impact which is evidenced "in the fact that the project has assisted in the preparation of projects involving over US\$35 million of follow-up capital investment much of which has been generated from donor agencies." Employing a team of UN Associate Experts and Volunteers, dispersed throughout the Region, and managed and coordinated by UNDTCD staff out of Barbados, the project operates in the majority of the smaller English speaking islands." The paper provides also a strategy for the improvement of the regional water sector over the next Decade.

#### 2.1.7 Statement by Dr. N. Singh, Senior Scientist, Caribbean Environmental Health Institute (CEHI)

Starting with a brief review of events that have led to the establishment of CEHI, Dr. Singh defined the functions, capabilities, as well as future development and the role of CEHI in implementation of the Environmental Health Improvement Project. His summarized statement and the

Port of Spain Accord on the Management and Conservation of the Caribbean Environment, Port of Spain, Trinidad and Tobago, 31 May - 2 June 1989, are included in Volume II of the Conference Proceedings.

2.1.8 Address of Mr. G. Davila, Coordinator, Environmental Health Program, PAHO/WHO

The summarized version of Mr. Davila's address is as follows:

Drinking Water Supply and Sanitation - Principal Areas for Future Attention (Beyond 1990)

Organization of the Sector

- National water supply and sanitation systems should be established to integrate all the elements involved in facilitating the delivery of services by this sector.
- Particular attention should be given to the financial system.
- The policies of decentralization and municipalization have made it urgent to establish national systems in which planning will be especially important.
- Urban coverage will have precedence and will demand the greatest investments. Particular attention should be given to the low-income population on the outskirts of the cities.
- Permanent programs should be established for the development of human resources at all levels. Such programs should have continuity and, thus, regular and permanent funding.

Optimization and Recovery of Installed Capacity

Here it is well to emphasize the concept of "efficient water use," which involves such facets as:

- Reduction of current high levels of consumption, streamlining of services delivery (including the review of design standards), and "humanization" of engineering through a social approach.
- Use of water-saving plumbing fixtures (toilets, etc.). Regulations should be drafted requiring that they be used.
- Establishment and application of appropriate pricing policies. It will be necessary to eliminate "political control" of rates.

### Development and Use of Appropriate Low-Cost Technologies

It will be necessary to establish an attitude in planning and in engineering design whereby low-cost technologies are adopted as normal practice. In this regard, it will be important to modify existing traditional programs in sanitary engineering education so that they will foster a mentality that is more in line with present realities.

- Attention should be given to innovation and adaptation based on applied research in order to contribute to knowledge and to encourage development of the new technologies that concern us.
- Community participation should be optimized so that there will be a commitment to technological changes that favor less costly services, an area that is so critical for the sector, and also promote and reinforce the concept of paying for the use of the water. We ask: Should not water services be considered an important element in the list of household costs for calculating minimum wages in order to meet the basic needs of families?
- Increased productivity of the services through programs for controlling physical and commercial losses should be the basis for operation and maintenance of the services as well as the key to administrative and institutional development.

### Water Quality - Pollution

- It is important to recognize that water resources are finite and are already being overused.
- The quality of water resources for human use should be given high priority. Biological contamination and the growing risk of chemical contamination are cause for concern; actions should address both surface and groundwater. It is essential to launch vigorous programs to protect water sources giving attention to all the factors that cause pollution, including solid waste, industrial waste, contamination of agricultural origin, etc.
  - . It is necessary to plan effectively for the utilization of water resources wherever sanitary uses are important.
  - . The quality of drinking water should be zealously controlled and monitored with full attention to the health risks posed by pollution.
  - . Since we live in a world in which there is close contact with human excreta, health care demands that this situation be given urgent attention and that the topic be assigned high priority.

Water and sanitation companies should rank health concepts according to their importance and should endeavor to improve their services on this basis.

#### Concept of Universal Coverage

Although it may seem that we are raising an issue which is a "lost cause," since there have been repeated references to the impossibility of addressing the high cost of such an ambitious goal, I would say that, even given the restrictions, today more than never, we should attempt to regain our optimism with regard to this task. It is desirable, and I believe productive, for us to look toward a future in which every person in the Americas has the benefit of minimum water supply and excreta disposal services, in the interest of his or her health and well-being, thus, permitting access to a better quality of life than we have in 1989.

The availability of financial resources by itself is not the answer to our problems. What will count will be the adoption and implementation of the concepts mentioned above, together with those resulting from the present meeting.

The 1990s will bring more urgent demands than we had in the 1980s, and we should be very seriously concerned lest the year 2000 finds us at the same sanitary level as we have in 1990 -- or worse. I believe that sanitary engineers and other professionals in Latin America and the Caribbean have the experience and the conditions to exercise an influence, through their actions, at both the community and the government level to mobilize future action that is consistent with the concerns and development efforts of our countries.

#### 2.1.9 Presentation of Mr. Lowen on ground water exploration

Ground water exploration in the Caribbean. In his presentation, Mr. D. Lowen shared his experience in ground water exploration in the Caribbean with the participants in the Conference. The objectives he pursues are: to locate sources of ground water resources. He went on describing some of the techniques he applies to predict subsurface conditions, including the use of electrical current in the ground. Mr. Lowen's paper was not available up to the time of writing this report, but will appear in Volume II of the Conference's proceedings.

#### 2.1.10 Participation of external support agencies

Representatives of External Agencies offering technical assistance to the Caribbean Region attended the Conference. These agencies included: Canadian High Commission; Commission of European Communities; French Mission Cooperation and the British Development Division in the Caribbean (BDDC). BDDC's statement made by Mr. M. Sergeant, Senior Engineering Adviser, BDDC, is included in Volume II of the Proceedings.

### 2.1.11 Participation of private companies and manufacturers

As many as 10 companies attended the Conference (see Annex 1: List of Participants). Available statements made by Mr. P. Grayson, General Manager, Kent Meters, Puerto Rico, and by the representative of General Engineering Corporation are included in Volume II of the Conference Proceedings.

### 2.2 Working Groups discussions

Guidelines for the working groups discussions centered around the following: identification of major issues/constraints, formulation of plan of action, identification of agency(ies) responsible for the implementation of plan of action, and for follow-up, and time (year or period time required to initiate and/or complete activities contemplated. Working Groups reports are shown in Tables 1, 2, 3 and 4.

TABLE 1

## GROUP 1

PROGRAM SUPPORT: INSTITUTIONAL AND HUMAN RESOURCES DEVELOPMENT, INFORMATION, COMMUNITY PARTICIPATION

<u>Issues and Constraints</u>	<u>Action Plan</u>	<u>Responsible Organizations</u>	<u>Time</u>	<u>Follow-up</u>
1. <u>Human Resources Development</u> - absence of policy; - lack of manpower plan.	- Formulate manpower policy; - Promote manpower planning, beginning with inventory of existing personnel, including education and training institutions, current personnel administration procedures and turnover rates; and forecasting future needs in relation with programs and projects.	Water Utilities	1990-1992	Water Utilities in conjunction with regional agencies and international organizations.
2. <u>Institutional Development</u> - poor image of the sector; - inadequate personnel management system; - scarcity of trained personnel and high turnover rates.	- Develop and implement public relation program; - Establish an efficient personnel management system so that the utilities can attract potential employees and maintain a well motivated workforce in a working environment of growth and development.	Water Utility Water Utility	1990 1990-1992	Water Utilities in conjunction with regional agencies and international organization.
3. <u>Information</u> - scarcity of pertinent data; - scattered information and - lack of an appropriate mechanism to disseminate information.	- Establish a centralized computerized data bank that will provide management with a clear status of the water supply and sanitation sector situation (including human resources, technologies), and will facilitate the formulation of a strategy for the 1990s.	Water Utility	1990-1992	Water Utilities in conjunction with regional agencies and international organization.
4. <u>Community Participation</u> - late involvement of the community; - limitations of programs.	- Initiate discussions with community before formulation of project proposals, reemphasizing the public health benefits and the aspects of operation and maintenance.	Water Utilities	1990-1991	Water Utilities in conjunction with regional agencies and international organization.



TABLE 2  
GROUP II  
 FINANCING, COST RECOVERY

<u>Major Issues and Constraints</u>	<u>Plan of Action</u>	<u>Responsible Organization</u>	<u>Time</u>
- Lack of finance for initial capital investment, and high cost of providing services;	- Mobilize local money, and seek new ways of generating financing from external sources, emphasizing Decade concepts and health benefits;	Ministries responsible and Water Authority.	
- Limitations of Water Sanitation Authority attributable to: ill-defined mandate to Authority by political directorate, and politicians interference in tariff policy; and to:	- Establish statutory Water and Sanitation Authority, aiming at financial autonomy of the Authority;	Ministry responsible and Water Authority.	January 1993
. inadequate tariffs structures;	- Undertake socio/economic studies and investigations to determine consumers' ability/willingness to pay, and assess tariff/cost recovery practices in each country;	CARICOM Water Authority	December 1990
. high levels of unaccounted for water;	- Develop and implement programs and activities to reduce unaccounted for water to acceptable limit (25%), (including leak detection, metering, billing and improved revenue collection);	Water Authority	December 1991
. lack of control of wastage;	- Formulate policy to control wastage and promote the use of water saving devices, and enact legislation for water conservation and protection of watersheds.	CARICOM/FAO and Water Authority	December 1992
. consumers' lack of interest.	- Education, motivation of consumers and public at large.	Water Authority	December 1990

TABLE 3

## GROUP III

## WATER RESOURCES MANAGEMENT

<u>Priority Areas and Constraints</u>	<u>Outline of Plan of Action</u>	<u>Responsible Organizations</u>	<u>Time</u>	<u>Follow-up</u>
1. <u>Legislation for the Protection and Control of Water Resources</u> - lack of clear ownership of water resources; - lack of control over exploitation of resources; - lack of effective legislation.	- Educate and convince the decision-makers of the importance and urgency of such legislation;	Water Utility	1990	Water Utility and annual evaluation of the Caribbean Water Engineers Conference.
	- Secure expertise for preparation of legislation;	Water Utility	1990	
	- Public education;	Water Utility	1991	
	- Passage of legislation.	Water Utility	1992	
2. <u>Unaccounted for Water</u> - leakage and wastage; - illegal connections; - inaccurate source and consumer meters; - erroneous meter readings and billing; - use by public institutions and standpipes.	- Public education;	Water Utility	1990-1992 1990	Water Utility
	- Progressive metering, beginning with industrial/commercial and large consumers;			
	- Review meter reading systems;		1990	
	- Repair all visible leaks and upgrade mapping;		1991-1993	
	- Construct meter testing and repair facilities;		1990-1992	
3. <u>Inventory of Water Resources</u> - lack of Central Data Bank; - lack of equipment and trained personnel; - lack of historical data.	- Establishment of a coordinating agency;	CIMH	1990	CIMH and annual evaluation at the Caribbean Water Engineers' Conference.
	- Determine extent of data collection required;		1990	
	- Secure necessary technical assistance and funding;		1991	
	- Obtain the commitment of governments to the CIMH;		1990	
	- Implement data collection.		1995	
4. <u>Monitoring and Control of Water Quality</u> - lack of sampling program; - lack of laboratory facilities; - lack of commitment to observing minimal drinking water standards; - lack of national standards.	- Secure technical assistance and funding;	Water Utility in conjunction with National Health Departments.	1990	PAHO/WHO Water Utility Water Utility
	- Assign and arrange for the training of personnel;		1990	
	- Ensure budgetary provisions are made for the operation of the laboratory.		1991	

TABLE 3 (Cont.)

<u>Priority Areas and Constraints</u>	<u>Outline of Plan of Action</u>	<u>Responsible Organizations</u>	<u>Time</u>	<u>Follow-up</u>
5. <u>Demand Control/Conjunctive Use</u>				
- lack of knowledge of available water saving devices;	- Dissemination of information on water saving devices;		1990	Water Utility
- lack of pressure zoning;	- Establish regulations governing the use of water especially during the dry season;	Water Utility	1990-1991	Water Utility
- inadequate public awareness about water conservation;	- Initiate studies and implement plans for conjunctive use.		1990-1993	Water Utility and evaluation at annual Caribbean Water Engineers Conference.
- lack of program to promote conjunctive use.				

TABLE 4  
GROUP IV  
WASTE WATER MANAGEMENT

<u>Priority Areas and Constraints</u>	<u>Plan of Action</u>	<u>Responsible Organization</u>	<u>Time</u>
1. <u>Financing</u> - high cost of conventional systems; - government financial limitations; - incapability of people to pay.	- Selection of affordable, sustainable and environmentally acceptable systems;	Water Utility	1990-1991
2. <u>Public Awareness</u> - people and politicians not aware; - lack of political commitment; - prevention rather than cure: need perspective.	- Promote environmental education in schools and to the public at large, and convene public participation in the decision making process with regards to technology and operational services in waste water and excreta disposal.	Water Utility	1990-1991
3. <u>Institutional arrangement</u> - responsible institutions (construction, operation and maintenance, regulatory); - insufficient trained staff; - unavailable ancilliary equipment: laboratory, vehicles, etc.	- Establishment and strengthening of an organization for developing mechanism of intersectoral coordination for preparatory work for the construction, operation and maintenance of waste water treatment and disposal systems; enforce legislation for property connections and collection of tariff revenues; strengthening of manpower resources, including the training of personnel.	Water Utility in collaboration with technical assistance agencies.	1990-1995
4. <u>Environmental conditions</u> - location of urban centers along the coast; - geology (limestone, volcanic); - flat terrain.	- Establishment of water pollution monitoring and assessment programs, and setting appropriate water quality guidelines to at least meet WHO/international accepted standards for the region.	Water Utility in conjunction with regional institutions.	1990-1992
5. <u>Technology</u> - few technologies known in area (sewerage, package plants, pit latrine, septic tanks); - lack of information on cost.	- Undertake an inventory of excreta disposal and recycling technologies which are relevant to local conditions, and promote demonstration projects which could receive financial support from donor agencies.	Water Utility	1990-1992

TABLE 4 (Cont.)

Priority Areas and Constraints	Plan of Action	Responsible Organization	Time
<u>Policy and legislation</u> - legislation for the protection of human and natural environment needs coordination; - clear policies required.	Commitment by the countries should be given to waste water management and excreta disposal by allocating economic resources, and reviewing, developing and enforcing legislation.	Government and Water Utility.	1990-1992

### CHAPTER III

## 3. CONCLUSION, RECOMMENDATIONS AND FOLLOW-UP

### 3.1 Conclusions and Recommendations

Conference's conclusions and major recommendations are as follows:

3.1.1 Institutional and Human Resources Development: Information and Community Participation. The Conference asserted that these are important considerations which need to be reemphasized in all water supply and sanitation programs and projects contemplated for execution during the 1990's, and recommended, inter-alia that the following be undertaken: formulation of HRD policy aimed at achieving objective of responsible agency; promote manpower planning to determine categories, number, quality of employees required to deliver services; clearly define mandates of agency which, in turn, should concentrate on core functions; elaboration of agency's personnel management system as an important input to institutional development; carry out investigations to determine existing manpower resources and turnover rates; establish centralized, computerized data bank as a tool of management; and further promote public education to ensure community involvement prior to the formulation of project proposals.

3.1.2 Financing, Cost Recovery: The Conference affirmed that financing and cost recovery are important for the water supply and sanitation sector to ensure: the sustainability of the agency; funding of capital cost investments; expansion of facilities; achievement of financial autonomy by the agency; and provision of improved service to the consumers. To this end, the following recommendations are made: establish statutory status for water utility/agency; aiming at financial, autonomy/self-sufficiency; design of uniform methodology for developing tariff structures; and examination of comparative costs of water in the Caribbean.

3.1.3 Water Resources and Quality Management: The Conference asserted that it is imperative that the State exercise its authority for the protection and ownership of water resources. This is to be achieved through the following: formulation of policy for the protection of ground water, water conservation; enactment of legislation to define surface water rights; licensing for extraction of ground water and the disposal of wastewater, including the identification of agency or determination of mechanism for enforcing legislation; and preparation and implementation of leak detection and public health education programs.

3.1.4 Waste water management: including excreta disposal have been given low priority because of the economic conditions of the Caribbean countries, lack of understanding of the adverse environmental impacts created, and lack of knowledge of available technologies which have resulted in the degradation of

the human and natural environment, hence, the pressing need to tackle this problem during the 1990's. More specifically, the Conference recommended the following: development of policy and master plan; examination of potential of waste water as a resource, e.g., reuse; design some effective strategy to deal with waste water disposal created by developments such as hotels; development of uniform quality standards for the marine environment; and design of an effective strategy to deal with waste water disposal created by developments, such as hotels.

3.1.5 Foremost among the recommendations made by the Conference is the need to include disaster preparedness in planning water supply and sanitation projects which are contemplated for execution during the 1990's. Other recommendations made by the Conference are detailed in paragraph 3.2 entitled: Recommendations.

### 3.2 Follow-up

Activities for follow-up and periodic evaluation include: (1) early preparation of Conference proceedings for submission, within a month, to CARICOM, WHO/Headquarters in Geneva, and countries; (2) early designation of a Task Force or Steering Committee to translate Conference recommendations into a meaningful action plan to be presented to the Caribbean Consultative Forum.

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CONFERENCE'S AGENDA

Wednesday, 1 November

- 8:30 Registration
- 9:00 Opening Session  
Welcoming Remarks  
Objectives/Procedures
- 10:00 Coffee Break
- 10:15 Host Country Statement (A. Rollins)
- Situation of Water and Sanitation Sector, and Progress of Decade  
(R. Reid)
- 11:30 Situation and Economics Perspective of Area and Sector (CDB)
- 12:30 Lunch
- 2:00 Statements by Selected Countries
- 3:30 Coffee Break
- 3:45 Water Supply Program in the Caribbean: Needs and Improvement  
(Emile Warner)
- Wastewater Collection and Disposal: Status and Strategies  
(Arthur Archer)

Thursday, 2 November

- 8:30 Water Resource Management in Small Caribbean States  
(Bernard Clement)
- 9:30 Strategies for Improving Water Supply and Sanitation in the  
Caribbean in the 1990's John's
- Concurrent working groups on:
- Program support: institutional and human resources  
development; community participation and information (Group I)
  - Financing, cost recovery and privatization (Group II)
  - Water resources management (Group III)
  - Wastewater management (Group IV)
- 12:30 Lunch
- 3:45 Technical paper presentations



Friday, 3 November

- 8:30 Reports of working groups
- 10:00 Coffee break
- 10:30 Technical papers and manufacturers presentation
- 12:30 Lunch
- 2:00 Action program for activities of common interest in the Caribbean. Recommendations
- 3:30 Coffee break
- 3:45 First Meeting of the Caribbean Water and Wastewater Association (CWWA)

W E L C O M E   A D D R E S S

Mr. Royden Benjamin, Assistant to the Honorable Minister of Communications, Works and Public Utilities, other Distinguished Guests, Fellow Engineers, other participants, ladies and gentlemen.

It is my pleasant duty as Chairman of the Conference to welcome you here today to this Opening Ceremony of the 18th Caribbean Water Engineers' Conference. I wish to say a special word of welcome to the participants from overseas and to wish them a pleasant and profitable stay in St. Kitts.

Seated at this table with me are: Mr. Royden Benjamin, Assistant to the Honorable Minister of Communications, Works and Public Utilities; Mr. O. K. Yhap, Manager, CEWMP; Mr. Alexander Rotival, Chairman of the Collaborating Council of External Support Agencies; and Mr. Peter Braithwaite, Antigua Public Utilities Authority.

The Caribbean Water Engineers' Conference provides a forum once per year for the Water Engineers' of the Region to come together for the purpose of exchanging ideas, discussing common problems and reporting on the experiences of the intervening period between two conferences. This year, in addition, we wish to look specifically at Water and Sanitation in the Caribbean Beyond 1990. To do this, we wish to examine the Water and Sanitation Sector achievement during the International Drinking Water Supply and Sanitation Decade (IDWSSD) and to recommend an action program for improving sector effectiveness.

In planning for water in the Caribbean Beyond 1990, I am sure that this Conference perhaps in an open session would wish to discuss the effects of natural disasters whether on water supplies with specific reference to earthquakes and hurricanes. When we consider the devastation Hurricane Hugo has wrought on some of our islands and when we hear of the deaths resulting from the recent earthquakes, we are bound to give thought to these natural disasters whether our water supplies come from surface sources where they are affected by hurricanes or underground sources where they are affected by earthquakes.

Seated in this Conference Room are many participants from various international organizations. We are always glad to have them among us, especially in a gathering like this one, as it affords them the opportunity of meeting in one sitting with the professional voices of the Region. The support given and the interest shown in the past, have always been appreciated, and we look forward to their continued interest and assistance.

The Government of this country has demonstrated a strong interest in the development of our Water Resources and I am sure you will hear more about this from our guest speaker.

It is now my pleasant duty to call on Mr. Royden Benjamin, Assistant to the Honorable Minister of Communications, Works and Public Utilities to address you.

Annex IV

Statement by Alexander H. Rotival, UNDP/WHO Coordinator, IDWSSD,  
Chairman, ESA Collaborative Council (Opening Session, 1 November)

The Decade, in its 11th hour, as it approaches its termination in 1990 has two faces. On the one side, the prime objective of service coverage of populations with potable water supplies and adequate sanitation has not been met. Highly optimistic goals for coverage levels, continued high population growth and migration from rural to urban areas, insufficient mobilization of financing within developing countries and in support by ESA's and insufficient adoption of sustainable systems have all contributed to the shortfall in meeting the goals in service coverage by 1990. Only approximately 50 percent will have potable water supplies (the Caribbean countries have done much better than the global average), and rural sanitation will have only gone from the disgraceful figure of 14 to 15 percent during the ten years of the Decade.

Sanitation, in contrast to investments in water supply must be characterized, "The Cinderella" of the Water Decade! How can one speak of 'Health for All in the Year 2000' if investment in sanitation lags so severely behind water supply.

The other positive side of the Decade refers to the major financing to develop appropriate technology in rural water supply and rural and peri-urban sanitation. The major breakthroughs in the development of cost-effective and community manageable technology have resulted in sustainable and replicable systems which married to an understanding of the primacy of the role of the community and in this, the pivotal role of women has coalesced into what is called 'The Decade Approach.'

Another positive and, perhaps, unique facet of the Decade has been the exchange of information between developing countries and the ESA community. The role of government in coordinating sector activities at the country level has been recognized and, perhaps, unlike any other development sector, the ESA's have worked together to harmonize their policies and approach rather than competing and overlapping in support of government programs.

Numerous ESA meetings during the Decade have consolidated. This principally culminating in November 1988 with the establishment at The Hague in The Netherlands of an ESA Collaborative Council to provide support in the 1990's for an accelerated program of support to developing countries for major increases in service coverage by the Year 2000.

The ESA's at their Meeting in Interlaken (Switzerland) in 1987, and again in The Hague in 1988 noted that while the goal of service coverage will not be met by the end of the Decade, appropriate technology within a 'Decade Approach' was available to achieve the goals in the context of sustainable and replicable systems. Hence, it was necessary to get on with the job!

The ESA's have furthermore noted the necessity to further integrate activities and programs in support of the sector to include, on the one hand, PHC and rural efforts in hygiene and, on the other hand, a greater recognition of such environmental factors as waste water recycling and surface water drainage which was related to the increasingly reoccupying problem of growth of urban slum and peri-urban populations which would represent the majority of developing country populations early into the 21st century.

It was up to the developing countries to define and arrive at a consensus on sector strategies for an accelerated program in the 1990's. UNDP was sponsoring a global consultation in India in 1990 of all developing countries for this purpose. Leading up to the India consultation, regional consultations were being organized to define strategies. This Caribbean consultation fell into this category and it was the hope that this Meeting would identify through its working groups a strategy for the 1990's which would reflect the problems, issues, opportunities and priorities specific to the Caribbean.

It was also hoped that this Meeting's message could be conveyed in an appropriate fashion to the forthcoming meeting of the ESA Collaborative Council at Sophia Antipolis (France) on 28 November - 1 December 1989.

Best wishes were expressed for the success of the Meeting in which the ESA Collaborative Council was pleased to be associated.

Statement by Mr. O. K. Yhap, Caribbean Development Bank (CDB)

Mr. Chairman, Distinguished Members of the Head Table, Ladies and Gentlemen.

Let me right away thank the Chairman for his kind and complimentary introduction.

On behalf of the Caribbean Development Bank (CDB), I wish to say how pleased we are to be involved with this important regional conference and to be cosponsoring the representatives from 13 regional countries to this meeting. These participants are being sponsored under the Caribbean Basin Water Management Training Program. Over the years, starting from about the mid-1970's, this program has had substantial financial support from the Canadian International Development Agency (CIDA). I am happy to report that the CDB has very recently concluded an Agreement with Canada for their continuing financial support for this training project for the next three years.

You will note that the long-term involvement in this training project by CIDA, PAHO and CDB indicates a deep commitment to the provision of training in the water and sanitation sector.

In conclusion, I would like to leave with you the thought of the importance of commitment -- commitment by all of us to our jobs, our countries, our water institutions and on the whole to the water and sanitation sector.

I thank you.

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**WATER SUPPLY AND SANITATION - BEYOND THE DECADE  
ASIA AND PACIFIC REGIONAL CONSULTATION**

**Manila, 4-8 June 1990**

**MEETING REPORT**

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SANITATION (IRC)



**August 1990**

## INTRODUCTION

This report presents the outcome of a Regional Consultation of senior water supply and sanitation specialists and planners from the Asian and Pacific Region. The Consultation was held in Manila, Philippines on 4-8 June 1990, organized and hosted by the Asian Development Bank. It was attended by 94 participants, representing 23 of the region's countries and 25 external support agencies (ESAs). A list of participants is included as Annex 1 to this report.

It is one of a series of Regional Consultations held under the auspices of the ESA Collaborative Council, which was established at an International Drinking Water Supply and Sanitation Decade Consultation held in The Hague, The Netherlands, in November 1988. The activities of the Council are part of a Framework for Global Cooperation in Drinking Water Supply and Sanitation, which has as its overall objective,

**“To maintain Decade momentum beyond 1990 and accelerate the provision of water supply and sanitation services to all, with emphasis on the unserved rural and periurban poor, by using a coordinated programme approach.”**

The results of the Asia and Pacific Regional Consultation, along with those of Regional Consultations for Africa and for Latin America and the Caribbean, will form part of the input to a Global Consultation on Water Supply and Sanitation to be held in New Delhi, India, on 10-14 September 1990. Organized by UNDP and hosted by the Government of India, the New Delhi Consultation will review the International Drinking Water Supply and Sanitation Decade (1981-1990) and seek to develop a global strategy for accelerated development of the water supply and sanitation sector in the 1990s — The *Safe Water 2000* programme.

The Manila meeting was opened on 4 June 1990 by Mr. Neil Collier, Deputy Director of Infrastructure of the Asian Development Bank (ADB). The inaugural address was given by ADB Vice President (Operations) Mr. S. Stanley Katz, and participants were also addressed during the opening by The Honorable Fiorello Estuar, Secretary of Public Works and Highways, on behalf of the Government of the Philippines, by Dr. S. T. Han, Regional Director, Western Pacific Regional Office, on behalf of the World Health Organization, by Mr. Turhan K. Mangun, UNDP Resident Representative in the Philippines, on behalf of UNDP Assistant Administrator and Regional Director for the Asia-Pacific Bureau, Mr. K. G. Singh, and by Mr. Alexander H. Rotival, UNDP/WHO Decade Coordinator and Chairman of the Collaborative Council. The closing address on 8 June was given by Mr. S.V.S. Juneja, Director of Infrastructure of ADB.

The texts of selected opening and closing speeches are included in the official Proceedings of the Consultation, published by ADB.

The Chairman for the plenary sessions of the Consultation was Dr. Florencio F. Padernal, Project Director of the Project Management Office for Rural Water Supply of the Department of Public Works and Highways of the Philippine Government and President of the Philippine Water Works Association.

## FORM OF MEETING

The Regional Consultation considered Sector Strategy Papers from five countries of the Asia and Pacific Region, Country Issues Papers from a further six countries and from the South Pacific Islands, and General Issues Papers presented by four representatives of international agencies. The titles and authors of the papers presented at the Consultation are listed in Annex 2, and summaries and full texts of each paper are included in the Proceedings.

The issues raised in the Consultation papers and plenary discussions were considered by four Working Groups drawn from the participants, with the themes:

**Working Group 1: Development of Country Sector Strategies with Realistic Programs and Approaches**

**Working Group 2: Financing of Water Supply and Sanitation Services**

**Working Group 3: Community Management of Water Supply and Sanitation Services**

**Working Group 4: Rapid Urbanization and Resources Management**

Throughout the Consultation, participants stressed that development of sector strategies and coordination of support activities must be led by developing countries. To this end, the four initial Working Groups each held a final session to frame their conclusions, in which both the Chairman and the Rapporteur were developing country representatives. The reports of the four Working Groups, included in full in the Proceedings, were discussed in plenary and consolidated into the draft conclusions and recommendations of the meeting by a fifth Working Group. Plenary discussions then agreed the final version of the Consultation conclusions and recommendations, which are the basis of this report.

## ACKNOWLEDGEMENTS

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Support for developing country participants in the Consultation was provided by The Asian Development Bank, assisted by the UNDP/World Bank Water and Sanitation Program and the governments of Australia, New Zealand, France, The Federal Republic of Germany, The Netherlands, Switzerland, and the United States of America.

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# **WATER SUPPLY AND SANITATION - BEYOND THE DECADE**

**Manila, 4-8 June 1990**

## **1. PREAMBLE**

In the 1990s, the countries of Asia and the Pacific will intensify efforts to bring water supply and sanitation services to as many as possible of their growing populations, giving high priority to meeting the basic needs of the rural and urban poor.

Recognizing that progress during the International Drinking Water Supply and Sanitation Decade (IDWSSD) - 1981 to 1990 - has fallen short of the ambitious coverage targets, sector specialists from 23 countries of the Asian and Pacific Region resolved individually and jointly to convert the lessons learned and experiences exchanged during the IDWSSD into strategies for accelerating the provision of WSS services in the coming decade. Faster progress will be accompanied by parallel efforts to ensure that services provided can be sustained by governments and communities together, and that they are used in the most effective way, so as to bring improved health and productivity and betterment of the living environment.

The problems faced by Asian and Pacific countries are formidable. High population growth rates, accompanied by rapid urbanization, put extra pressures on already scarce resources, and add to the plight of both the urban and the rural poor in a region which contains many of the world's biggest countries. Demographic projections show that by the year 2000 Asia will have 12 of the world's 25 "megacities", with populations of 10 million or more. Industrialization, vital for economic growth, brings with it high demands for water resources and serious threats to those same resources through the wastewater and hazardous wastes that it generates.

Throughout the region, environmental sanitation issues have received disproportionately low priority in the past, leaving many millions of people living in unsanitary and health-threatening conditions. In the coming decade, scarcity of water resources will become a major criterion in planning development progress in many countries; protection and management of water resources will need to be given high priority, with increased use of waste reduction and recycling measures.

Special problems arise too in the fragile ecosystems of the small island nations of the Pacific and the Indian Ocean. Here, environmental degradation is a growing threat and the financial, institutional and human resources available to combat it are severely limited.

On the positive side, experience has shown that successful programmes result from mobilizing the high potential of the Asian people to undertake community-level self-help activities.

In tackling the challenges of the 1990s, Asia's WSS sector specialists will inevitably require greater government investment, accompanied by more support from the external support agencies. To achieve this vital extra support, public awareness campaigns will emphasize both the serious threats to economic and social progress inherent in the present environmental sanitation trends, and the availability of technical and economically viable solutions, provided that the required level of investment is achieved quickly and continuously.

These moves to achieve greater political commitment to WSS programmes need to be accompanied by measures, supported by ESAs, to increase the efficiency of sector institutions, to give priority to rehabilitation and better management of existing WSS systems, and to build up the financial absorptive capacity of many of the countries of the Asian and Pacific Region.

## 2. THE NEED FOR SECTOR STRATEGIES

To provide a framework for increased WSS investments, each country needs to have a comprehensive sector development strategy setting out the overall objectives, priorities to be afforded to urban and rural areas and the balance between the water and sanitation subsectors. It should include identification of the responsibilities of all agencies active in the sector, and the role to be played by central and local government, private sector and non-governmental organizations, and benefiting communities. Clear definition is needed of the government's commitment to sector development, the resources to be allocated to it, policies for cost recovery, tariffs and subsidies, and the manner in which WSS sector planning is to be integrated with plans for urban and rural development, land use, water resources management and environmental protection.

Within the overall sector strategy, governments should indicate the role to be played by external support agencies. This may well include the provision of technical advice and support in preparation of the strategy itself, and in strengthening of the capacities of the various actors involved through project components for institutional and human resources development and the collection, analysis and dissemination of appropriate technical information.

On a country-specific basis, overall responsibility for preparation and authorization of the WSS sector strategy should rest with the central planning agency, which should ensure that all agencies involved have the authority and the resources to carry out their sector responsibilities. With this political commitment, countries can ensure that the cooperative will expressed by multilateral and bilateral donors and NGOs is translated into coordinated support activities which do not interfere with government's absolute prerogative to determine sector policy.

The Manila meeting agreed on a comprehensive list of elements which should be considered by governments of the region in the preparation or review of a sector strategy to meet the challenges of the 1990s. It also recommends that governments should consider hosting regular meetings with donors active in the country, to help ensure that ESA support is better coordinated in support of the government's agreed strategy. It is important that any generalized approaches to WSS in the Asian and Pacific Region should take account of the special circumstances applying in the small island nations of the Pacific and the Indian Ocean, and also recognize the particular needs of the region's least developed and landlocked countries.

## 3. OVERALL SECTOR OBJECTIVES

Throughout the Asian and Pacific Region, there is a view that the importance of water supply and sanitation sector development goes beyond health improvements, and includes economic and environmental enhancement.

The overall sector objective for the 1990s is:

**Improvement of human health and productivity and betterment of the living environment, through the provision of sustainable and effectively used water and sanitation systems to as many people as possible.**

To attain this overall objective three areas are of crucial importance in the Asia and Pacific region:

- 1) Mobilizing extra funds from governments, donors, and people benefiting from new and improved services

- 2) Community-based management of water and sanitation services in rural and periurban areas
- 3) Management of resources and the environment in the face of rapid urbanization.

These topics were analyzed in detail in the Manila meeting and led to a comprehensive series of recommendations for reaching the declared objective.

#### 4. DEVELOPMENT OF SECTOR STRATEGIES

In addition to the broad objectives described in Sections 2 and 3 of this report, the Consultation developed a checklist (Box 1) of issues which may need to be addressed by individual countries in their preparation of WSS sector strategies.

In the particular context of the Asia and Pacific Region, the recommendations lay great emphasis on the setting of realistic targets. The targets should be based on:

- (i) Needs expressed by communities and analysis of service levels;
- (ii) Unaccounted-for-water investigations;
- (iii) Assessment of institutional capacity and effectiveness;
- (iv) Human resource requirements;
- (v) Operational and financial efficiency;
- (vi) Regular monitoring, evaluation and impact studies; and
- (vii) Recognition of cost recovery strategies as an important factor in the sustainability of the sector.

#### **Box 1: Elements to be considered in development of Country Sector Strategies**

The objectives of the sector strategy are to provide a framework for water and sanitation sector investments on a country by country basis consistent with expressed needs of the communities balancing the needs of urban and rural sub-sectors. The following areas of activity should be addressed in a sector strategy. The respective priorities would be country specific. The needs of small island nations of the Pacific and Indian Oceans are necessarily different from those of countries in Asia.

- (i) Integrated water resources planning;
- (ii) Human resources development;
- (iii) Environmental impact and pollution control;
- (iv) Financial resources (capital and O&M), including cost recovery policies;
- (v) Institutional capacity and framework, and sector legislation, including possible decentralization and privatization;
- (vi) Effective utilization of indigenous resources (equipment, materials, etc.);
- (vii) Service levels in accordance with expressed needs;
- (viii) Operation and maintenance, and monitoring/evaluation of sector performance;
- (ix) Information management;
- (x) Prioritized investments emphasizing rehabilitation of existing facilities;
- (xi) Motivation of potential beneficiaries to stimulate effective demand for services and commitments to their upkeep; and
- (xii) Health impact and community management, including role of women.

To address the identified problems of inadequate sector investments, population growth, and urbanization, Asian and Pacific countries are recommended to include specific proposals for tackling these issues within their sector strategies, and to make maximum use of the region's most valuable resource — its people — by promoting community management of WSS programmes in rural and periurban areas.

### ***Financial Resources***

High priority is given to measures to make more effective use of available financial resources. Users themselves may have to bear a greater proportion of the cost, through tariff systems supported by effective metering, billing and collection or, where these are inappropriate, through other alternatives. However, user charges should be designed in accordance with each country's socio-economic conditions and resource situation.

Increased efficiency of sector institutions can be achieved by:

- setting up appropriate incentives for managerial improvement and efficiency;
- encouraging decentralization of responsibilities to the extent appropriate; and
- developing effective human resources programmes.

**Improved operation and maintenance** of existing systems is essential and rehabilitation of defective systems should be evaluated ahead of investment in new systems. Promoting adequate user charges creates incentives for service institutions.

In urban areas of Asia, the private sector has great potential for WSS sector financing and management, and specific provision should be made for mobilizing and providing incentives for private sector involvement in WSS programmes in periurban areas.

### ***Community Management of WSS Services in Rural and Periurban Areas***

In the selection of programmes and projects, the community's aspirations should be taken into account through well-designed feedback. In rural and low-income urban areas, the predominant role of governments and ESAs needs to change emphasis from provision of services to promotion of community management, through increased access to information to enable communities to make informed choices. The programmatic approach should be used for project preparation and implementation, so as to provide flexibility and opportunity for community decision making, resource mobilization and capacity building to dictate the pace of development. More funds, time and human resources should be allowed for the promotion of community management processes in the project preparation phase, and general community management processes should be the key aspect of project design during the early phases of project preparation.

By emphasizing the need for "effective use" of WSS facilities, Asian countries recognize that the dominant role of women in household hygiene has to be reflected in a corresponding involvement in planning and implementation of WSS programmes. Hygiene education and user awareness campaigns are proposed, to stimulate effective demand for services, and these must be linked to the diminishing availability of fresh water resources and the corresponding need for protection and improved management of existing resources.

In support of country initiatives to implement community management of WSS projects in periurban and rural areas:

- Acceptance of community management approaches should be promoted among governments, ESAs and NGOs, through the communication of project experiences

- Community management should be promoted within communities, through leadership development and training programmes
- The private sector, such as credit organizations, equipment suppliers, etc. and professional organizations should be encouraged to become partners in the community management process
- Development agencies, local governments and ESAs should be staffed with professionals experienced in and qualified for community management approaches
- Joint community/government/NGO approaches to project development should be formulated, and field instruments such as promotional campaigns, planning methods, training programmes, etc. should be developed for scaling up community management processes from small projects to large schemes
- NGOs should be involved more extensively in the provision of water supply and sanitation services, which requires stronger links to be established between NGOs and governments.

### ***Management of Resources and the Environment in the Face of Rapid Urbanization***

Recognizing that urbanization will continue throughout the 1990s, sector strategies must seek to manage and mitigate its impact. That means giving due emphasis in overall planning to the important entry point that improved WSS services provide for income generation and poverty alleviation programmes for the urban poor, alongside their importance in safeguarding health. In promoting maximum efficiency in water use and water quality management, strategies need to correct the past imbalance between the provision of new water supplies for domestic and industrial consumption and the provision of facilities for wastewater treatment and disposal.

Urbanization creates a need for integrated planning of a host of linked activities, and development of the WSS sector strategy must run in parallel with adjustments to programmes for land use and water management, solid waste management including recycling, and environmental protection.

In Asia and the Pacific, there is a special need to promote and implement water savings in a concerted approach to water resources management. Modern methods for using irrigation water in more efficient ways can have a major impact on the availability of water for all purposes, and particularly for extension of community water supplies. National strategies need to include minimum norms and quality standards for potable water supplies which are appropriate and economically justifiable.

Conflicts can arise between enforcement of pollution prevention legislation and possible economic/job losses. Pollution protection laws should be applied equally to municipal and industrial discharges, and should include appropriate incentives for relocation of polluters where possible.

## **5. FRAMEWORK FOR COOPERATION**

The outcome of the Manila Meeting represents the combined views of representatives from 23 Asian and Pacific countries and 25 external support agencies on the best way of achieving what all agree is a common objective. All partners are committed to continue to exchange views and experiences, and to cooperate in overcoming the challenges of the 1990s.

The primary mechanisms for cooperation will be comprehensive country sector strategies which countries will now prepare as a matter of urgency. The major elements to be included in any sector strategy have been endorsed by all the Manila participants. Without interfering in government's absolute prerogative to fix priorities, ESAs can provide experience and technical advice in developing the strategies, and will then be in a

much better position to coordinate their own activities in the country in ways which do not conflict with the agreed strategy.

In developing and implementing their WSS sector strategies, Asian and Pacific nations will need to accompany provision of new facilities and services with all the necessary support activities to assure long-term sustainability and effective use. ESAs have indicated that they will consider favorably requests for financial and technical support for "software" aspects which are components of countries' agreed sector strategies.

The activities for which ESA support might be mobilized on a country-by-country basis, according to each country's specific needs are:

- Provision of essential equipment and materials.
- Hygiene education and other programmes to increase user awareness of benefits and hence the effective demand for services
- Systematic studies on ways to create an institutional environment which clarifies the responsibilities of the different agencies and encourages more efficient performance.
- Programmes to document and emphasize the benefits of the sector to overall socio-economic development and environmental protection, to generate additional resources
- Development of materials and methodologies for effective promotion and social marketing
- Establishment of rational criteria for project selection

**In support of country initiatives to mobilize more funds and use existing funds more effectively, ESAs can provide immediate and regular assistance by:**

- Assigning funds for capacity building, institutional and human resources development, and information exchange components in all new programmes
- Collaborating in the preparation and dissemination of materials which emphasize the benefits of the WSS sector to overall socio-economic development and environmental protection, and the methods available to optimize cost recovery and operational efficiency
- Encouraging and facilitating the transfer of knowledge and experiences among Asian and Pacific countries, through exchange of experts, workshops and documented case studies on the critical issues identified in the Manila Meeting report.

**ESAs can help countries to promote greater awareness of community management approaches and to implement community management by:**

- Collaborating with governments and NGOs in the financing of community-based projects
- Supporting private sector credit organizations and equipment suppliers, as partners in the process
- Adopting a programmatic approach to project preparation and implementation, to allow community decision making, resource mobilization and capacity building to dictate the pace of development
- Including components for leadership development and training programmes and promotional campaigns within WSS programme support

**ESAs have a key role to play in providing governments with requested support and guidance on appropriate technologies, institutional arrangements and legislative models for urban environmental management.**

The Manila Meeting listed a number of critical issues for which collaborative ESA activities may provide much-needed guidance, including:

- Measures to trace and reduce unaccounted for water and improve operation and maintenance
- Appropriate means, including pricing policies, for stimulating efficient water use in urban and industrial areas
- Measures for reducing, controlling and treating wastes, encouraging reuse wherever feasible, and disposing of unusable residues
- Optimum use of seawater to reduce consumption of fresh water in appropriate situations
- Training for corporate management
- Relationships between land use and the elements of the hydrological cycle and environmental effects
- Community participation in integrated urban environmental planning and implementation
- Post project evaluations to determine the effectiveness of water supply and sanitation projects in improving public health conditions, particularly for the urban poor.
- Initiation of applied research programmes to evaluate and recommend appropriate technologies and support structures for effective environmental management in periurban areas, using the listing of key issues developed at the Manila Meeting as a guide.

On an intercountry level, ESAs have indicated that they will support appropriate studies and travel for developing country specialists to exchange knowledge and experience, and intercountry workshops to address common issues. Periodic regional consultations, led by DC governments with support from ESAs, will assess progress and review strategies and approaches.

In the global forum, beginning in New Delhi in September 1990, the views of Asian and Pacific countries will play an important part in development of a Global Strategy for the 1990s.

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## **ANNEX 2. PAPERS PRESENTED AT THE REGIONAL CONSULTATION**

### ***Sector Strategy Papers***

Bangladesh, by Mr M.A. Karim

Indonesia, by Mr Saad Ali Basaib

Pakistan, by Mr Aijaz Akhtar

Papua New Guinea, by Mr Ukatha Oti

Sri Lanka, by Mr M. Wickremage

### ***Country Issues Papers***

Taipei, China: Management of Water Resources in an Island Nation, by Mr Chian Min Wu

Pacific Island Countries: Water Resources Management, by Mr Alfred Simpson

Thailand: Institutional Policy and Needs, by Mr Visnu Bhulsuk

Urbanization and Control of Environmental Pollution - Environmental Improvement of the Han River, by Mr Jae-Bum Choi

Urbanization and Control of Environmental Pollution - The Manila Situation, by Dr Delfin Ganapin, Jr.

India: Financial Viability and Management, by Ms Indrani Sen

People's Republic of China: Urbanization and Demand on Resources, by Ms Liu Xizeng

### ***General Issues Papers***

Operation and Maintenance of Water Systems, by Mr Jan Janssens

Sustainability and the Human Factor (Women, Men and Children), by Ms Deepa Narayan-Parker

Financing of Water Supply and Sanitation Services, by Mr Harvey (Mike) Garn

The Role of ESAs in Water Supply and Sanitation for Sector Development in Asia, by Mr Carlo Rietveld

**Regional Seminar on Sustainable  
Rural Water Supply Development  
Amman, 5-10 May 1990**

**CONCLUSIONS AND RECOMMENDATIONS**

- I. The Regional Seminar on Sustainable Rural Water Supply Development was held in Amman, Jordan, between May 5 and 10, 1990. This meeting was organized jointly by the Economic Development Institute (DEI) of the World Bank and the Centre for Environmental Health Activities (CEHA) of the WHO Regional Office for the Eastern Mediterranean. The Jordanian Ministry of Health and Ministry of Water and Irrigation cooperated in the seminar preparation and delivery. The UNDP Regional Bureau for Arab States and European Programmes provided financial support for delegates and resources persons from Arab countries. The balance of expenditures for the seminar was financed by DEI and WHO.
- II. The purpose of the Seminar was to agree on a set of recommendations which governments could implement in order to sustain progress in the expansion of water supply services in rural areas. The meeting recognized that in spite of major efforts by governments during the International Water Supply and Sanitation Decade (IDWSSD, 1981-1990), the levels of service in rural areas have not increased markedly. In fact, because of fast population growth experienced in the developing countries, increases in service coverage have not caught up with the population growth, and in the end service coverages in rural areas have stagnated if not decreased.
- III. A number of topics dealing with planning procedures, community participation and involvement, technology choice, cost recovery and women's role in rural water supply, were discussed at the seminar. There was general agreement that the current planning procedures and approach to rural water supply are not producing satisfactory results. Under these procedures, governments are the promoters, executers and operators of rural water supply projects. Where such projects have been implemented, the communities have not participated in the planning, design, execution and operation of rural water supply projects. This top-down planning approach has made communities reluctant to undertake ownership of rural water supply systems, and with it the responsibility for their operation and maintenance. A bottom-up approach was discussed during the seminar, including new planning procedures to secure community involvement in the implementation and operation of rural water supply projects, in order to ensure their sustainability.



IV. The following recommendations were made by the assembly of country delegates to the Amman meeting:

1. An overall development strategy should be formulated for the water supply and sanitation sector. Such a strategy should be based on needs and resources and staff requirements in both the urban subsector and the rural subsector. A particular aim of the strategy would be to determine how to achieve the sector's financial autonomy and project sustainability. A mechanism for transfer of resources between the urban subsector and the rural subsector, between communities of different sizes, and between different classes of consumers should be spelled out as part of the sector development strategy.
2. The provision of rural water supply in a community should be an integrated part of an overall strategy for the economic development of this community. Other elements of this strategy should be the provision of roads, electricity, schools, public health education, sanitation, family planning guidance, etc. Community selection for the implementation of rural water supply should be based on a set of physical, economic, technical and social considerations. An important consideration should be the potential for economical development (manufacturing, commercial activities, etc.) in a community.
3. A national sector strategic investment plans should be prepared with a view to obtaining government commitment and support, and the assistance of bi-lateral donor agencies. These plans should be considered as guides for discussion between governments and donors, and not as blue-print actions to be rigidly implemented within a specified timeframe.
4. The Meeting recognized the difficulties in implementing rural water supply projects through the traditional project cycle stages. In particular, the meeting underlined the limitation of control-oriented planning and blue print procedures in the execution and operation of rural water supply projects which should be considered as experiments with moving implementation schedules and goals. Time should be allocated for the carrying out of the pilot and experimental projects. The planning process for rural water supply projects should be adaptive and incremental with the possibility for adapting the project implementation and goal to newly discovered conditions and constraints.
5. Countries should set forth policies for the water supply and sanitation sector in water codes, which will set out regulations and procedures to be followed in the sector. Water codes should deal with water resources development and management, program implementation and policies, water uses and demand usage priority, cost recovery procedures and levels. Efforts should be made in the water codes to define the role of government agencies, the private sector, donors, non-governmental organizations and community-based organizations in sector of development and management.

6. Service levels should reflect the expressed demand of beneficiaries, which they desire, can afford, and can sustain in the long term. Governments should spell out policies and strategies appropriate for meeting the basic water needs of rural communities.
7. As part of policies, sustainability should incorporate various levels of cost recovery. A minimum requirement for sustainability is cost recovery for operation and maintenance in the short term, and total cost recovery in the long term. Cross-subsidy of capital costs, and possibly part of the operating costs, might be an appropriate strategy for achieving cost recovery in the sector.
8. Governments should encourage non-government organization, community-based organizations and the private sector to participate as fully as possible in rural water supply and sanitation projects.
9. The integration of water supply, sanitation and hygiene education is essential for improving health of the rural population. This requires close collaboration between sector institutions.
10. The responsibility for water supply and basic family health has traditionally been held by women. Consequently, women must be involved in the planning, maintenance, use and management, of any improvements in water, sanitation and hygiene. Efforts should be made to facilitate their involvement.
11. Public health education plays a significant role in improving environmental conditions and health. Therefore, governments should raise community awareness of good hygiene practices through mass media, as well as by propagating messages through personal communications and schools at the community level.
12. In view of the multidisciplinary nature of the sector and of the many agencies actively involved in it (such as water and sanitation authorities, public health departments, education ministries and public works authorities), good inter-sectoral coordination is essential.
13. Decentralization of rural water supply institutions should be achieved by delegating responsibility and authority for programme planning and implementation to levels of government which are closest to the community and to the community itself.
14. Community involvement is an essential element in achieving rural water sustainability. Beneficiaries should participate and contribute through associations in planning, construction, management and maintenance of schemes. However, agencies can undertake primary responsibilities for operation and maintenance in cases where they have the capability of doing so in a financially viable (full cost recovery) and cost-effective manner.

15. In order to implement community managed programmes effectively, agencies must be appropriately staffed to resolve socio-economic, cultural and technical issues and constraints involved in such programmes. This implies the employment of sociologists, applied anthropologists, communications specialists, etc...
16. The introduction of a community involvement approach is not a simple matter. Initially, pilot projects may be required for the careful design and refinement of implementation methods. Such pilot projects will be carried out by concerned agencies utilizing staff competent in the social and communication sciences in cooperation with the beneficiary community.
17. Human resources development should be undertaken in agencies, users' associations, and communities at all stages of project implementation and operation. Staff training is an essential component in rural water supply projects, if these projects are to be sustainable. Human resources development is a basic building block in development of the sector. Governments should take measures and allocate resources for training, for planning, design, construction, operation and maintenance. Training should not be restricted to project staff, but should also reach community members responsible for contributions to the project.
18. The technology selected should be simple, taking into account environmental conditions and water resources availability. Governments should assist communities in selecting appropriate and affordable technology, through pilot and demonstration projects. In this respect governments should carry out intensive studies of water resources so that they can propose the most economic projects to the communities.
19. Water supply and sanitation agencies have tended to plan and provide services for rural communities in isolation of the communities, and subsequently have to assume responsibility for their operation and maintenance. In doing so agencies use the blueprint and control approach to planning and implementation. Their methodology should henceforth change to draw on community resources. This implies changes in orientation, field methods and communications transforming agency/community relationship from donor/recipient to a partnership for project development through mutual learning and negotiations.
20. With a view to alleviating rural poverty, governments and donor agencies should continue to provide financial assistance for implementation of rural water supply. As a contribution toward economic development of rural communities, governments should be willing to subsidize the first capital investments for basic rural water supply. As these investments become operational, communities should however be prepared to cover operating and maintenance expenses including depreciation, allowances for system expansion, and equipment renewal.

21. Governments should outline the policies that they intend to apply in the rural water supply sector. Donors and lending agencies intervening in the sector should conform to these policies. In case of disagreement, donors and lending agencies should discuss them with governments, with the objective of taking a common approach in their assistance to the sector.
- V. The country delegates have agreed to discuss the meeting conclusions and recommendations with their respective concerned authorities and to work toward their implementation in their countries. The participants are of the opinion that a similar meeting should be convened in the future to evaluate policy changes and progress in the rural water supply sector, based on the above recommendations.
- VI. The assembly of country delegates wishes to thank the Jordanian authorities, particularly the Ministry of Health and the Ministry of Water and Irrigation for their hospitality and courtesies extended to them during their stay in Amman. They have promised to report their stay and experiences in Jordan to their agencies.

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes the need for transparency and accountability in financial reporting.

2. The second part of the document outlines the various methods and techniques used to collect and analyze data. It includes a detailed description of the experimental procedures and the statistical tools employed.

3. The third part of the document presents the results of the study, including a comparison of the different methods and a discussion of the implications of the findings. It concludes with a summary of the key points and a list of references.

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# AFRICAN RURAL WATER SUPPLY AND SANITATION WORKSHOP

Abidjan, 7-9 May 1990

## SUMMARY OF WORKING GROUP REPORTS

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AFRICA RURAL WATER SUPPLY AND SANITATION WORKSHOP <sup>1</sup>  
ABIDJAN, COTE D'IVOIRE, 7 TO 9 MAY 1990

SUMMARY OF WORKING GROUP REPORTS

Accelerated provision of sustainable water supply and sanitation services in rural areas of Africa during the 1990s requires a fundamental change in the role of central and local government, the formal and informal private sector, and local communities. Governments must progressively change from being direct providers of RWSS services to being mainly promoters and equipping local organizations to implement and manage new services. In taking over the responsibility for the choice and management of their own facilities, beneficiaries must contribute a substantial proportion of the costs of sustaining the services. For most African countries the immediate need is to establish a clear policy and regulatory framework, backed by firm political commitment to bring widespread and sustainable services to rural people within a specified and achievable time frame.

MAIN FINDINGS

1. Many governments in Africa are presently direct providers of rural water supply and sanitation services. In the 1990s, the primary role of government should shift from provider to that of promoter or facilitator. The objective should be to create the enabling environment in which sustainable services can be provided, taking maximum advantage of the capabilities of central and local government, the formal and informal private sector, NGOs and communities. The pace of this decentralization will necessarily be gradual during the 1990s, varying from country to country and linked to capacity building at the national, regional and local level.
2. Today in Africa, costs of rural water supply and sanitation are heavily - often fully - subsidized. This cannot be sustained. While it will still be necessary for Governments to subsidize a substantial proportion of the capital costs of new services, beneficiaries must shoulder most or all of the recurrent costs of operation and maintenance. This implies that service levels and technologies cannot be prescribed but must be responsive to consumer demand.
3. In implementing these institutional and financial reforms, governments need to establish a clear policy and regulatory framework for sector development. The activities of sector institutions, NGOs and external support agencies, should be defined and coordinated within this framework. Few countries in Africa presently have such a framework.

INSTITUTIONS

4. Institutional roles will need to change in order to cope with programs for accelerating sector development. The time frame and the extent of the shift in the role of government will depend on political, economic and environmental factors. In some countries, governments are already assuming a promotional role, including animation and health education. To create the enabling environment for

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<sup>1</sup> Sponsored by the World Bank, African Development Bank and UNDP

sector development, governments promotional role will also include such matters as mobilizing finance; establishing appropriate policies and legislation; agency coordination; human resources development; planning; standardization; and monitoring and evaluation.

5. The process of decentralization requires strengthening the capacity of local government and of community organizations to manage simple systems. Women's organizations can play a particularly important role in management of services. It may however be difficult to achieve community management in the short term; this would be facilitated by appropriate legislation and support structures. Sensitization of local communities to their changing responsibilities will be an important precondition of the new approach.

6. The promotional role of government will also include supporting the formal and informal private sector through training, the provision of incentives and creation of the right market conditions. Attention should be paid to supporting local artisans as providers of construction and operation and maintenance services. Privatization of drilling and other activities may reduce costs and improve efficiency.

7. Strong political will is needed to ensure these institutional reforms. It will therefore be important to raise the awareness of politicians to the justification for and implications of change.

#### FINANCE AND RESOURCE MOBILIZATION

8. There is general agreement that the principles of cost recovery linked to effective demand should be progressively adopted in the delivery of rural water supply and sanitation services. It is recognized that, in some areas, especially where water has traditionally been regarded as free, cost sharing will need to be treated with particular sensitivity.

9. Capital costs of the provision of RWSS are differentiated from recurrent costs of operation and maintenance (including depreciation or amortization). Financing capital costs should be largely the responsibility of governments, through their own resources or with the support of External Support Agencies (ESAs). Demand for services will be reflected by community contributions to these capital costs, either in cash or kind. Subsidies should not be used indiscriminately, but to ensure the widespread provision of basic services and to meet the costs of the promotion activities of government. Governments and ESAs should ensure that sufficient resources are devoted to outreach activities, sensitization, training, etc.

10. Beneficiaries should progressively assume most or all of the recurrent costs of operation and maintenance. User acceptance of charging systems will often be improved if funds are collected and managed by the community, rather than being channeled to central government treasuries. Recurrent cost recovery may also be made more feasible if income-generating activities are linked to RWSS interventions.

11. Accelerated service coverage in the 1990s can be achieved by reducing unit costs and mobilizing additional resources. Costs can be reduced by the adoption of appropriate technologies and service levels, and by increasing the efficiency of sector institutions. Particular attention should be paid to reducing the



extremely high cost of drilling in Africa. New sources of financing in rural areas need to be explored; possibilities include mutual credit unions. Private banks should be encouraged to develop financial packages suitable for community organization.

#### SECTOR MANAGEMENT

12. Governments need to have an effective mechanism for coordinating sector policies, planning and management. Furthermore, they need to take strong initiatives in developing and enforcing a sound sector policy and regulatory framework, within which national sector institutions and ESAs can provide coordinated support. Such a framework should reduce the need for ESA conditionality and discourage tied aid. Effective coordination can be jeopardized by ESAs which are not willing to conform to established policies and strategies.

13. In development of sector strategies and implementation of programs, maximum use should be made of national and regional expertise, thus building the capacity of local consultants and contractors. All RWSS programs should include components for training beneficiaries and national technicians and experts, to minimize the use of expensive technical assistance in the future.

14. RWSS sector planning should form part of rural development planning and, at the national level, be integrated into the economic development planning and budgeting process. In the 1990s special attention needs to be paid to planning for rural sanitation, largely neglected to date.

15. There is a need for mechanisms which will enable external assistance to be more directly channeled to community activities. Governments should seek ways of enabling local organizations to enter contracts directly with support agencies.

#### ACTION

16. Participants welcomed the opportunity that the Workshop had provided to focus attention on the daunting problems of providing sustainable water supply and sanitation services in rural Africa. The recommendations and conclusions of the five working groups were agreed, and delegates requested their wide dissemination to governments and ESAs for endorsement and implementation. The Workshop had provided a good beginning to regional consultation and orientation in Africa, which now must be translated into effective action at the country level.



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Sub-Regional Consultation on Post-Water  
Decade Strategies

Dubrovnik, Yugoslavia, 26-30 June 1990

ICP/CWS 015  
12 July 1990  
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ORIGINAL: ENGLISH

## SHORT REPORT

### 1. Introduction

As the International Drinking Water and Sanitation Decade is coming to an end, the Regional Office for Europe of the World Health Organization, with the support of the United Nations Development Programme and the Federal Institute of Public Health, Belgrade, organized a Sub-Regional Consultation in Dubrovnik, Yugoslavia, 26-30 June 1990 with the following scope and purpose:

1. To carry out a sub-regional evaluation of the progress made during the past decade as per analyses made of the questionnaires sent to countries as part of the new WHO/EURO water and sanitation evaluation procedures.
2. To present country by country proposed national strategies and policies in the water supply and sanitation sectors.
3. To elaborate a draft of a sub-regional strategy for the future in order to improve the present situation.
4. To present project proposals per country for external support (Albania, Bulgaria, Hungary, Malta, Poland, Romania, Turkey, Yugoslavia).
5. To provide an opportunity for invited external support agencies (ESAs) and countries to exchange information on the basis of draft project proposals.

The Consultation was attended by 30 participants from 17 Member States of the Region, a representative from UNESCO/Paris, the Resident Representative of the United Nations Development Programme (Yugoslavia) assisted by the Programme Officer, the UNDP/WHO Coordinator IDWSSD, representatives of WHO Headquarters and EURO, and 8 Yugoslav observers (see Annex 1: List of Participants).

5/27/90

The Consultation was opened by Mr Dusko Bobarevic, Director, Department for International Relations, Federal Secretariat for Labour, Health, Veterans Affairs and Social Policy, and by Mrs Nada Dorsner, Member of the Presidency of the Assembly of the City of Dubrovnik. Representatives of the UN Agencies attending the Consultation also welcomed the national delegates. The participants selected the following meeting officers:

Dr Pavle Todorovic	Chairperson
Mrs Margarida Cardoso da Silva	Vice-Chairperson
Prof. Marek Roman	Vice-Chairperson
Mr Xavier Bonnefoy	Rapporteur.

The Executive Secretary for the Global Consultation on "Safe Water and Sanitation for the 1990s" sent special greetings to all the participants attending the Consultation, stressing the importance of linking the WHO European Programme with the global efforts for providing adequate water and sanitation services to the populations of the world.

## 2. Evaluation

Dr G. Watters on behalf of the Global Community Water Supply Programme at WHO Headquarters presented the major outcomes of the Decade Programme, stressing that in spite of the fact that the levels of services originally envisaged were not attained, the Decade Programme stimulated the identification of priorities for the development of the sector, developed coordination mechanisms at country, intercountry and regional levels, and strengthened national institutional capabilities.

He recommended that the momentum created by the Decade process should be maintained and reinforced in order to reach satisfactory levels of services, if possible before the turn of the century.

Mr O. Espinoza, WHO/EURO, presented a comparative analysis of the situation of water and sanitation services in the European Region at the beginning and the end of the Decade. The results indicate that with regard to drinking-water, there are people with inadequate services in some urban fringes only, whereas in rural areas, the percentage of unserved population is still significant in some countries. With regard to disposal of wastewater, major efforts are still necessary in order to provide many urban sectors with appropriate sewerage networks and efficient treatment facilities. For rural areas, although the evaluation of results proved to be more difficult than expected, the information collected confirms that substantial efforts are required in order to improve the sanitary conditions in these areas.

Mr X. Bonnefoy, representing NANC.I.E., a WHO Collaborating Centre in France, presented an analysis of answers received to a questionnaire which had been developed by NANC.I.E.. The object of the questionnaire was to form a basis for evaluating the situation of the Water and Sanitation Programmes in Europe. The questionnaire had been sent to 29 Member States, of which 12 had submitted a completed questionnaire in time for the evaluation.

A preliminary assessment showed the following:

- (a) Some countries experienced difficulties in collecting relevant information and suggested that some of the questions be reconsidered.
- (b) Some participants found that the questionnaire was a useful evaluation tool which would result in improved intersectoral cooperation within countries and promote collection of data at national level.
- (c) The major shortcomings encountered refer to the inability to put into application the existing legislation for the protection of the aquatic environment, and to the prices of the services provided which appeared very often to be below production cost.

A selected group of countries presented their own assessment of Decade results together with their proposed national strategies and policies for the Post-Water Decade Era.

### 3. Project proposals for external support

A group of selected countries presented proposals for the development of projects financially supported by ESAs (see Annex 2: Project Proposals per Country).

In the absence of ESA representatives, the proposals were examined in plenary by all the participants and by the UN Agency representatives present at the Consultation. The project proposals were found technically sound and relevant to the needs and priorities of the individual countries. However, the format of presentation and the proposed financing plans should be reviewed before submission to the ESAs.

UNDP and WHO are willing not only to assist the countries in reviewing the proposals but also in ensuring a proper follow-up with the ESAs.

### 4. Strategy

The participants were divided into three working groups with the object of elaborating a set of recommendations for the development of a Post-Water Decade Strategy in Europe (see Annex 3: Terms of Reference for Working Groups).

The working groups concluded as follows.

#### 4.1 Need for a European Strategy

A common European strategy for the Post-Decade period is necessary to build on the momentum generated during the IDWSSD and ensure sustained commitment to the sector through the 1990s.

The common strategy will initiate and promote action both at the regional (European) level and at diverse administrative levels of its individual states.

A Global strategy, of which the Regional strategy will form a component, should provide a framework of reference toward which national strategies should be harmonized according to specific requirements resulting from different national characteristics.

The national strategies should then form the basis of action plans which are elements of the overall national development plans.

The general objectives of the common European strategy for community water supply and sanitation for the Post-Decade period/era can be listed as follows: water and sanitation development should be oriented towards the achievement of integrated management of water resources stressing its perspective of environmental protection and health. This orientation must be undertaken in the context of its overall goal of Health for All through Primary Health Care Approaches.

This approach would reflect the fundamental elements of the Action Plan adopted by the United Nations Water Conference, Mar del Plata, Argentina, 1977.

The new European strategy requires full endorsement by national governments and by the UN system in order to ensure the political commitment necessary to sustain sector development efforts.

At the national level this endorsement should be concluded through those ministries and departments with responsibility for the sector, which implies the establishment of effective inter-departmental and inter-ministerial coordination.

To ensure international endorsement WHO should take the appropriate action through its governing bodies and the other established mechanisms within the UN system.

#### 4.2 Financial policies

In the European Region, the most important source of financing for water supply and sanitation will be based on the resources of the countries within the Region, with cooperation and funding taking different forms according to the particular geo-political and development situation in each country.

As a general rule, investment should be based on cost-recovery for the services provided which implies sound management of systems.

The price of water must be established taking into account both capital and recurrent costs. Where appropriate the cost of sanitation services may be incorporated into the charges levied for water. Existing studies such as the OECD Manual on Water Pricing and the recent WHO Guidelines on Cost-Recovery are among the useful references for the establishment of appropriate policies.

International financing institutions should include in their criteria for project support the objective of meeting the country level objectives and the assurance that cost-recovery policies are being, or are to be, implemented, and provision is made for adequate operation and maintenance.

The UN organizations should pursue their role as agencies promoting technology transfer and pre-investment activities and adopt a more regulatory and management role for water supply and sanitation projects using their limited financial resources as seed money to produce a catalytic effect.

In the context of East/West and North/South cooperation the UN system should act as a reference point for the identification of countries requiring various types of assistance and those willing to provide it. The potential

has already been identified for cooperation between the countries of Western Europe and the rapidly changing countries of Eastern Europe in tackling their water and environmental management challenges. This must form a vital element of the Post-Decade Water Supply and Sanitation Strategy for Europe.

The UN system through the mechanisms developed during the IDWSSD should also provide a forum to facilitate the continuous monitoring and promotion of external sector support (bilateral and multilateral).

#### 4.3 Monitoring

- (a) The existing situation needs to be evaluated as a prelude to the Post-Decade era. A starting point can be the establishment of attainable and explicitly stated levels of service by countries towards which they can strive and which can be monitored in quantifiable terms. From examination of progress towards these targets developed on grounds of statistical methods and criteria, trends will be able to be identified and plans appropriately adjusted.
- (b) The results of the survey carried out through the questionnaire developed by WHO need to be carefully evaluated in the light of the above defined criteria. If found appropriate a fresh survey should then be prepared and periodically circulated to the national focal points in order to develop a manageable information system.

#### 4.4 Elements of the Strategy

Below are listed recommended elements of the strategy.

The nature of the identified problems varies according to socioeconomic conditions. In some countries there is still considerable investment required for the provision of water supply and sanitation facilities to meet the desired service level, while in others the problems lie in the need to optimize, refine and rehabilitate existing systems.

A review of the challenges identified by the working groups, both qualitative and quantitative allowed the identification of the following issues for inclusion in the strategy.

- (a) Protection of the aquatic environment through integrated management of water resources with particular attention to industrial and toxic hazardous wastes.
- (b) Investment and technology transfer to countries where systems are less developed.
- (c) Manpower development through training of staff at all levels for design, administration, and operation and maintenance functions.
- (d) Improved operation and maintenance through adequate provision in terms of planning, and resources.
- (e) Establishment of water supply and sanitation management information and statistical systems congruent with the established systems of national statistics.

- (f) Establishment of Regional reference laboratories to provide technical support for the harmonization of water quality control procedures and hence ensure the comparability of results.

## 5. Recommendations

To support the activities addressing the above key issues the following recommendations are addressed to the countries of Europe, the UN system and the external support community.

### 5.1 Recommendations to individual countries

- (a) Countries should define explicit and attainable levels of service which are appropriate under their specific circumstances, meeting primary health requirements and compatible with the sustainable utilization of water resources.
- (b) National water supply and sanitation information systems should be reviewed and strengthened to provide a rational basis for planning and evaluating progress in programmes implementation.
- (c) National programmes should be developed and implemented aiming at tackling clearly defined problems.
- (d) Higher priority than previously should be given to the development and improvement of wastewater disposal and treatment facilities since in general these are less developed than water services, are essential for the problems of water resources and are important elements of environmental protection.
- (e) Training programmes should be developed to provide the necessary qualified personnel to design, operate and maintain the systems. This will require the investigation of training needs and facilities both formal and on-job, and will be facilitated by the provision of documentation and materials in national languages. Training is an area with potential for collaboration among countries (TCDC) through sharing of facilities and materials.
- (f) Expanding the surveillance of water supply networks, and particularly the quality of the water at the consumer to identify and counteract problems of secondary contamination and to facilitate the planning of network cleaning and rehabilitation.
- (g) Improve and extend the surveillance of water quality in small and individual water supply systems to safeguard the health of the population in small communities and remote areas.
- (h) Generally improved water quality surveillance in catchment areas, during treatment and distribution and throughout the waste treatment, discharge and/or reuse cycle.
- (i) Improve water distribution management through rationalization and interconnection of systems and pressure zones to avoid wastage and local shortages and reduce the occurrences of intermittent supply.

- (j) Undertake applied technology research directed towards tackling identified problems, increasing systems reliability and reducing costs. Among the issues of particular concern are disinfection in the light of secondary pollution and the associated health risks, reuse of wastewaters and technologies within industry aimed at reductions in water consumption, improvement in distribution system efficiency through scaling and corrosion reduction and overall systems rehabilitation. To ensure the widest dissemination of results, mechanisms should be developed for technology transfer within and among countries.
- (k) Implement water policies aimed at reducing the wastage of water with a view to funding investments from savings. Such policies would include metering, incentives/penalties, and appropriate tariff studies.
- (l) Improve and harmonize methods of technological testing and epidemiological surveying, and review and update as appropriate systems of raw water characterization.

## 5.2 Recommendations to groups of countries (intercountry)

At Regional or Intercountry level, groups of countries should collaborate in:

- (a) Providing mutual support through approaches and agreements such as the TCDC and exchanging experience and knowledge through appropriate training programmes;
- (b) Developing joint programmes related to the management and protection of shared water resources and transboundary rivers;
- (c) Utilizing their acquired knowledge and skills to support the development of water supply and sanitation programmes in the less developed countries of the other regions of the world.

## 5.3 Recommendations to the International Community

- (a) The UN system should find ways of strengthening its support to the sector including increased support from funding agencies such as the UNDP and technical support through agencies such as WHO.
- (b) WHO together with other UN agencies involved in the Programme should strengthen their position as a forum to facilitate dialogue among countries, promote exchange of experience and monitor and report on sector developments.
- (c) With reference to monitoring (Section 4.3b), WHO should reassess its philosophy and methodology in the light of the experience gained in data collection and the comments received from individual national focal points with a view to producing a pragmatic system regarding national needs and regional assessment requirements.
- (d) WHO together with other UN Agencies involved in the Programme should establish an inventory of reference laboratories, training centres and available centres of expertise, and continuously update this information and disseminate it.



- (e) The national water supply and sanitation focal points as extensions of WHO in their countries should receive support from the Organization in the execution of their role at the country level, to reinforce their capability to provide effective contacts, stimulate the sector nationally, and serve as an information source, as a contact for external support agencies and as a mechanism for exchange of experience among/between countries.
- (f) The external support agencies (ESAs) should be approached in order to ascertain whether their criteria for project support are still appropriate to meet existing needs in the rapidly changing new political context of this part of the world.