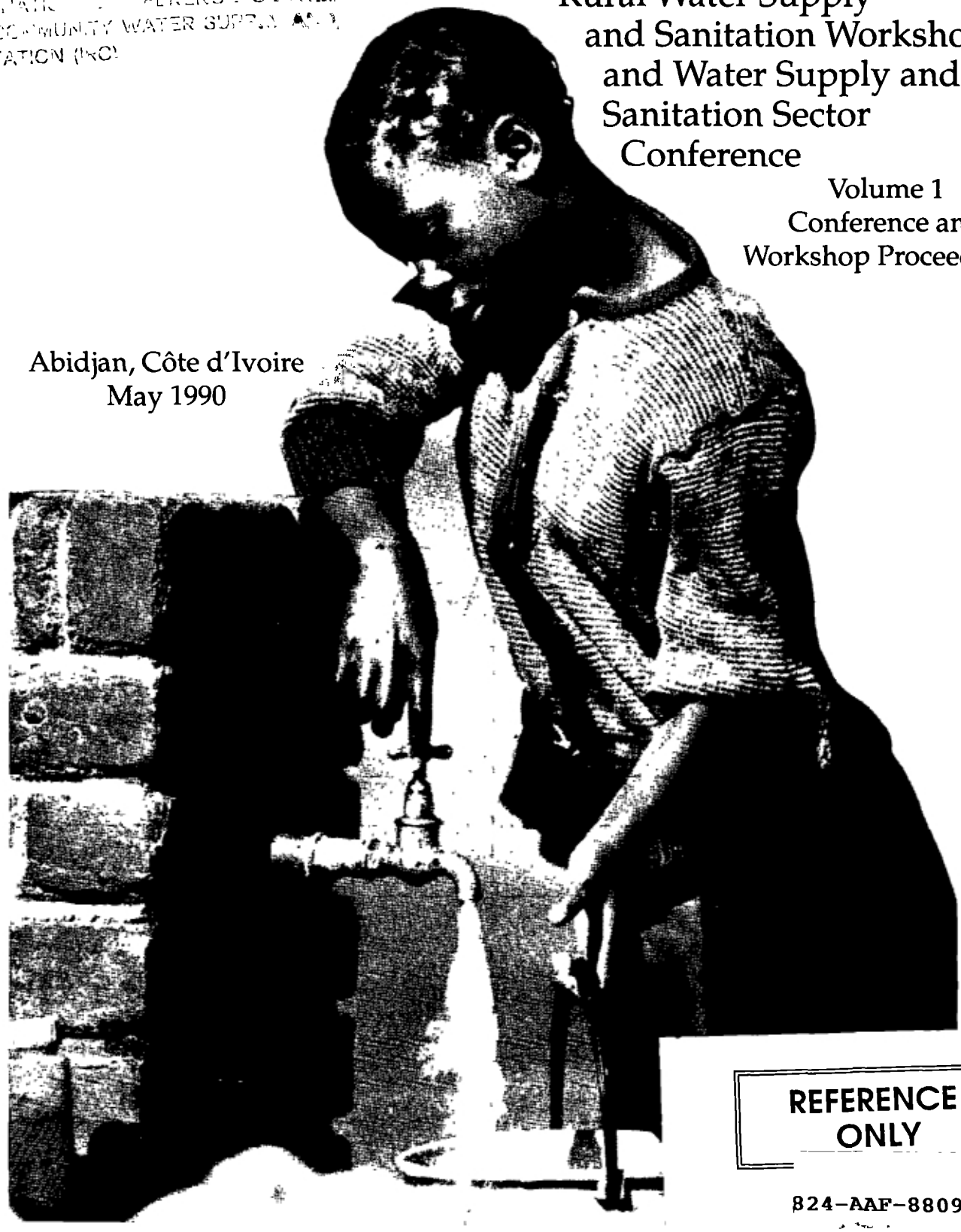
Water Supply and Sanitation in Africa: Laying the Foundation for the 1990s

Proceedings of the All Africa Rural Water Supply and Sanitation Workshop and Water Supply and Sanitation Sector Conference

Volume 1
Conference and Workshop Proceedings



Abidjan, Côte d'Ivoire
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WATER SUPPLY AND SANITATION IN AFRICA:

LAYING THE FOUNDATION FOR THE 1990s

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All Africa Rural Water Supply and Sanitation Workshop
and
Water Supply and Sanitation Sector Conference

Abidjan, Côte d'Ivoire
May 7-11, 1990

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LIST OF ABBREVIATIONS

ADB	African Development Bank
CESI	Country External Support Information
CIEH	Comité Inter-Africain d'Etudes Hydrauliques
CREPA	Centre régional pour l'eau potable et l'assainissement à faible coût
ECA	Economic Commission for Africa
ESA	External Support Agency
GDP	Gross Domestic Product
IDWSSD	International Drinking Water Supply and Sanitation Decade
IRC	International Reference Centre for Community Water Supply and Sanitation
ITN	International Training Network for water and waste management
LTPS	Long-Term Perspective Study (Sub-Sahara Africa: From Crisis to Sustainable Growth)
NGO	Nongovernmental Organization
PROWWESS	Promotion of the Role of Women in Water and Environmental Sanitation Services
RWS	Rural Water Supply
RWSG	Regional Water and Sanitation Group
RWSS	Rural Water Supply and Sanitation
SODECI	Société de Distribution d'Eau de Côte d'Ivoire
SSA	Sub-Saharan Africa
UADE	Union Africaine des Distributeurs d'Eau
UAWS	Union of African Water Suppliers
UN	United Nations
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
USAID/WASH	United States Agency for International Development/Water and Sanitation for Health
VIP	Ventilated Improved Pit latrine
WB	World Bank
WHO	World Health Organization
WSS	Water Supply and Sanitation

TABLE OF CONTENTS

VOLUME 1

POSITION PAPERS

FOREWORD

Africa is in economic crisis, a crisis that is reflected in the needs of her people and in the challenges to be faced in achieving sustainable development. The poor in Africa lack basic services whose absence would be inconceivable to those of us who enjoy them. Clean water close to home and decent sanitation facilities are primary examples of such basic services. At the end of the International Drinking Water Supply and Sanitation Decade in 1990, as many people are unserved with water supply and sanitation as there were at the start of the Decade. Two out of three of Africa's rural population walk - often long distances - to unprotected water sources to collect and drink polluted water. Over 300 million people living in Africa's towns and villages have no hygienic means of disposing of human or domestic waste. Countries with low coverage of water and sanitation services risk having many unhealthy citizens, unproductive industries and a polluted environment, exacerbating poverty and severely undermining potential for sustainable economic development.

This document reports on a regional policy meeting on the water and sanitation sector, held in Abidjan, Cote d'Ivoire, May 7 -11, 1990. Delegates from 45 African countries assembled in Abidjan to address the challenges facing the sector. These high-level government policy makers and sector specialists, observed by representatives from 33 external support agencies (ESAs) and non-governmental organizations, exchanged experiences and probed deeply to find ways to resolve complex problems. They met first in a workshop to address rural water supply and sanitation issues and then in conference to take a broader overview of the whole sector. This was a unique forum for the water and sanitation sector, bringing together almost all the major agencies active on the continent in an intensive atmosphere of debate.

The meeting demonstrated the richness of Africa's experience, with the lessons learned in the past ten years serving to provide the foundation for strategies for the 1990s. One key conclusion of the meeting was the need for a change in the roles of central and local governments, the formal and informal private sector and communities themselves in the provision of water and sanitation services. Most important, the meeting recommended that the role of central government should shift from that of provider of services to that of promoter and facilitator, creating the enabling environment within which local organizations can shoulder the burden of service provision. This changing role will need a major commitment from governments, to free the initiative and to build the capacity of local agencies and community organisations to develop and manage systems. This conclusion is as valid for a community association managing a simple village handpump as it is for an urban utility providing piped water supply and sewerage services.

The meeting concluded that women, the primary users of water, must be particular targets for training and participation; they have already demonstrated in projects across Africa their capacity to play leading roles in the provision of services to poor urban and rural communities. A futher conclusion reached by the meeting was that service levels should reflect demand and that higher levels of cost sharing, particularly of operation and maintenance costs, must be progressively adopted to ensure sustainability and efficient allocation of resources. It was agreed that there had been significant technological developments in Africa during the 1980s, well adapted to local conditions. These advances create considerable potential for further sector development, which will depend on the ability of policy makers to create the institutional and financial environments conducive to the development of sustainable programs. These efforts will need the coordinated support of the international community.

The Abidjan meetings were an excellent example of international collaboration. The Workshop and Conference were co-sponsored by the African Development Bank (ADB), the United Nations Development Program (UNDP) and the World

Bank (WB), with the support of the bilateral agencies of Canada, Denmark, Finland, Germany, Kuwait, Norway, Switzerland, Sweden and the USA, coordinated through the ESA Collaborative Council. The joint UNDP-WB Water and Sanitation Program provided substantive support throughout. Although the World Bank was charged with preparing this document, we must place on record that this effort has been an extraordinary partnership of African governments and the international community, with leadership by the African Development Bank, and firm commitment of UNDP's Regional Bureau for Africa. This partnership will continue through the Regional Orientation Committee, born out of this meeting to be an African forum for sectoral debate and guidance, under the auspices of the African Development Bank.

The African Conference Statement: Abidian Accord was sent to the Global Meeting in New Delhi, India in September, 1990. The African consensus formed a major input to the conclusions of the New Delhi Meeting, which were endorsed by the UN General Assembly in their Resolution A/45/181 of 3 December 1990.

While the challenge of meeting the needs of Africa's poor for water and sanitation is tremendous, it can be better tackled with the foundations laid and the partnerships forged at the Abidjan Workshop and Conference in May 1990.

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PREFACE

During the International Drinking Water Supply and Sanitation Decade substantial progress was made towards meeting the needs of Africa's population for water supply and sanitation services. Crucial sectoral issues such as the institutional arrangements for the provision of services, community management, cost-recovery, human resource development and international coordination and cooperation were grappled with throughout the continent. While the absolute numbers of people served rose appreciably, the percentage of the population covered was unable to keep pace with rapid population growth. Two thirds of the rural population and one quarter of the urban population do not have access to safe water supply. Even more do not have satisfactory sanitation arrangements. These figures reveal the imperative for developing more appropriate and comprehensive sectoral strategies and policies.

A total of 101 delegates, all high-level government policy makers and sector specialists, from 45 African countries, observed by representatives from 33 external support agencies (ESAs) and non-governmental organizations (NGOs), assembled in Abidjan, Cote d'Ivoire for five days May 7-11, 1990, to address the challenges facing the sector. They participated first in a three day workshop devoted to rural water supply and sanitation (RWSS) issues and then in a two day conference encompassing the entire sector.

The Workshop objectives were to present and share experiences in RWSS in SSA, to examine different approaches and policy options for improved and accelerated sector development, to identify common grounds for collaborative efforts, and for the delegates themselves to develop pragmatic recommendations for the implementation of approppriate country-level strategies.

Three topics were presented and discussed in the plenary sessions on the first day of the Workshop: (i) the contributions of RWSS to rural development; (ii) the role of communities and women in RWSS; and (iii) technology development. Countries were organized into five working groups, with discussions in either French (three groups) or English (two groups) of the following topics: (i) institutional issues; (ii) financial resource management; and (iii) rethinking sector management. The five groups appointed their own chairman and rapporteur from the African delegates; ESA representatives sat in on group discussions as observers. Group reports were presented in plenary sessions on the third day, after which they were consolidated into a Summary Working Group Report.

For the Conference, draft guidelines for developing country strategies for the 1990s were introduced in the plenary session. The same five working groups were retained to deliberate on the draft and to make recommendations for changes. Groups reported on the final day, during which it was agreed that the five working group chairmen should reconvene to finalize the guidelines which they did in August. The *African Conference Statement: Abidjan Accord*, together with finalized guidelines and the Summary Workshop Working Group Report, constituted Africa's contribution to the Global Consultation held in New Delhi, India, in September 1990.

This report presents the proceedings and conclusions of both the Workshop and Conference. The report is in two volumes: Volume 1 contains the Summary of Proceedings of both the Workshop and the Conference. Volume 1 is produced separately in both English and French. Volume 2 contains all the Country Statements and contributions by ESAs; they have been reproduced in their original language of submission but summarized in English (for French Country Statements) or in French (for English Country Statements).

The Workshop was organized by the Infrastructure Division of the Africa Technical Department of the World Bank (WB) and the UNDP-WB Water and Sanitation Program in cooperation with the African Development Bank (ADB), the United Nations Development Program and the Collaborative Council. The Conference was organized by the Infrastructure and Industry Development Policy Division of the Central Policy Department of ADB in cooperation with WB, UNDP, and the

Collaborative Council. The contribution of the UNDP was especially generous, and significantly assisted in the preparation of the Workshop and Conference and the publication of this report.

In addition, the following organizations, without whose financial contributions the Workshop and Conference would not have taken place, are sincerely acknowledged:

- Canada International Development Agency
- Commonwealth Science Council
- Danish International Development Agency
- Directorate General for International Cooperation in the Netherlands
- Finnish International Development Agency
- The Government of France
- German Agency for Technical Cooperation
- Kuwait Fund for Arab Economic Development
- Norwegian Agency for International Development
- Swiss Development Corporation
- Swedish International Development Authority
- United States Agency for International Development

The Workshop and Conference were the results of the efforts of a large number of people, including many staff of the ADB, the WB, the joint UNDP-WB Water and Sanitation Program and UNDP. A full list would be too numerous to mention here. The work of the many authors, presenters and resource persons, whose names are listed in the Workshop and Conference programs within this document, is gratefully acknowledged. The main organisers of the Workshop and Conference were A. Mengesha, B. Hadjadj and Daniel Gubler (consultant) from the ADB, and Randolph Andersen and Sylvie Brebion (consultant) from the WB. Alexander Rotival, Chairman of the ESA Collaborative Council, and Suzanne Drouilh from UNDP led the resource mobilization efforts. David Grey coordinated the substantive and administrative inputs of the UNDP-WB Program. The Workshop was skilfully chaired by Roger Chaufournier (former Africa Region Vice President of the World Bank), ably assisted by Letitia Obeng of the UNDP-WB Program. The Conference was chaired by F. Loumes and A. Mengesha of the ADB. The delegates themselves were responsible for the success of the Workshop and Conference, driving them to consensus and strong conclusions. In this task, they were led by their elected working group chairmen Jomo Gomes Cardoso of Guinea Bissau, Komi Denyo Nenonene of Togo, Kadima Mwamba of Zaire, Sandile Ceko of Swaziland and Birru Ittisa of Ethiopia. The working group chairmen formed an advisory committee to the chairmen of the Workshop and Conference.

This publication was produced by the World Bank. The production involved the efforts of many staff from the infrastructure divisions of the World Bank's Africa Region, and was managed by Randolph Andersen and David Grey. Special acknowledgements go to Sylvie Brebion who coordinated the editing, translation and production, and to Jane Fahy, Lynn Foden, Pamela Hall, Michele Moriarty and Luisa Victorio who provided major editorial and secretarial inputs.

LIST OF WORKING GROUPS

Group 1

Algeria, Burkina Faso, Cape Verde, Chad, Guinea Bissau, Mali, Mauritania, Morocco, Niger, Senegal, Tunisia

Group 2

Benin, Cameroon, Central African Republic, Congo, Côte d'Ivoire, Equatorial Guinea, Gabon, Guinea, Sao Tome & Principe, Togo

Group 3

Angola, Burundi, Comoros, Djibouti, Madagascar, Rwanda, Seychelles*, Zaire

Group 4

Botswana, Lesotho, Malawi, Mauritius, Mozambique, Namibia*, Swaziland, Tanzania, Zambia, Zimbabwe

Group 5

Egypt*, Ethiopia, The Gambia, Ghana, Kenya, Liberia*, Libya*, Nigeria, Sierra Leone, Somalia*, Sudan, Uganda

*not represented

N.B.: French was the language of discussion for Groups 1, 2 and 3; English was spoken in Groups 4 and 5.

AFRICAN CONFERENCE STATEMENT:

ABIDJAN ACCORD

AFRICAN CONFERENCE STATEMENT: ABIDJAN ACCORD

Delegates from 45 African countries met in Abidjan, Côte d'Ivoire on May 10-11, 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 is entitled *Guidelines for the Development of Country Strategies for the 1990s*. Prior to the Conference, the delegates held a three-day Workshop on rural water supply and sanitaion issues, the conclusions of which are included in this volume.

The International Drinking Water Supply and Sanitation Decade (1981-1990) has provided sector policymakers 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* 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[1] was set up to oversee the final drafting of the *Guidelines*. Following the recommendations of the Conference, the African Development Bank has been requested to organize a Regional Orientaion Committee, which will meet periodically, to review implementation of water supply and sanitation strategies in Africa in the coming years, and recommend any necessary adjustments 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 programs.

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 programs in peri-urban 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 programs. Water supply and sanitation programs will be developed in an integrated way, and will be planned in coordination with programs 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 water-short 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 programs in applied research.

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 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.

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[1]The Chairmen of the five Working Groups who developed the Consultation working paper into an agreed strategy are: Messrs. Cardoso of Guinea Bissau, Nenonene of Togo, Kadima Mwamba of Zaire, Ceko of Swaziland, and Birru Ittisa of Ethiopia.

GUIDELINES FOR THE DEVELOPMENT OF COUNTRY STRATEGIES FOR THE 1990s*

SUMMARY

The Decade has provided sector policymakers 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

- 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, external support agencies [ESAs] may advise on the formulation of this strategy).

- 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.

- 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.

- Access to capital market and private savings by the sector should be promoted through the creation of appropriate financial intermediaries.

- 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.

- 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.

- 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.

- 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.

- 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.

- The scope of sector services should include water supply, sanitation, and hygiene education, with rainwater drainage and solid waste removal

* The Guidelines were annexed to the Conference Statement: Abidjan Accord as part of the presentation in New Delhi in September 1990.

understood to be integral part of any comprehensive sanitation strategy.

- The African Development Bank (ADB) 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 to recommend adjustment to the *Strategy Guidelines*, as necessary.

I. INTRODUCTION

Background

The 1980s were declared the International Drinking Water Supply and Sanitation Decade (IDWSSD) by the United Nations (UN), 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.

The new methods include the use of a greater variety of technologies which are more responsive to the users' socioeconomic 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.

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

> *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.*

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: (i) briefly discusses issues; (ii) explains the process of program development; and (iii) suggests policies and strategies. The paper then concludes with suggestions on how international collaboration can contribute to a country's development of the sector.

A draft of this paper was presented by ADB 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.

II. SECTOR PLANNING AND PROGRAMMING

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

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

To achieve the objectives, policies should provide for:

- *Community Participation* in rural and peri-urban 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

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: (i) a Statement of Position (Position Paper); (ii) Discussion of Issues (Issues Paper); (iii) Strategy Formulation; and (iv) 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

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 non-governmental organizations (NGOs)*
- *Involvement of ESAs*

The Issues Paper

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 supply and sanitation (WSS) sector is extraordinarily complex because it affects developmental and human behavior issues and in turn is affected by them. Some of the principle issues are discussed below.

Institutional Development

- 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.

- The *role of the government* should shift from that of a provider to that of a promoter.

- *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 peri-urban districts.

- *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.

- *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), NGOs, 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.

- In rural and peri-urban areas, many responsibilities can be transferred to *NGOs*; these are often better equipped to perform outreach and grassroots-level tasks.

Resource Mobilization

- 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.

- 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.

- *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 percent tell both user and financier of incompetent operations.

- *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 WSS 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.

- *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

- 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 projects should include income-generating activities. Moreover, rural banks and credit unions should be developed to facilitate lending to communities for sector projects.

- *Financial Intermediaries for Investment Funds* will assume greater importance with increasing decentralization of the sector. Decentralization should therefore provide for the establishment of an institution to channel funds to sector institutions from government and external donors.

Financial and Economic Benefits

- Financial and Economic Benefits must justify project investments in any sector. The WSS 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

- Improved Health is an important benefit of adequate WSS 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 WSS. A recent review of literature by the World Health Organization (WHO) revealed that such a combination can reduce diarrhea morbidity by as much as 50 percent. *Linkages* therefore have 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

- 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 peri-urban areas, women's role in the sector's development 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

- 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 national centers in the countries of the Region. Technology choices should take into consideration the advantages of standardization; this should be recognized by ESAs.

Environmental Impacts

- Environmental Impacts caused by inadequate WSS are particularly serious for inhabitants of peri-urban areas, although they also affect, but to a lesser degree, the entire urban and adjacent rural population. For the peri-urban 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

- 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 WSS to the greatest number of people at least cost.

Water Resource Development

- Water Resource Development, the allocation and efficient use of water resources, is an increasingly important issue for WSS 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

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 Management* of peri-urban and rural WSS facilities is required to achieve long-term sustainability.

- *Initial Activities* in the development of peri-urban and rural WSS 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 peri-urban WSS 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 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 decisionmakers can learn from experience elsewhere and so improve their own sector's performance. At national level, 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 allocation of technical information and its dissemination.

- *Collaboration with ESAs* should follow established government policies, priorities and strategies.

- *Sensitization of Communities* to the needs for and benefits of improved water supply, sanitation and hygiene education is an important prerequisite of program planning based on effective demand.

- *A National Action Plan* should be formulated, which reflects not just the perceived needs of the WSS sector, but also other sector priorities, and the links between sectors.

The Action Plan

The plan prescribes all those actions required to implement the strategy, and should include: (i) government approvals; and (ii) implementation activities, with a schedule for their completion.

The Action Plan should result in:

- *Objectives, and policies for their implementation, which will result in the provision of WSS 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.).*

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.

III. COLLABORATION AND THE ROLE OF EXTERNAL SUPPORT AGENCIES

The Role of ESAs

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

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.

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

Each ESA has objectives set by its government or governing body and strategies to implement them. Objectives may emphasize specific sub-sectors, 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

During the various round-table 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 WHO booklet, "Global Sector Concepts for Water Supply and Sanitation" (March 1987).

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.

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 exists at country level:

- *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 WSS 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.

- *Health for All by the Year 2000* is a WHO program which includes WSS in its primary health care activities. This program could promote hygiene education in water and sanitation sector expansion programs.

- *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.

- *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

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 centers should be made easy for governments.

Regional Cooperation and the Collaborative Council

Regional Cooperation

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 policymakers to meet on a regular basis.

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.

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: (i) development and strengthening of the management and operation institutions; (ii) selection of the most appropriate and effective projects; and (iii) the systematic extension of WSS services to the most deserving section of the population.

Regional Orientation Committee

In order to strengthen regional consultation and cooperation for the development of the sector, the Conference request 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 WSS 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 programs undertaken at regional and sub-regional levels
- to liaise with the global consultation bodies, in particular with the Collaborative Council and similar bodies

Collaborative Council

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.

RURAL WATER SUPPLY AND SANITATION WORKSHOP
SUMMARY OF WORKING GROUP REPORTS*

Accelerated provision of sustainable water supply and sanitation services in the 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 rural water supply and sanitation (RWSS) services to being mainly promoters, 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 a firm political commitment to bring widespread and sustainable services to the rural population within a specified and achievable time frame.

Main Findings

Many governments in Africa are presently providers of RWSS services. In the 1990s, the primary role of government should shift from provider to promoter or facilitator. The objective should be to create an enabling environment in which sustainable services can be provided, taking maximum advantage of the capabilities of central and local government, the formal and informal sector, non-governmental organizations (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 levels.

Today in Africa, costs of RWSS 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.

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 (ESAs) should be defined and coordinated within this framework. Few countries in Africa presently have such a framework.

Institutions

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 governments 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 an enabling environment for sector development, governments' promotional role will also include such matters as mobilization of finance, establishment of appropriate policies and legislation, coordination of support agencies, development of human resources, planning and standardization, and monitoring and evaluation.

The process of decentralization requires strengthening the capacity of local governments and of community organizations to manage simple systems. Women's organizations can play a particularly important role in the management of services. It may, however, be difficult to achieve community management in the short term; this should 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.

The promotional role of government will also include supporting the formal and informal private sector through training, the provision of incentives and the 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.

* This Summary was annexed to the Conference Statement: Abidjan Accord as part of the presentation in New Delhi, September 1990.

Finance and Resource Mobilization

A 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.

There is general agreement that the principles of cost recovery linked to effective demand should be progressively adopted in the delivery of RWSS 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.

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 ESAs. Demand for services will be reflected by community contributions to these capital costs, either in cash or in kind. Subsidies should not be used indiscriminately, but to ensure the widespread provision of basic services and to meet the costs of promotion activities of government. Governments and ESAs should ensure that sufficient resources are devoted to outreach activities, sensitization, training, etc.

Beneficiaries should progressively assume nearly 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 channeled to central government treasuries. Recurrent cost recovery may also be made more feasible if income-generating activities are linked to RWSS interventions.

Accelerated service coverage in the 1990s can be achieved by reducing unit costs and mobilizing additional resources. Cost 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

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 that are not willing to conform to established policies and strategies.

In the development of sector strategies and the 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.

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.

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

Action

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

PART I

RURAL WATER SUPPLY AND SANITATION

WORKSHOP

May 7-9, 1990

WORKSHOP PROGRAM[1]

Monday, May 7, 1990

Time	Session	Topic	Speakers
9:00 am	1	**Introduction**	
		• Opening Ceremony	Mr. F. Lounes, Vice President, West Africa Operations, ADB
		• Introductory Remarks	Mr. Jean Doyen, Division Chief, WB
		• Welcoming Statement	Mr. Bamba Vamoussa, Minister of Public Works, Transportation, Construction and Urbanism, Côte d'Ivoire
10:30 am		Coffee Break	
		• Workshop Framework	Mr. Randolph Andersen, Principal Financial Analyst, WB
11:00 am	2a	**Contribution of Rural Water Supply and Sanitation to Rural Development**	Prof. Makanjuola, Director, DFRRI, Nigeria
		Presentation and Discussion	Panel: Mr. Lars Rasmusson, WB
	2b	**The Role of Women in Rural Water Water Supply and Sanitation** Presentation and Discussion	Ms. A. Traore, PROWWESS
1:00 pm		Lunch	
2:30 pm	3	**Technology Development** Presentation and Discussion	Mr. R. Roche, WB/RWSG Panel: Mr. J. Mvududu, Zimbabwe Mr. B. Wolde-Gabrielle, WB/RWSG
4:00 pm		Coffee Break	
4:30 pm		Meeting of Working Groups; Introduction and Appointment of Chairmen and Rapporteurs	
6:00 pm		Meeting of Chairmen	

[1]Mr. Roger Chaufournier, former Vice President, World Bank, and Dr. Letitia Obeng, UNDP/WB, served as Chairman and co-Chairperson respectively for the plenary sessions of the Workshop.

Tuesday, May 8, 1990

Time	Session	Topic	Group	Speakers
9:00 am	4	**Institutional Issues** Presentation and Discussion in Five Working Groups	1	Mr. F. Ben Slimane, WB
			2	Mr. G. Tschannerl, WB
			3	Mr. D. Gubler, ADB
			4	Mr. K. Khotle, ADB
			5	Mr. D. Grey, WB/UNDP
10:30 am		Coffee Break		
11:00 am	4	**Institutional Issues** (continued)		
11:30 pm	5	**Financial Resource Mobilization** Presentation and Discussion in Five Working Groups	1	Mr. A. Lahlou, Morocco
			2	Ms. P. Boerma, WB/UNDP
			3	Mr. L. Laugeri, WHO
			4	Mr. H. Garn, WB/UNDP
			5	Mr. U. Mbanefo, WB/RWSG
12:30		Lunch		
2:00 pm	5	**Financial Resource Mobilization** (continued)		
3:30 pm		Coffee Break		
4:00 pm	6	**SODECI** - Presentation and Technical Visit		Mr. M. Zadi Kessy, PDG, SODECI

Wednesday, May 9, 1990

Time	Session	Topic		Speakers
			Group	
9:00 am	7	**Rethinking Sector Management**	1	Mr. A. Locussol, WB/RWSG
		Presentation and Discussion in	2	Mr. S. Diakite, ADB
		Five Working Groups	3	Mr. H. Le Masson, CCCE
			4	Mr. L. Rasmusson, WB
			5	Mr. K. Laubjerg, DANIDA
10:30 am		Coffee Break		
11:00 am		Discussion in Five Working Groups		
12:30 pm		Lunch		
				Rapporteurs
2:00 pm	8	**Summary of Discussions in**	1	Mr. Abdou Hassane, Niger
		Plenary Session	2	Mr. Emmanuel Hell, Cameroon
		• **Institutional Issues**		Mr. Kouadio Amani, C.D.I.
		• **Financial Resource Mobilization**	3	Mrs. Kambaba Bilonda, Zaire Mr. Mohamed Adamou, Comores
		• **Rethinking Sector Management**	4	Mr. Balisi Khupe, Botswana
			5	Mr. Momodou Sahor, The Gambia
3:30 pm		Coffee Break		
4:00 pm		**Discussion and Approval of Workshop Statement**		

OPENING ADDRESS

Mr. F. Lounes

Vice-President
Operations for Region II
African Development Bank

Your Excellency Mr. Minister, Honored Guests, Delegates, Ladies and Gentlemen:

The first Decade for the development of the water supply and sanitation (WSS) sector ends this year, and we meet here today to assess the situation and to reflect on the future.

First, however, in the name of the President of the African Development Bank (ADB), in the name of all of you, and in the name of the organizing institutions, I would like to thank Mr. Bamba Vamoussa, Minister of Public Works, Transportation, Construction and Urbanism in Côte d'Ivoire, for having honored us with his presence at the inauguration of this meeting.

I would next like to thank the delegates representing regional member states, bilateral and multilateral agencies, international institutions and non-governmental organizations for having responded to our invitation, as well as the agencies whose financing has made this meeting possible.

Finally, I would like to express my pleasure in the collaboration which was established between our institution, the World Bank (WB) and the United Nations Development Programme/World Health Organization Collaborative Council for organizing and making the preparations for this meeting. To all of you, I bid you welcome.

Drinking water is a basic human necessity, as is food, housing, education and health. The objective of the WSS sector is to meet this need, and, in so doing, to contribute to economic and social development by improving public health and the quality of life. For the past ten years all of us--governments and institutions alike--have joined together to attain this objective.

The provision of drinking water and sanitation facilities to the entire population seems to us to be a highly justified goal. However, the attainment of this objective during the Decade turned out to be unrealistic, both because of an underestimation of the financing required and an overestimation of the economic capacities of the African countries to mobilize such amounts. Indeed, according to some estimates, a minimum of approximately $50 billion would have been required to reach Africa's objective, and yet the actual mobilization of resources during the first two-thirds of the Decade did not exceed $5 billion.

During the Decade, Africa was in the midst of a difficult economic situation. Macroeconomic political reforms weighed heavily on the volume of public investments, and especially on social investments. Today, it is clear that changes must be made in favor of social investments in order to compensate structural adjustment costs borne by the most underprivileged segments of the population.

The rate of population growth has been high. The population explosion we have witnessed--growing at an average rate of six percent per year--is unprecedented in the history of mankind. The poor and newly urbanized population has exerted considerable pressure on the demand for public services. This was particularly evident in the WSS sector, and thus an already unfavorable situation continued to deteriorate.

The results of the Decade have varied greatly from country to country. Although certain countries have obtained appreciable results, overall, the approaches chosen and the measures taken have not been appropriate in view of the magnitude of the problem. Indeed, because of the lack of clearly

defined policies, criteria for selection and setting of priorities, the objectives of the WSS sector have not been realistic and have not always been supported by a rigorous mobilization of available resources.

In the rural areas--too often neglected--projects did not always consider the needs and the actual capacities of the targeted populations. Hence, the latter were subjected to solutions and techniques they were unable to master.

In urban areas, institutions created to provide drinking water to the populations and to raise the financial resources imperative for sector development were not able to fulfill their task. A large number of these enterprises lack financial and managerial autonomy. Their material, human and financial resources are limited, and they are dependent on government subsidies. Their management is often ineffective, thus resulting in expensive, erratic and mediocre service. And the first to be penalized by such service is the low-income peri-urban population. These deficiencies have had an impact not only on the quality of service, but also on the preparation of development plans, on the identification and preparation of projects, and on their implementation.

The lack of realistic policies has also weighed heavily on the results of the Decade. At the end of the Decade, the available provisional data shows that between 1980 and 1989, the overall urban coverage for water supply and for sanitation increased from 66 percent to 78 percent and from 54 percent to 75 percent respectively. On the other hand, in rural areas where the starting points were 22 percent for water supply and 20 percent for sanitation, at the end of the Decade coverage is at most 25 percent.

We must admit that the efforts of the donor agencies have been well below the sector's needs: only ten percent of agency financing has been allocated to investments in rural areas. We are of the opinion that governments and donor agencies should start to rectify this disparity. They should mobilize and allocate more funding to the rural water supply and sanitation sector in the future.

The significant disparity of coverage between rural and urban areas is one of the reasons for choosing the topic of the workshop (which has been organized by WB) on which you have been invited to reflect for these first three days. However, other considerations have also influenced the selection of this topic. First of all, rural populations represent 68 percent of Africa's total population. In addition, they are the poorest populations and the ones which have least benefited from the WSS sector investments made during the Decade. Moreover, the priority given to agricultural development implies the improvement of the standard of living in rural areas. If the long-term improvement in the standard of living in rural areas will result from agricultural development, the latter is itself conditioned by social development in rural areas.

We must admit that social investments have not been sufficient with regards to education and health. The development of the sector in rural areas provides the opportunity to partially compensate for lost time by the implementation of education and health programs as components of each water and sanitation project.

The recommendations of the workshop on rural areas will provide important tools for the two-day conference organized by ADB to discuss strategies for the development of the WSS sector, whether in rural, peri-urban or urban areas.

At ADB, we believe that while the Decade has not met its quantitative objectives, it has nevertheless facilitated a very wide exchange of views on the nature of the problems and alternative approaches to solve them. It is in light of more than 20 years of experience in financing development activities in the WSS sector, and important interventions during the past 10 years (resulting from the dialogue between regional member states during the Decade), that ADB has elaborated a *Sector Policy Document*.

Throughout this week you will be asked to confront and debate extremely important and complex issues in order to answer two decisive questions concerning sector development:

- To what extent can we provide drinking water and sanitation services to the greatest portion of the population?

- To what extent can we set up durable and self-maintained systems?

At the end of this Decade, the African countries and the institutions supporting their efforts for WSS sector development have accumulated considerable experience. A consensus is now taking shape which, we are convinced, your deliberations will confirm.

The objective of this meeting will be reached when, after these days of discussion, Africa will go to the conference in New Delhi with a unified view on the strategies to implement. It is because our needs are vital and important and because our resources are limited that the task which faces us is both stimulating and formidable, particularly given the economic situation in most of our countries.

Nevertheless, I am confident that by drawing on unbiased conclusions from our own experiences, and by depending above all on ourselves and our own resources, we will be able to start the 90s under the best of conditions. It is with these words of encouragement and hope that I would like to wish you much success in your work.

INTRODUCTORY REMARKS

RURAL WATER SUPPLY AND SANITATION: COMMON GROUNDS FOR A RENEWED EFFORT

Mr. Jean Doyen
Chief, Infrastructure Division
Africa Technical Department
The World Bank

Your Excellencies, Honorable Delegates, Ladies and Gentlemen:

First let me reassure you--this is not a keynote speech but instead a few introductory remarks. Modesty of purpose should be very fitting, because we at the World Bank (WB) have a lot to learn in the field of rural water supply and sanitation (RWSS). The main purpose for agreeing with the African Development Bank (ADB) and the United Nations Development Programme/the World Health Organization and the ESA Collaborative Council to hold this Workshop is to enable us to learn from one another.

Is there a better place to learn than here in Côte d'Ivoire, which through the program *Eau Toujours* has developed innovative approaches to the expansion of rural water services to rural communities? We will also have the opportunity to gain some familiarity with Côte d'Ivoire's urban water company, which stands as an example with its record of efficiency and continued expansion. While Côte d'Ivoire has a lot to offer to us professionally, we should also admit that the warm hospitality of the Ivoirien people, the beauty of the city of Abidjan, and, of course, the welcome and support of the Government are reasons enough to meet in Côte d'Ivoire.

Often we at WB are in the position of giving advice, but today we come to this meeting primarily with questions. Our purpose is to engage you--policymakers, technical experts and practitioners--in a search for common grounds for a renewed effort to support effective and sustainable water supply and sanitation for the rural populations of Sub-Saharan Africa (SSA).

The central question before us is how best to organize, fund and plan the expansion of RWSS services. Convenient and reliable access to adequate quantities of safe water has long been recognized as central to the improvement of living conditions of the rural populations. This has provided the *raison d'être* for the International Drinking Water Supply and Sanitation Decade (IDWSSD). The Decade, which is coming to a close this year, has drawn support from a large number of bilateral donors as well as agencies of the United Nations. The collaborative framework established to promote and coordinate the programs initiated under the Decade has provided the support that has made this meeting possible. We owe it our thanks.

The technological advances made under the Decade as well as the experience of governments, donors, nongovernmental organizations (NGOs) and communities provide the elements to chart the future directions for the subsector. While efforts and advances must be recognized, we must also face the fact that the overall impact has come short of expectations. A considerable proportion of systems built have fallen into disrepair and disuse. Coverage in many countries has hardly kept up with population growth. There are still over 150 million rural inhabitants in SSA with no access to safe water within a reasonable distance of their home. The counts of children dying of diarrheal diseases and of people infested with Guinea Worm keeps mounting.

The pace of progress must be accelerated. The question we put before you is: "How should this be done?" My purpose this morning is not to provide answers, but rather to clarify the question and to put it in context.

My next comments will be directed to broad trends effecting the macroeconomic and policy framework under which sectoral strategies and programs will have to unfold. On the economic front, the movement for policy reform and structural adjustment is gaining momentum. The gross domestic product (GDP) for the 30 countries committed to structural adjustment grew at a rate slightly above the average for SSA. Despite encouraging results, we should recognize that the resumption of growth is slower than anticipated. It has been hampered by structural constraints that can only be resolved over the longer period.

In order to improve its understanding of these constraints, WB has recently completed a study entitled *Sub-Saharan Africa: From Crisis to Sustainable Growth*,[1] which considers Africa's development with a long-term perspective. The study, referred to as the "Long-Term Perspective Study" or LTPS, attempts to characterize second-generation development strategies. Its central theme is that the achievement of sustainable growth with equity depends less on directions from the top than on the mobilization of skills, energies and resources from below.

- LTPS points out that overall economic policies will be determined by the deepening of adjustment to go beyond stabilization and tackle the transformation of production structures and the rationalization of the public sector. Adjustment programs would also have to include measures to alleviate related social impact, for without such measures, adjustment cannot be sustained.

- The improvement of the productivity of the agriculture sector is seen by LTPS as a central objective of second generation development strategies. To raise incomes and to improve overall nutrition and food security, the growth rate of agricultural production must double to about four percent a year. Agriculture accounts for 35 percent of GDP, 75 percent of employment and 40 percent of exports.

- The study points out that Africa's population growth--which is the highest in human history--is weighing heavily against efforts to raise income and improve standards of education and welfare.

- The study calls for investment in people--in their education and their health--and suggests that core programs for the development of human resources be doubled and supported by stable funding from governments as well as donors.

- Finally, LTPS underlines the importance of infrastructure services in creating an enabling environment for bottom-up development strategies.

Having reviewed key elements of the overall policy context under which sectoral programs will be developed, I propose that we now review briefly infrastructure policies for the 1990s. The overall situation of infrastructure in SSA is characterized by the following:

- First, one should recognize that Africa is still grossly underequipped by any measure of access to infrastructure services--be it kilometers of roads per inhabitant, or access to water, power or communication services.

- Second, many African countries, although underequipped, are overburdened by their infrastructure, i.e., they have tremendous difficulties in sustaining existing capacities through efficient operations and maintenance.

- The third point concerning infrastructure services in SSA is that they are generally costly. Their costs are generally higher than those prevailing in other regions. They are also high in terms of affordability if one compares them to income levels, especially in rural areas. The reasons for this are many. Let me mention: (i) low density of demand which precludes economies of scale; (ii) high investment costs; (iii) inefficient operations and poor maintenance; (iv) weak resource mobilization capabilities within the sector as well as in the economies as a whole; and in many cases one should add (v) inappropriate policies.

[1]To obtain a copy, contact the Publications Sales Unit, The World Bank, 1818 H Street, N.W., Washington, D.C. 20433, U.S.A.; reference: ISBN 0-8213-1349-5.

LTPS concludes that infrastructure expenditure will have to be stepped up to 20 percent of public investment, i.e., about 5 percent of GDP. The study points out the advantage of approaching infrastructure development within a stable framework, allowing for long-term commitment from governments and donors alike. This commitment would have to be founded on common policy grounds. Our purpose is to define these common grounds for RWSS.

Before we attack our task, it will be of value to review priorities for infrastructure programs and policies for the 1990s.

- The first priority is rehabilitation. One must arrest the ongoing deterioration. Rehabilitation is cheaper than full reconstruction at a later date. It is of higher economic and social priority because it serves established demand. Rehabilitation should generally receive priority over new investments.

- The second focal point of infrastructure policies for the 1990s is maintenance capacity. The problem of maintenance has frustrated both governments and donors for the last two decades. There is no quick cure. It is nevertheless clear that more attention should be paid to the policy dimensions of the problem. The consequences of neglect are usually borne by a broad and diffused constituency. A higher measure of accountability and responsiveness to users of infrastructure services would be essential and should be sought through systematic information and through consultations with user groups. Neglect should simply not be acceptable, and maintenance should be regarded by the public and by governments alike as the most significant determinant of institutional performance.

- The third common policy strand for infrastructure in the 1990s is parastatal reform and cost recovery. Infrastructure agencies in charge of roads, railways, water supply, etc. will remain at the center of efforts to rationalize the public sector and to improve resource mobilization. Related programs have the following underlying objectives: (i) to refocus the role of governments away from the direct provision of services; (ii) to set parastatal agencies on the course towards financial viability and improved performance; and (iii) to enhance the role of the private sector. The restructuring of large parastatal agencies and the privatization of infrastructure services is intellectually demanding and politically delicate. Privatization can be approached through a menu of options including outright privatization, divestiture of ancillary activities, and management contracts. Often one important initial step is to allow private operators to compete with parastatal agencies. The devolution to the private sector of functions heretofore assumed by public agencies, will require a re-examination of donors' policies since they have used central parastatal agency infrastructure as privileged channels for external funding.

- The fourth policy dimension for infrastructure in the 1990s concerns the recognition of the role of the informal sector. Sectoral policies and infrastructure programs have generally dealt with the formal sector. The fact remains, however, that in many cases the majority of the population depends upon the informal or artisanal sector for the provision of its basic infrastructure services. This is particularly the case for the poor. The objective here would essentially be to remove constraints to the upgrading of services through regulatory changes, training and promotional measures based on incentives.

- The final and perhaps the most pervasive areas for policy changes concern human resource and institutional development. The importance of training has long been recognized; however, the impact of long-standing efforts on institutional performance has, on the whole, been disappointing. New approaches are needed to deal not only with training, but also with utilization and deployment of trained staff and to provide motivation for continued professional development.

The buildup of infrastructure capacity needed to achieve the overall objectives laid out in LTPS have been estimated in the magnitude of about $100 billion over the next 10 years. Increased resources will only produce results if the policies necessary to ensure their efficient use are in place.

The first step in many countries will be to develop the necessary policy foundations for the preparation of strategies and programs for the improvement and accelerated development of infrastructure services. We believe this to be the case in particular for RWSS.

After introducing briefly the *raison d'être* of our Workshop, we have taken a step back and have reviewed broad trends concerning macroeconomic management and development policies. We have then reflected on infrastructure policies for the 1990s. Let us now turn to the subject of our Workshop, that is RWSS. There is some temerity for me in doing so because I address myself to specialists. My objectives have been set accordingly, as I will mainly attempt to point out the areas of greatest uncertainty and thereby outline your mandate for the next three days.

Let us again remember that 70 percent of the population of SSA--that is 300 million people--are rural and their number continues to increase. Hardly half of them have access to a reliable supply of safe water. The effectiveness and sustainability of past programs, as well as the dissemination and replication of successful experiences, have been hampered by the absence of a coherent policy framework and the lack of a clear institutional focus for planning, funding and maintenance.

The experience and research of the past ten years suggest that the search for sustainable and effective RWSS strategies should be oriented in the following directions: (i) appropriate technologies emphasizing village maintenance; (ii) effectiveness in terms of health impact, largely by coordinated measures in health and hygiene education; (iii) recognition of the primary role of women in water management at the household level and in child care and education; and (iv) involvement of local communities at the planning and construction stage as well as in operation and maintenance.

On all of these points individual countries, as well as their partners in development, have experiences to share. We all have some degree of familiarity with the contributions of UNICEF, USAID/WASH, the bilateral aid agencies (especially the Scandinavian countries), and many NGOs such as WaterAid. In addition to its own relatively limited operations, WB has been involved as executing agency for the UNDP Water and Sanitation Programme.

A significant achievement of the Decade has been the development of low-cost technologies for handpumps and filters as well as on-site sanitation. We will have the opportunity to discuss these advances this afternoon.

In the institutional area, the concept of village level operation and maintenance (VLOM) was an important step in searching for viable alternatives to direct reliance on central institutions. Much experience has been gained with innovative institutional strategies involving central and local governments, as well as the private sector, NGOs and the communities themselves. For central institutions, the shift from provision of services to promotion and facilitation may imply retrenchment and redeployment of personnel--as well as loss of influence and authority--through decentralization, but also through the emergence of new capabilities at the community level. The first subject proposed for our reflections concerns these *institutional issues*.

The second one pertains to *financing and resource mobilization*. The starting point of our reflection is a recognition that centrally provided free services have failed over time to meet the needs of the poor and to support the expansion of coverage. The movement towards appropriate technologies and more flexible and pluralistic institutional approaches has been paralleled by greater acceptance of the idea that users can and should contribute toward the cost of the services they receive. The new perspective on cost recovery has led to considering the concept of effective demand as the basis for system planning. The task before us is to provide advice on funding and resource mobilization strategies that will, over time, maximize services and serve the need of rural poor.

The final subject proposed for our reflections is *sector policy development and planning*. The question is not to be seen in a static perspective but in a dynamic one. How should countries undertake the process of policy reform and institutional changes for RWSS? The need to carefully plan and manage the process of policy reform has not been sufficiently

recognized. The experiences of several countries should provide the basis for useful recommendations.

I have tried to place our Workshop in context and to define the task ahead. Like all things which speak of true necessity my points are simple:

- WSS will continue to be essential elements of strategies centered on the development and the productivity of rural populations

- The overall context for policy changes, as well as the specific experiences and the research in the sub-sector, provide a sound basis for defining common grounds for a renewed effort to expand coverage and to improve sustainability and effectiveness

In defining these common grounds we turn to you. The outcome of our deliberations will, above all, be addressed to African policymakers, planners and practitioners from governments, as well as NGOs and the private sector. Our findings will also be addressed to development agencies and in particular to WB. They will be reflected in the RWSS Strategy Brief to be issued by the end of the year, and will guide our operational work. Thank you.

WELCOMING STATEMENT

His Excellency Bamba Vamoussa

Minister of Public Works,
Transportation, Construction and Urbanism
Côte d'Ivoire

Honorable Ministers, Mr. President of the African Development Bank, Your Excellencies Mr. Ambassadors, Honorable Representatives of International Institutions, Eminent Delegates of Member States of the African Development Bank, Ladies and Gentlemen:

Today my greatest emotion is joy--the joy of welcoming you to Ivoirien land, this land which Providence has enabled our venerated President, His Excellency Félix Houphouët Boigny, to mold with love and wisdom, in the peace that is essential for all development. This is why, in the name of President Félix Houphouët Boigny, in the name of the Government and in the name of the Ivoirien people, I bid you welcome to Côte d'Ivoire and more precisely to Abidjan, our economic capital.

Your presence in our country honors the Ivoirien people, its President, and its international institution, the African Development Bank (ADB). This morning we are pleased to stress that our common institution inspires confidence, respect and admiration, for over these past years its initiatives have embodied originality, seriousness and permanence. We congratulate and encourage the president of ADB, Mr. Babacar N'Diaye, for his great receptiveness and know-how.

This morning, we meet to discuss a *concern*--water, in its complete cycle--a *project*--how to most readily supply the populations with water--and an *objective*--to organize a dialogue for assessing our progress and restructuring ourselves in order to better respond to the water needs of our fine rural and urban populations.

In 1977, at Mar del Plata, Argentina, the United Nations--being fully aware of the acuteness of the problem of water in the world--unanimously decreed the period 1980-1990 the International Drinking Water Supply and Sanitation Decade (IDWSSD). The United Nations thus responded to the desire of each of its member countries that they be assured adequate water supply and sanitation facilities, adapted to specific local conditions for the welfare of their populations.

At the end of the Decade, can we affirm that the objectives designed to solve the water problems in urban and rural areas have been achieved? Truly, it is not easy to give a definitive answer to this question. The retrospective assessment to which you have been invited this morning both highlights positive experiences--whether in terms of realizations or the implementation of new and developing management mechanisms in the water sector--and pinpoints problem areas which have inhibited the reaching of envisioned results.

Regarding positive experiences, we must admit that the establishment of the Decade by the United Nations inspired in the governments of the world a greater awareness of the significance of water for mankind. This awakening of all humanity to the water problem is a major asset, and has prepared our consciousness to better appreciate the efforts required to satisfy the needs of populations in the sector with which we are concerned.

Moreover, several countries have been able to start projects inscribed within the framework of recommendations of the United Nations in the realm on which we are focussing today. Thus, various mechanisms and methodologies have been implemented and their effectiveness has been assessed. In the final analysis, some mechanisms deserve to be strengthened, while others would benefit from modification.

It is on this particular point of the apparent deficiencies of several investment programs that the ADB and the World Bank (WB) have rightly emphasized the following issues:

- The first issue results from the volume and management of external aid given to different countries due to their lack of resources to finance

their own investments. An analysis exemplifies the fact that external aid is fragmentary and insufficiently coordinated. This has created the danger of contradiction in initiatives.

- The second issue concerns the insufficiency of credits for investment in rural water supply. Although in Sub-Saharan Africa 70 percent of the population is rural, only 6 percent of loans and grants from donor countries in the water sector are directed towards rural areas. You will agree with me that this disproportionate allocation is too pronounced.

- The third issue emanates from project planning and the use of affordable technologies. Despite the remarkable efforts of WB, the United Nations Development Programme, and ADB in this field, experience demonstrates that a new dynamism on the part of African countries is necessary to deal with the requirements of a more intelligent management of the rural sector.

In other words, in order for water in Africa to be accessible to the entire population in the future, the following corrective measures are required: (i) technical; (ii) financial; (iii) institutional; and (iv) political--distinguished by a reallocation of the volume of investments in rural and urban zones.

It is in this vein that we welcome the aspirations of this meeting organized under the leadership of ADB and WB. This meeting provides an opportunity to reflect on the appropriate directions for the four areas listed above in an attempt to adopt a common position which will become the "Voice of Africa" at the Global Conference on water issues to be held in New Delhi in 1990.

Yet even more than consensually shared resolutions, we are convinced that the Abidjan meeting will enable country delegates to highlight a tremendous handicap for developing countries in their efforts at program planning for short-, medium- and long-term investments. This handicap derives from the hieratic--and turbulent--fluctuation of the price of raw materials on the world market. All the systems for programming and choosing investment priorities are rendered ineffective by the eroding of the conditions of exchange. In our view, it is imperative that the lending agencies represented here raise the consciousness of the developed world to the realities of developing countries who ask for nothing other than a stable remuneration for their raw materials, so they can better measure their investment efforts.

Sweet will be the victory for mankind over itself the day when, driven by the truth of justice and equity and under the guidance of a new ethic in North-South relations, this cry--which now echoes in the bleakness of hearts and minds--will be heard by men overcome by good will and justice. Thus programs of intervention in the water sector will be reinforced and better oriented to the benefit of the populations.

The presence of eminent experts both in the realm of finance and in those of management and water distribution constitute, in our opinion, a legitimate guarantee for the success of your work. All Africa waits, with a focused attention, for the conclusions of your discussions, the results of which will undoubtedly greatly impact the management of the well-being of millions of people on the Continent.

For our part, we hope that the necessary improvements of the rural population's living environment will be taken into consideration. We believe that the imbalance of investments in the water sector stems from the ever more pressing needs of the urban population--faced with the numerous constraints caused by the rural exodus, which in turn results from the low standard of living in many rural areas of Africa. It is therefore necessary to consider integrated projects, so that the positive interactions of projects targeted for rural areas will contribute to keeping their populations in their area of origin. Such projects will undoubtedly contribute to reducing the needs of urban populations and will favor a more equitable allocation of investments between rural and urban areas. Political will has a leadership role to assume in such a choice.

All Africa is listening to you and attentively follows your deliberations. It waits for you to give it a "voice" for New Delhi. On the eve of your days of deliberation, it is in this hope--that you will give Africa this voice--that we declare the sessions of the Workshop on Water Supply and Sanitation in Africa open.

WORKSHOP FRAMEWORK

Mr. Randolph A. Andersen

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Infrastructure Division
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The World Bank

Before we launch into the plenary and group sessions, I would like to take this opportunity to give you some briefing notes on four aspects: (i) the history that has led to the holding of this Workshop; (ii) the objectives and theme of the Workshop and how it is linked to the Conference; (iii) some practical details; and (iv) our expectations for this Workshop and for the future.

- First of all, what brought about this Workshop and Conference? As the Decade was coming to its end, within the World Bank (WB) we began to evaluate what we and others had been doing with regard to rural water supply and sanitation (RWSS). In order to have a better understanding of the issues and directions that ought to be pursued during the 1990s, we attempted to capture the experiences of the 1980s, which could then be used in blending, reviewing and redefining the policies for the 1990s.

In WB we prepared the RWSS Strategy Brief, to which Mr. Doyen referred. This was preceded by an extensive data gathering exercise and preparation of case studies covering different subject areas in different countries. Based on this rather extensive amount of information, the position papers before you were prepared and will provide the background documentation for the plenary and group sessions.

The draft RWSS Strategy Brief was also reviewed and commented upon by the African Development Bank (ADB), and it was at that stage that there was agreement between ADB, WB and the United Nations Development Programme (UNDP) that there should be a joint dissemination of conclusions and recommendations reached in the Strategy Brief. This idea was further developed, and resulted in the proposal for a combined Workshop and Conference, with WB to be primarily responsible for the Workshop and ADB for the Conference. The Conference would then provide a logical extension for the Workshop, with an emphasis on urban areas and external support agencies' (ESAs) present and potential role in the sector.

- Secondly, the objectives and theme of the Workshop are considered to be: (i) to present and to share experiences in RWSS in Sub-Saharan Africa; (ii) to examine different approaches and policy options available for the further development of the sector; and (iii) for you, the delegates, to develop pragmatic recommendations for future strategies that can be implemented by different countries in the Region.

The objectives are reflected in the topics to be discussed during plenary and group discussions. The topics constitute a theme which should lead to an approach for specific activities to be undertaken at the country level.

Today, during three plenary sessions, we are going to cover subjects which will provide a common understanding of the sector. These are: (i) the Contributions of RWSS to Rural Development; (ii) the Role of Women in RWSS; and (iii) Technology Development.

Tomorrow, we will have two group sessions to discuss institutional and financial issues. By Wednesday, we should be well prepared to discuss approaches to improved management and strategy planning that would enable the introduction of what we have learned in larger scale implementation of RWSS facilities. Although any sector development and increased service coverage could be assumed to be a slow process, concerted efforts by governments, ESAs and non-governmental organizations (NGOs) could accelerate the pace.

In the position papers, major issues have been identified, which are proposed to be addressed during plenary, but particularly during the group sessions. In order to achieve some uniformity between the groups and the group discussions, it is important that the issues as identified are firstly concentrated upon, and if time permits, supplemented by other issues which may not have been adequately identified in the view of the delegates.

- Thirdly, some practical details. The Workshop has been organized in plenary and group sessions, with the countries being divided into five groups, of which two will be English speaking and three will be French speaking. During the plenary sessions which will take place today, time will be left for questions to be addressed to the panels after the presentations.

Later on today, the working groups will convene, providing an opportunity for the participants to get together and also for the country delegates to select chairpersons and rapporteurs. In each group, it is proposed to retain the same chairperson and rapporteur throughout the three working group sessions. This may be questioned as being too demanding a task, but considering the coherence of the topics to be dealt with, this arrangement would seem to be preferable to the selection of new chairpersons and rapporteurs for each session.

Presenters have been appointed, who will also act as facilitators and as such to assist the group chairperson in whatever matters might arise. It should also be mentioned that the Workshop should be run by the country delegates sitting at the table, with the participants from ESAs and NGOs acting more as observers, but of course ready to assist as needed. That will provide an opportunity for the ESAs and NGOs to learn from the viewpoints and experiences of the country delegates.

For the three group sessions, presentations will be made by the rapporteurs for the five groups in the plenary sessions scheduled to take place on Wednesday. The report from each group should then be consolidated to cover findings and conclusions reached on Institutional Issues, Resource Mobilization and Strategy Planning. Based on these reports, Workshop resolutions and conclusions will then be summarized to serve not only as an object in itself, but also as an input to the Conference.

As shown on the agenda for Tuesday afternoon, there will be a presentation by SODECI, the water authority for Côte d'Ivoire.

- So finally, what do we expect to be the result of the Workshop and what do we do next? I do not want to preempt any conclusions that may be reached during the upcoming sessions, but it should nevertheless be emphasized that this Workshop and also the Conference are to be considered merely a stepping stone for subsequent activities to take place at the country level. At the end of this week, all of us should have a better understanding of possibilities and opportunities that exist and of what we can do together to accelerate sector development and to realize the objectives of the Water Supply and Sanitation Decade as extended. If we can reach an understanding on how--together--we are going to continue at the country level, and also how we are going to function at the regional level, the Workshop can be considered to have been worth its efforts and also its costs.

As far as WB is concerned, your contribution during this week will also enable us to finalize the RWSS Strategy Brief for distribution later this year, which in turn hopefully will generate additional funds for the sector. Your contributions will also enable us to better promote the RWSS sector in the context of ongoing discussions under the Long-Term Perspective Study referred to by Mr. Doyen in his opening remarks.

In closing Mr. Chairman, I would like to say that I look forward to a week of open, frank and constructive discussion.

POSITION PAPER 1

THE CONTRIBUTION OF RURAL WATER SUPPLY AND SANITATION TO RURAL DEVELOPMENT

Prepared by

Lars Rasmusson
The World Bank

THE CONTRIBUTION OF RURAL WATER SUPPLY AND SANITATION TO RURAL DEVELOPMENT

SUMMARY

This position paper highlights the role and the justification of Rural Water Supply and Sanitation (RWSS) in rural development and the potential benefits that can be achieved. It provides a synthesis of the concept of effective demand which in conjunction with recent achievements being made in the development of delivery systems, approaches in community management and appropriate technology can provide a tool for economists and planners in their considerations for increased sector investments.

The long-term potential benefits of RWSS relate to improved health, economic and social conditions. For some of the benefits significant efforts have been made in their quantification with conclusions reached briefly summarized as follows:

- RWSS improvements can have a significant positive impact on health but they cannot be expressed yet in quantitative terms although used for the justification of investments
- rural water supply could be justified economically by considering time saved in carrying water, provided that related benefits can be translated into financial resources
- the provision of RWSS has a potential to further enhance community management and promote women in development

Although the benefits are indisputable it can also be concluded that planners still do not have readily accessible means for their valuation. A number of questions still remain unanswered related to how to design a RWSS and hygiene education package in order to optimize its impact. Investment justification would thus have to be based on true cost recovery or what can be termed as effective demand.

Effective demand signifies a willingness to pay for a service standard and level as decided by the communities and users themselves. It should also be emphasized that the concept of effective demand can only be applied usefully if all other aspects related to technological, institutional and financial issues are addressed concurrently.

The two major issues to be considered by governments and external support agencies (ESAs) would thus refer to:

- the implications of changing from central provisions to the concept of effective demand, and
- the development of an approach to fine-tuning the design of a RWSS and hygiene education package to optimize its impact

INTRODUCTION

The main objective of the Workshop will be to present experience in RWSS in sub-Saharan Africa, examine different approaches and policy options available for the further development of the sector and develop pragmatic recommendations for future strategies that can be implemented by individual countries of the region.

The topics to be discussed during group and plenary sessions constitute a theme which should lead to an approach for specific activities to be undertaken at the country level. The topics which are synthesized in position papers refer to:

- the contribution of RWSS to rural development
- the role of women in RWSS
- technology choices
- institutional issues
- financial resource mobilization
- sector management and strategy planning

This position paper highlights the role and the contribution of RWSS to rural development and the potential benefits that can be achieved. As such, it can be considered as a precursor to subsequent subjects dealing with institutional, financial and technical issues and the development of sector strategies and plans for the application of conclusions reached in programs/projects preparation and implementation. RWSS constitute an essential component in an intricate rural development pattern. The RWSS linkages are manifold and their implications can be wide-ranging.

OBJECTIVES

The position paper provides a synthesis of potential benefits to be derived from RWSS and of the concept of effective demand which–in conjunction with recent achievements being made in the development of delivery systems, approaches in community management and appropriate technology–would provide a tool for justification for increased sector investments. As such, the overriding objective is to attract the attention of the decision-makers to the importance of RWSS in rural development and to show that sustainable and replicable RWSS facilities can be delivered.

RWSS IN RURAL DEVELOPMENT

Any review of past records in rural water supply extensions provides a gloomy picture of facilities either under-utilized or totally out of commission. The reasons for this have been extensively analyzed and in summary can be attributed to inappropriate selection of technology, and to institutional or financial arrangements leading to unsustainable investments. However, this state of affairs has also forced us to gain a deeper understanding of the sector and the demands of the communities, which, in its turn has led to the development of new ideas and approaches.

The more convincingly the benefits of RWSS can be quantified, the easier it will be for the decision-makers to justify increased allocations to the sector. The long-term potential benefits could be classified as:

Health Benefits:

- prevention of diarrheal diseases
- control of other diseases related to poor water supply and sanitation (WSS)
- improved primary health care and nutritional status

Economic Benefits:

- time released from carrying water
- promotion of commercial activities
- household irrigation and animal watering
- support for other sectors

Social Benefits:

- improved community organization
- stimulation of enterprises

The above benefits could simply be summarized as basic needs to enhance the quality of life, and for some of them, significant efforts have been made for their quantification although with mixed results.

Studies show not only that complex interactions between RWSS and other activities exist which make quantification of benefits from a single intervention difficult; they also show that impacts are sequential or linked. This is well illustrated in a graphic presentation of water supply impacts (see Box 1), which was developed by Carruthers[1] while working in Kenya in the 1970s, on the basis of experience in East Africa, and still holds good today.

For a number of years there have been unsuccessful efforts to quantify and to place a value on the health improvements resulting from RWSS investments. Recently, new analytical techniques--case control studies--have been developed, which appear to offer, at least on a long-term basis, a better chance to resolve this question. These case control studies have conclusively demonstrated that RWSS improvements can have a significant positive impact on health. However, the impact cannot yet be predicted on a case-by-case basis or expressed in quantitative terms. The case-control technique is not yet sufficiently sophisticated to justify investments or allow "fine-tuning" of RWSS project designs. Several excellent long-term health impact studies are being written up, for which a summary report has been prepared (1989)[2] and is proposed to be published as a World Bank (WB) documentation.

However, in the case of Guinea Worm, the benefits can be clearly identified on account of its single transmission route. In Nigeria 2.3 million people are infected with Guinea Worm every year. Although most are temporarily incapacitated for 1 to 3 months, an estimated 12,000 are permanently disabled. The disease severely affects the production of rice. A packaged intervention (predominately improved water supply) estimated to cost US$36 million over a 5 year period, would eliminate the disease in a population of 1.6 million. The resulting increase in rice production is estimated to be worth $20 million each year. This would correspond to a phenomenal return on such an investment.

Recent WB work also suggests that rural water supply projects can usually be justified economically, by considering the time saved in carrying water. In such a case the amount of time that users would save as a result of whatever service improvement is being considered should be assessed and then the value of this time to users estimated on the basis of evidence of household behavior. In relating the value of time to investment costs and technology it is suggested that if the value of time is above about US$0.20 per hour, the yard tap system is the least cost option, assuming that consumption is in the 20 to 75 liter per capita per day (lcd) range. When the value is less then US$0.05 the handpump system is the least cost alternative.

However, the prevailing problem is that economic justification does not always translate into financial resources. Time savings of rural carriers do not automatically result in additional income which could be used to pay for water supply facilities. Income-earning opportunities may not exist, even though time would be made available to take advantage of them. On the other hand, the advantages of time saved would not be lost if spent on other "non-productive" activities such as caring for or educating children.

It is widely recognized that any rural development initiative will have to emanate from the communities themselves in order to ensure long-term sustainability. Any sector organization at national and local levels should thus be directed to the provision of support required for initiating such a process. The extension of RWSS could thus be an entry point for the further broadening of the concept of community management, which, as the process gains momentum, would not be restricted to this sector alone but would diversify into other community functions.

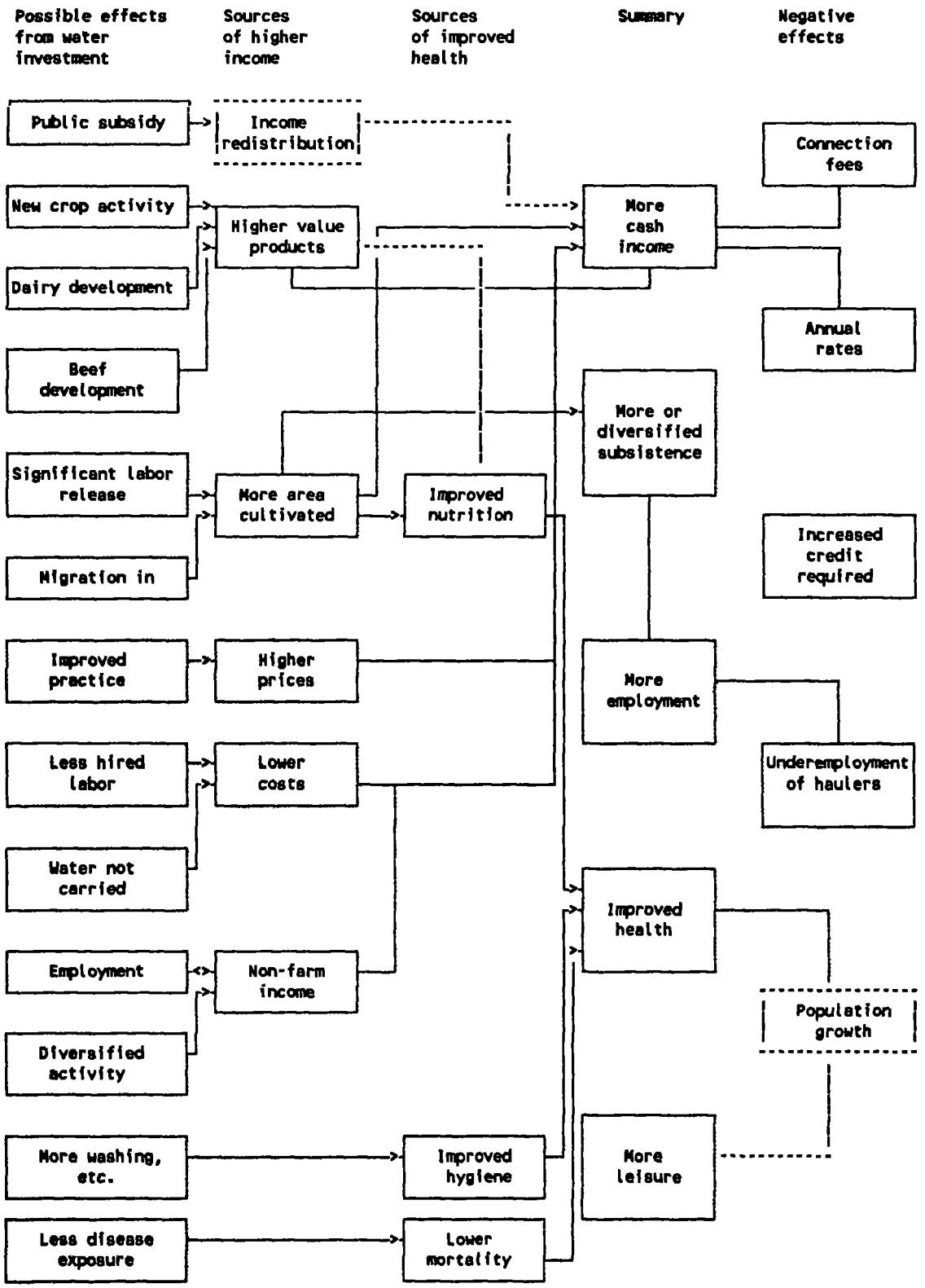
The advantages of a close and conveniently located water source are obvious. Regarding facilities for excreta disposal, the situation may be

[1]Carruthers, I.D. Impact and Economics of Community Water Supply: A Study of Rural Water Supply Investment in Kenya, (1972).

[2]Health impact of water supply and sanitation (WSS) projects prepared for WB by Kalbermatten Assoc.

BOX 1

IMPACT OF WATER INVESTMENTS (Carruthers 1973)



different. Low population density provides plenty of space and the importance of privacy might not be an issue and there may not be an expressed demand for proper sanitation. Under such circumstances, benefits to be achieved through provision of water supply in improved health conditions may also be marginal. However, all experience indicates that in order to optimize the impact of investments in water supply, this should be integrated with or linked to concurrent activities to be undertaken for sanitation and health or hygiene education.

It has become increasingly apparent that any RWSS development, including hygiene education, can only successfully take place with the involvement and commitment of women. The women are responsible for household needs for water and, as such, they have a stake in ensuring that, once systems have been installed, they remain in operation. Therefore they should have a dominant influence in the development of water facilities and should be selected and trained for their operation and maintenance. This could be expected to have a wide array of spin-off effects on other related developmental issues. It may also be argued that women in any village provide for the continuity when men have to go to other places to seek employment opportunities.

It might be concluded that planners will not have, in the near future, readily accessible means of valuing health improvements or time saved or any other benefits in such a way that the valuation can be a useful operational tool. This would imply that investment justification at least for the time being will have to be based on true cost recovery and on programs to be designed to maximize health impact; to the extent possible to provide opportunities for productive utilization of time saved; and to ensure that facilities to be built function and are used as intended.

RWSS AND ITS LINKAGES

It has been advocated that rural development should be undertaken as an integrated process in order to optimize the benefits. This led to the formulation of projects or programs encompassing all related components. The success of such approaches has been assessed (Rural Development, WB Experience 1965-1986) with conclusions reached that required coordination of project preparation and execution often proved to be too cumbersome and caused serious delays. This does not mean that integrated projects should not be undertaken but that an improved institutional environment including improved delivery systems would have to be created in order to ensure efficient project processing. In many, if not most cases, it may also be found to be more feasible to carry out RWSS projects as self-standing components. This would facilitate both sector strengthening and project formulation and implementation. However, it should be recognized that any RWSS extensions would be a part of and linked to the overall objectives on rural development. It may also be concluded that RWSS extensions should only take place in communities where a developmental potential has been identified.

Impact health analysis has been done to a very limited extent on the effects of water supply provided in isolation or jointly with sanitation and/or hygiene education. An integration of these components which are often handled by separate institutions will, through the coordination requirement, complicate the process and might also slow down the provision of water supplies. However, the benefits of a closely linked approach would seem to outweigh possible disadvantages. That does not exclude the execution of separate WSS projects like in Zimbabwe where a large number of ventilated improved pit latrines (VIPs) have been installed successfully under rural sanitation programs. The provision of water supply (a waterpoint or a piped system) is an activity taking place within a short time period while the extension of sanitation (VIPs) would be considered as a long-term process. Nonetheless, it is important to initiate this process and it seems that can best be done when linked to water supply.

A lot has been written about health and hygiene education and the need for behavioral changes. Hygiene education in this context is the first step towards a more comprehensive health education which should be the final goal. Hygiene education would also provoke behavioral changes in relation to the handling and use of water and the perceived need

for appropriate sanitation. Hygiene education--which is already widely applied--is a necessary complement to and also constitutes the common denominator for WSS and sanitation. The introduction of RWSS would also provide the opportunity for hygiene education to be given a more focussed attention with the development of more consistent and sustainable approaches for its delivery.

ISSUES RELATED TO THE EXTENSION OF RWSS

A prevalent issue refers to quantity of water to be provided as well as to the importance of related quality. For example, a World Health Organization literature review on the effect of WSS improvements on diarrheal morbidity in children reached the following conclusions:

- improved water quality caused an 18 percent reduction
- improved water quantity 25 percent
- improved water quality and quantity 37 percent
- improved excreta disposal 22 percent

Studies of villages in the project area of the Blue Nile Project (Sudan) also suggested that increasing the consumption of safe water from 40 to 70 lcd would result in the prevalence of diarrheal disease in children falling from 60 to 35 percent.

Water quality refers to the point of delivery as well as the point of consumption. The former is a question of funds that can justifiably be spent on source development and protection and on degree of water treatment. The latter is a direct function of hygiene education and behavioral changes.

It is obvious that increased availability of water will have a positive health effect. This will directly relate to the question of service standards, taking into account distance from a water source, queueing time for collection of water and provision of yard or house connections. This raises the question: what would be the optimal trade-off between service standards and health and other benefits, and to what extent could improved hygiene education compensate for water quality and quantity?

When arguing on water quality and quantity, it should also be mentioned that, due to the multiple potential transmission routes of most pathogens, it is now common to refer to the relevant diseases as "excreta-related" rather then, as in the past, "water-borne." This only emphasizes the critical importance of sanitation and hygiene education.

The above and other issues on which there are still no satisfactory answers could be summarized as follows:

- What are the anticipated health benefits of various standards of RWSS services? What are the marginal increases in health benefits corresponding to marginal improvements in standard of service? What are the values to the economy as a whole of such marginal increases in health benefits and to what extent would these benefits justify the provision of program subsidies?

- What are the existing hygiene behavior patterns and how do they influence the use of water and sanitation facilities? How can personal hygiene behavior be improved and at what costs? What would be the optimal packages of water supply, sanitation and any other inputs? What are the implications of the possible sequencing of investments (water supply followed by sanitation, for instance)?

- What are the comparative health benefits of providing wide coverage at a relatively low standard of service (such as waterpoints) rather than more limited coverage at a higher standard (such as house connections)? In general, are there particular access or quality "thresholds" which must be reached? These matters are proposed to be addressed in demonstration or pilot projects and in the implementation of RWSS programs and projects.

EFFECTIVE DEMAND

Although the benefits of RWSS are indisputable, an operational tool for their quantification has yet to be devised. Therefore as already stated above, any justification for the rehabilitation or extension of RWSS facilities will have to be based on true cost recovery or what has been termed effective demand. The effective demand signifies a willingness to pay for a service standard and level as decided by the communities and users themselves.

Effective demand is essentially a demonstration of people's voluntary behavior when faced with options for obtaining services as opposed to what policymakers may assume they can afford or need to do in any given situation. The demand for water and sanitation can be explained partially in terms of the price of these services in relation to the level of real income of the consuming household. This valid idea has sometimes been arbitrarily used to imply that rural people could afford to spend approximately five percent of their income on water and sanitation. Cost-recovery projections have then been calculated on the assumption that people will spend this amount on WSS services. However, effective demand is based on consumers' own perception of benefits as well as on price and income. Most rural communities already have access to traditional sources of water. Unless new facilities present a noticeable improvement (as valued by consumers) over previously used sources in terms of such factors as distance, convenience, reliability and quality they will not be used and hence not paid for, even if the community might in principle be able to afford to do so. Thus people's willingness to pay, as demonstrated by actual behavior, determines the effective demand for the service, rather than some socially determined need or affordability criteria. This matter will also be further elaborated upon in the position paper on financial resource mobilization.

It should also be emphasized that the concept of effective demand can only be applied usefully if all other aspects related to technological, institutional and financial issues are addressed concurrently. However, it should also be realized that the use of effective demand as a major determinant in investment prioritization most likely will, at least for the time being, exclude the most destitute among villages from getting any immediate improvements in RWSS services because of lack of developmental prospects.

CONCLUSIONS

Based on information and viewpoints presented above the following conclusions could be reached:

a. RWSS extensions should take place within a framework of overall rural development. RWSS could be executed separately or be integrated into larger rural development projects. In this context special emphasis should be placed on the creation of opportunities for the gainful use of time saved in carrying water.

b. Although extension of water supply could be undertaken separately, its impact will be much larger when integrated with hygiene education and integrated with or linked to sanitation. Thus institutional provisions should be made for facilitating such an approach.

c. Project justification should be based on effective demand which, however, can only be applied usefully within a framework of overall sector development.

d. In order to further refine the tools for the design of program or project packages and to optimize RWSS investments, issues raised above will have to be addressed. That could feasibly be done under ongoing or in the formulation of new programs or projects.

The two major issues to be considered by governments and ESAs would thus refer to:

- the implications of changing from central provisions to the concept of effective demand, and

- the development of an approach to fine-tuning the design of a RWSS and hygiene education package to optimize its impact.

PRESENTATION OF POSITION PAPER 1: CONTRIBUTION OF RURAL WATER SUPPLY AND SANITATION TO RURAL DEVELOPMENT

The position paper, "Contribution of Rural Water Supply and Sanitation (RWSS) to Rural Development," was presented in plenary session by Professor G.A. Makanjuola, Director, Department of Food, Roads, and Rural Infrastructure, Nigeria. The paper highlights the importance of RWSS to rural development and the potential benefits that can be derived from its improvement. It therefore lays the stage for subsequent subjects, which deal with the institutional, financial and technical issues in developing sector strategies and plans for operations.

The speaker emphasized that RWSS constitutes an essential component of rural development, and that RWSS linkages are many and their implications wide ranging. He indicated that a review of past records in rural water supply extension portrays an image of facilities that are either not utilized or are totally out of commission. The reasons for this can be attributed to inappropriate selection of technologies and to institutional or financial limitations, which lead to unsustainable investments. Thus, this state of affairs has stimulated a different understanding of the sector and of the demands of the community. This in turn has led to the development of new ideas and approaches.

The position paper provides a synthesis of the potential benefits of RWSS. The concept of effective demand in conjunction with recent achievements (i.e. the development of delivery systems, approaches to community management, and appropriate technology) will justify increased sector investment.

The more RWSS benefits can be quantified, the easier it becomes for decision makers to support increased allocations to the sector. The long-term benefits can be classified under three broad headings--Health Benefits, Economic Benefits and Social Benefits--on which the speaker elaborated.

Prof. Makanjuola warned that economic justification does not always translate into financial resources. That is, service provision does not automatically result in additional income that can then be used to pay for water supply facilities. Income opportunities may not exist, even though time can be saved and thus could be used to advantage. On the other hand, the advantages of time saved would not be lost if spent on non-productive activities such as caring for or educating children, and for women to improve themselves. Therefore, it becomes an issue or a major challenge for policymakers and communities to create economic activities for the time saved by the provision of rural water.

It is widely recognized that any rural development initiative will have to emanate from the communities themselves to have lasting effects and be sustainable. Any such organization at national or local levels should thus be directed to the provision of support required for initiating such a process.

On the role of women, Prof. Makanjuola said that it has become apparent that any RWSS development, including hygiene education, can only take place with the involvement and commitment of women. Women are responsible for household needs for water, and therefore they have a stake in ensuring that systems remain in operation once they are installed.

Prof. Makanjuola talked briefly about RWSS linkages, mentioning that it has been advocated that rural development should be undertaken as an integrated process, in order to optimize its benefits. This has led to the formulation of projects and programs encompassing all related components. The success of such an approach has been assessed and the conclusion reached is that the required coordination of project preparation and execution often proves to be cumbersome and to cause delays. This does not mean that integrated programs should not be undertaken, but that an improved institutional environment--including improved delivery systems--will have to be created in order to ensure an efficient project process.

In many cases, it may also be believed that it is more feasible to carry out RWSS projects as

self-standing components. This would facilitate both project formulation and documentation. However, it should be recognized that any RWSS extension should be a part of, and linked to, the overall objectives of rural development. It can also be concluded that RWSS stations should only be located in communities where a developmental potential has been identified.

On the linkage between health and rural water supply, Prof. Makanjuola stated that a very limited impact health analysis has been completed on the effects of water provided both in isolation and jointly with sanitation and/or hygiene education. Integration of these components, which are often handled by separate institutions, may--due to coordination requirements--complicate the process and may also slow down the provision of water supply. However, the benefits of a closely linked approach seem to outweigh its disadvantages.

Regarding the extension of rural water supply, the prevalent issue is the quantity of water to be provided as well as the importance of its quality. Prof. Makanjuola quoted the review by the World Health Organization of the effect of RWSS on diarrhea and morbidity in children. Studies of certain villages suggest that an increase in the consumption of safe water from 40 to 70 liters per inhabitant per day will result in the prevalence of diarrhea disease in children falling from 60 percent to about 35 percent.

Water quality refers to delivery as well as consumption. While delivery depends on the amount of funds available which can justifiably be spent on development, protection and the degree of water treatment, the quality of water consumption depends on hygiene education and the resultant behavioral changes of the community.

Although the benefits of RWSS are indisputable, an operational tool for their quantification has yet to be devised. Therefore, as already stated, any justification for the rehabilitation or extension of RWSS facilities should be based on true cost recovery, or what has been termed "effective demand." Effective demand signifies a willingness to pay for a service standard or service level as determined by the communities and users themselves. Effective demand is essentially a demonstration of the population's voluntary behavior when faced with options for obtaining services, rather than what policymakers may assume they can afford or need to do in any given institution.

From the foregoing viewpoints, Prof. Makanjuola stated that the following conclusions could be reached. First of all, RWSS extension should take place within the framework of overall rural development. RWSS could be executed separately or could be integrated into larger rural development programs. Special emphasis should be placed on the creation of opportunities for the careful use of the time saved in carrying water. The impact of RWSS investment would be much larger if it were integrated with hygiene education and integrated with or linked to sanitation. Project justification should be based on effective demand, which however, can only be applied usefully within a framework of overall sector development.

POSITION PAPER 2

THE ROLE OF COMMUNITIES AND WOMEN IN RURAL WATER SUPPLY AND SANITATION

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THE ROLE OF COMMUNITIES AND WOMEN IN RURAL WATER SUPPLY AND SANITATION

I. INTRODUCTION

Water and health, given their close relationship with all other development sectors, remain at the end of the International Drinking Water Supply and Sanitation Decade (IDWSSD) high priorities for African governments as well as for external support agencies. The objectives of healthy water for all and better living conditions for the less privileged are still appealing, yet effective ways and means to provide them still have to be devised.

Domestic household management, including water supply and health care, is the responsibility of women in many parts of Africa. Their contributions and creativity can be utilized in ensuring effective development of the water supply and sanitation (WSS) sector.

What is at stake is not only an improvement at the socio-sanitary but also at the economic and financial levels. As a matter of fact, genuine community participation may increase productivity and bring high returns on investment into the WSS sector as a whole. As a result, a greater number of unserved people may have their needs met.

This participation is a must inasmuch as there are increased needs related to population growth while available financial resources are insufficient.

In spite of the serious economic and social problems which they face, governments have financed a major part of the investments in sector development. Their main thrust, however, has been on hardware and not enough attention has been paid to the participation of the users, especially of women. In view of the economic crisis and structural adjustment policies, African governments may be prompted to minimize resources necessary for the sectors which do not provide direct economic and financial return in the areas of health, community and women's participation.

Therefore, any attempt to plan for the future of Africa should focus on these sectors and review them in light of new alternatives, including low-cost technologies, cost recovery and institutional strengthening which IDWSSD has explored. More precisely, it is important to fully support the rural water supply and sanitation (RWSS) components, especially given their potential for human capacity building.

Thus we wish to submit to the Working Groups present here, for their deliberations on the future of RWSS, the following points:

- the facts as they exist in the villages
- some of the hypotheses on which the strategies of intervening parties (donors, governments, etc.) are based
- some perspectives to be explored and some remarks on the importance of a participatory approach in promoting community and women's participation in RWSS

II. WATER IN THE VILLAGE

In Africa, it is almost impossible to imagine drinking water supply in rural areas without being struck by the image of women bearing water. In most of the rural areas, water transportation, management and distribution for household use are exclusively entrusted to women.

In addition to these tasks, women provide the households with staple food, prepare meals, and care for and educate the children. Thus, they are in a position to maintain social values, practices and habits, and they can adapt all these for their own benefit and for the benefit of future generations.

This process of socialization, of which women are the main agents, involves girls in a number of tasks, including water gathering, looking after the cleanliness of their siblings, and domestic waste collection and disposal. Unfortunately, development of the roles of these "women-to-be" has usually been overlooked. This point can be illustrated with data collected in Tanzania within the framework of a project of women's involvement in the rural water master plan of Rukwa region, the conditions under which rural women collect water, and the situations which RWSS programs are aiming to improve (see Box 1).

BOX 1

WATER IN THE VILLAGES OF RUKWA REGION (TANZANIA)

Villages	Population	Traditional Source of Water Supply	Common Diseases
ISESA Urban District Itwelele Division Molo Ward	970 residents 197 households 400 women	Wells, 2.5 km away from the village	dysentery, conjunctivitis, malaria
MYULA N'kansi District Kate Division Kipandi Ward	625 residents 115 households 267 women	Rain water in Spring, 15 km away from the village during the dry season	dysentery, typhoid, goitre, yellow fever
KASOTE Sumbawanga Rural District Kasanga Ward	1,950 residents 359 households 359 women	Kapondive River, 1.5 km from the village Rain water in wet season	dysentery, eye troubles, malaria, measles
KASU N'kansi District Chala Division Chala Ward	2,100 residents 485 households 201 women	Water wells, 25 km away from the village	diarrhea, dysentery, scabies, measles
KASUIWA N'kansi District Chala Division Mtenga Ward	1,494 residents 300 households 201 women	Wells, 5 km away from the center of the village; scarcity of water in dry season	diarrhea, eye troubles, measles, scabies
KATUMBA/AZIMIO Sumbawanga Urban District Itwelele Division Pito Ward	1,118 residents 250 households 250 women	River and wells, 2 km away from the village	typhoid, skin diseases, pneumonia, dysentery
MILANZI Sumbawanga Urban District Itwelele Division Milanzi Ward	1,131 residents 237 households 256 women	Wells Spring, 2 km away from the village	dysentery, diarrhea, measles
MLANDA Sumbawanga Urban District Itwelele Division Milanzi Ward	1,775 residents 253 households 560 women	Wells and river, 2 km away from the village	dysentery, diarrhea, measles

Source: Kauzeni, A.S.: *Women's Participation in RWSS Development Programs*, February 1987.

In such a context, the socioeconomic and health benefits of an appropriate RWSS program are obvious. It is responsive to a basic need, reduces morbidity and mortality rates and alleviates one of the most burdening tasks at the household level. Women are undoubtedly the prime beneficiaries of such a program.

This fact has a number of theoretical and methodological implications, the improper assessment of which has caused considerable loss of financial, material (underutilization and failure of facilities), human (high rate of morbidity and mortality) and economic (low productivity) resources.

III. DECADE STRATEGY AND OBJECTIVES

A too sectorial approach in the field of RWSS has generated very costly investments in the maintenance and management which are entrusted to a body of technicians who have not been prepared to take users into account.

In 1980, when the General Assembly of the United Nations (UN) declared 1981 to 1990 as the IDWSSD, the rate of coverage of populations water needs was about 40 percent, whereas coverage rate sanitation facilities was estimated at 25 percent.

Against this background, the rural areas were still more disadvantaged. The Decade objectives were the access of all to safe drinking water supply and adequate sanitation by 1990.

Initially, the main thrust of Decade activities was research on low-cost WSS systems, namely handpumps and latrines. However, it became clear that institutional strengthening, community participation, hygiene and health education, cost recovery and interagency cooperation are also important issues to be addressed.

Demonstration projects which focused on design, planning, implementation, monitoring and evaluation, aimed to demonstrate to governments the management of low-cost RWSS systems by the population themselves and the potential for large scale implementation.

IV. TYPES OF PARTICIPATION BY WOMEN AND COMMUNITIES IN RWSS PROGRAMS

Community participation is not a new concept in the development process. However, its complexity and multidimensional character is a puzzling issue. Technical, financial, institutional, economic, human and cultural factors, must be properly addressed in an integrated and consolidated approach.

Methodological difficulties of such an approach which are useful to some extent, but often rather limited. Participation in cost recovery, in construction, in operation and maintenance are the main types of actions that have been explored. They deserve to be examined here in terms of effective involvement of women.

Participation in Cost Recovery

Drinking water has a cost. The communities' understanding of this reality and their participation, at least partially, in cost recovery are for many funding agencies and governments a way to make the installations the users' property, thereby assuming their sustainability. But the implementation of such a policy depends on several factors: availability of the financial resources, productivity, acuteness of water needs and reliability of the financial and technological solutions proposed by the projects.

Most of the intervening parties who are in favor of women's participation in this process take into account that women as principal victims of the lack of water and pump failures, are more aware of the importance of operation and maintenance than others. They can therefore contribute themselves financially or influence men in doing so. In addition, in many societies, they are considered to be better managers of public funds.

These facts are real in social and economic situations where people do not have many financial constraints. The on-going process of economic and financial crisis no longer supports such attitudes. Cost recovery for water, therefore, is difficult to achieve because people will weigh it against other contributions they have to make to education, health and other basic services.

The areas where men used to be active, such as the modern sector of cash-crop agriculture, are the most affected by this crisis. They now have to rely on women who with creativity and skill sometimes succeed in meeting the needs of the household. But when the financial pressure becomes too much, the more needy women tend to tap polluted water sources which are free.

Rural development is definitely an overall process. Only the communities provided with attractive economic opportunities and the possibility of participating in decision making are confident and able to take part in new responsibilities such as water cost recovery.

We want to stress that water supply does not systematically lead to increased productivity and income for women if an enabling environment is not also created.

Moreover, it is up to the communities themselves to define who, according to his/her socioeconomic realities, has to pay for water: the woman, the man, or the couple. The communities should also be in a position to participate in the decision concerning the form and the amount of the payment.

Participation in Construction

This type of participation seems to be easier to obtain from the rural communities who are asked to demonstrate their commitment to the RWSS projects through their labor. This type of investment creates at the users' level a certain sense of ownership which contributes to the proper running of the facilities.

BOX 2

Participation of Communities/Women in Cost Recovery

The implications of the above remarks in RWSS projects have been examined by a group of experts who met from June 26 to July 3 in Abidjan at the African Development Bank (ADB) during a PROWWESS (Promotion of the Role of Women in Water and Environmental Sanitation Studies) regional workshop funded by the Government of the Netherlands. These implications are met on the following levels:

- The demand and its formulation: is the need to install a water system really a need felt by the populations? and is it an expressed need? do women really participate in identifying and formulating this need?
- The choice of technology: who chooses the technology and are different alternatives considered?
- The maintenance system: are communities/women informed about the implications of the maintenance system?
- Financing and repayment: is the financing scheme explained to the community/women in terms which they can understand? do they accept it? are other methods of financing explored? were ways of increasing the communities'/women's capacity to reimburse the costs explored?
- Managing the system: are the communities/women consulted about the management system to be established and how a management system will function?

Source: *Report on the Regional Workshop for the Strengthening of the capacity of african consultants in the design and implementation of projects involving communities and women in WSS*, Abidjan, June 1989.

This approach has been useful in certain projects in terms of cost reduction. But it also demands additional work for women when they are not involved. Women are already overburdened by agricultural and domestic chores. Construction is physically demanding for them and does not necessarily lead to their participation in the decision-making process and in water point management.

Participation in Operation and Maintenance

The development of local skills in operation and maintenance of low-cost technologies is an important step towards decentralization and towards viable RWSS.

This assertion, in terms of village-level operation and maintenance, leads to a fundamental issue: should women participate in every aspect of water management at the village level in order to ensure substantially an effective use of the facilities?

The principle of social equity would like it to be so since women are the main users of water sources. It has been proven, for example, that the appropriateness of a handpump is assessed by women's ability to disassemble it, conduct preventative maintenance and make basic repairs with simple tools.

Maintenance of low-cost facilities by women is artificial if the decision to carry out the repairs is not taken by the women themselves. They know which new functions they are ready and willing to assume, and they can organize their time in such a way as to enable them to handle new responsibilities once they accept them.

V. PARTICIPATORY STRUCTURES FOR RWSS

Village Water Committees

The type of participation mentioned above, is an organization within the village structure and is generally called a village water committee. These have succeeded in some context in mobilizing communities. But their pre-established character (structure, composition and function) generally prevents them from functioning well.

Thus in order to promote equity between genders some projects advocated an equal membership of women and men in these committees. Out of timidity, however, women, so promoted, cannot express themselves publicly and even less on technical issues on which they are not used to deliberating.

Such an approach leads unfortunately to the selection of politically influential individuals in these committees which increases the risk of the population disowning the project, thereby jeopardizing the potential outcome.

Endogenous Structures for Participation

In view of this type of social and political constraint which hinders the promotion of efficient village organizations in the management and maintenance of water points, it is crucial to explore alternatives which by virtue of their endogenous nature would be more responsive to genuine community participation.

The most appropriate orientation would consist in paying attention to community experiences in collective actions, in particular, in the field of maintenance and the protection of traditional water points.

It is also important to pay attention to the functions and the operationality of existing structures. For example, in a village where women are organized in production activities or where they have revolving funds (tontine), it is easier to reach them, to listen to them, and to mobilize them. Their participation in decision making in terms of cost recovery, for example, is much more easily envisaged in such a context where they are not only able to express themselves but also generate income.

A third alternative consists in leaving a window open to endogenous initiatives which appear automatically as soon as communities have properly understood the project objectives and accept to make it theirs. People are thus capable to put the right individuals in the right positions and to make commitments that they can respect.

VI. GENDER ISSUES

Poor understanding of the socioeconomic realities of the village and especially of the true aspirations of communities and women still prevent their integration. Some remarks may be made here on this subject:

- the role of women in RWSS cannot be effective and sustainable unless women and their communities decide to be involved
- the roles of men and women are not systematically interchangeable, especially in rural areas where populations are still attached to their cultural background
- certain historical and economic circumstances (such as seasonal migrations of men) can lead to changes in the division of labor and lead women to assume the roles of men

Thus, if one cannot deny that the woman assumes the responsibility for providing water for the daily needs, we also know that construction, maintenance and supervision of water points are essentially assigned to men. Sociologically, the men assert themselves only when performing functions linked to their status of husband and father. The construction and maintenance of the basic infrastructures, which include the water point, is one of his roles or functions.

It is therefore essential in WSS programs to understand the different roles in accordance with the socio-cultural realities and taking into account the aspirations of the population, and not only the projects objectives.

One of the difficulties in scaling-up arises when agencies and projects attempt to apply guidelines developed on a small scale implementation without full understanding of the interactions and mechanisms involved.

VII. WATER, HYGIENE AND HEALTH

The relationship between water, hygiene and health merits to be better understood in order to be integrated in RWSS.

From water to hygiene, one passes from a physiological need that individuals and their communities necessarily feel--and often express--to a more covert aspect of their life which is neither located in the public domain nor in the word.

Decision makers and communities focus more on water needs. But the absence of hygiene and sanitation, if not properly taught, is widely prejudicial to any effort of water provision. But how to capture and integrate in the same approach two needs which are not felt with the same acuteness by decision makers, communities/women and which are at the institutional level the responsibilities of different ministries?

At the sociological level, the difficulty in promoting hygiene is all the more real, since it leads us directly into a universe of symbols which is also a field rich with preconceptions. For example, children's excreta is exposed to the open air because people do not consider them as harmful. This may be true to some extent, but it is insufficient to explain communities' attitudes towards infants' defecation. In fact, it is often the exposure of the genitals at a certain age which is the issue. The notion of "dirty hands" also deserves to be reexamined in light of cultural diversities and practices as do ideas about garbage which means death in many cultures.

The above remarks are not meant to question these approaches since nobody knows the truth, especially in the rich and changing field of cultural responses. We simply assume that:

- the sustainability of the WSS systems and large-scale activities which are foreseen, exclude partial interpretations and hasty generalizations
- these conceptions which are many in the sanitation sector can be used in a constructive way in the implementation of a true endogenous strategy, if populations are the ones who interpret and exploit them.

VIII. THE MISSING LINKS: LITERACY, INCOME GENERATION, FAMILY PLANNING

In the same way that these reduce fertility rates, women's education and employment are the most decisive factors in the promotion of new behavior in the field of water, personal hygiene and environmental sanitation.

The opposite is true as well: water supply can help develop other sectors. The relationships linking various developing sectors should be taken into account since the early stage of project design. Income-generating activities are from this point of view the best linkage point for functional literacy which itself leads to better understanding and people's commitment to new behavior in water, health and family planning.

IX. INTER-INSTITUTIONAL COOPERATION AND RESOURCE REINFORCEMENT

Community participation is a multidimensional process which questions again the development process. It is a real challenge, not only for rural communities, but also and even more so for planners, decision makers, external support agencies, technicians and trainers. This explains the importance of considering the institutions to which they belong, to evaluate and reinforce their strategies as well as their resources.

Reduction of financial resources and repeated failures of centralization have created over the last few years a context for these questions. The handing over of responsibilities to communities in various sectors, including the WSS sector, benefit from this situation in terms of mobilizing the resources. But this transfer can be achieved through increased concentration at various levels: between funding agencies and ministries, and between ministries. In the WSS sector, for example, community development agents, who are in charge of the daily running of projects, are working under different ministries (Health, Social Affairs, Promotion of Women, Agriculture, etc.) which do not cooperate sufficiently with the Ministries of Water (or Hydraulics).

The reinforcement of human and financial resources used for the mobilization of communities and women is another requirement that neither the funding agencies nor the governments seem to observe. The qualifications and the motivation of the field-workers are, however, the best guarantee for success in every grass-roots development process. The efficiency of motivated and qualified development agencies will be measured in the way that they are able to hand over the project to the villagers in a reasonable time.

X. THE BENEFITS OF A PARTICIPATORY APPROACH

We can never stress enough the importance of genuine participation in promoting the role of communities/women in rural development in general, and RWSS in particular. The data collection by and with the beneficiaries of the project, their participation in the analysis of their own situation and in the evaluation, are the first steps in recognizing them as full owners of the systems and partners in the process. Only then does the program acquire the consistency and flexibility to remove the bottlenecks which jeopardized villagers' self-promotion, their participation in needs assessment, in the definition of roles, in cost recovery, in facilities maintenance and exploitation and in health education.

This participation and these methods establish an enabling environment for a multidimensional development.

Since independence, African countries have experienced much in the area of mobilization of people and grass-roots training. Software ministries execute these programs at the national level. They often benefit from the assistance of non-governmental organizations (NGOs).

Approaches and methods of intervention still prevailing in this field, consist in studying the practices, beliefs and needs of the people and by designing messages in light of the data collected. These didactic methods, which are valuable to some extent, suppose that the trainer is the one who has the knowledge to be transmitted to the communities.

Community participation relies on the conviction that communities have their own resources and potential which can and must be mobilized in the process of problem solving. Training thus is to be understood as developing their ability to solve problems by means of internal and external resources, if needed.

The participatory approach does not deny the role of project managers, it is its redefinition. The decision maker, who has succeeded in providing the required flexibility through participatory methods, plays essentially on the role of catalyst, proposing the

information and needed resources, and responds to the communities and women. Such a decision maker thus has a program which is flexible and in accordance with the evolution of the environment.

XI. BEYOND THE DECADE

In 1985, the General Secretariat of UN, in its report of the results achieved by mid-Decade, underlined the importance of the achievements and the necessity to intensify efforts in Sub-Saharan Africa (SSA). The Declaration of Abidjan, issued at the International Seminar held in 1986, defines, in 5 points, a strategy for community participation, especially for women, as one of the main components.

This participation is far from being effective at the end of IDWSSD, especially because of approaches and methods which do not properly take into consideration the relationships between women and the socioeconomic, political and financial environment.

This document, far from being exhaustive, may serve as a means of raising some questions for discussion in the Working Groups which will examine the implications of communities'/women's participation in terms of capacity building, institutional strengthening, resource mobilization and sector planning.

On the institutional level, the major challenge is decentralization, concentration, coordination and better management and resource utilization which are essential in overcoming a too sectoral approach.

In resource mobilization, equitable or judicious sharing of responsibilities between governments and funding agencies is vital. Particular attention needs to be paid to economically weak members of the population who suffer from the effects of the economic crisis and structural adjustment policies. Economic pressure and deprivation can only push them towards risky solutions including the use of polluted water sources.

Sectoral policies need to be rethought and redefined in terms of the above-mentioned socioeconomic and cultural demands. These policies foresee and provide themselves with the means to act: technicians conscious of the importance of communities'/women's involvement and working hand in hand with qualified, motivated field workers who are sufficient in numbers and provided with adequate material resources. Participatory research, training, monitoring and evaluation taking into account communities, including women, their creativity, socio-cultural and socioeconomic specificities are remarkable tools for change that the countries of SSA should exploit.

PRESENTATION OF POSITION PAPER 2: THE ROLE OF COMMUNITIES AND WOMEN IN RURAL WATER SUPPLY AND SANITATION

Mrs. Aminata Traore of PROWWESS/Africa introduced her paper, "The Role of Communities and Women in Rural Water Supply and Sanitation (RWSS)," in plenary session. She began by drawing attention to the following responsibilities of women in the villages: (i) carrying, managing and distributing water for household use; (ii) providing households with staple foods and preparing meals; (iii) caring for and educating children; (iv) cash crop farming; and (v) providing health care.

In many households, young girls assist with these responsibilities, but like their mothers very often their contributions are overlooked. Mrs. Traore lamented that governments have placed too much emphasis on the provision of RWSS hardware and not enough on the participation of the users--and especially of women. Thus, the government has missed important opportunities for capacity building. Engineering training does not adequately incorporate the role of women.

Mrs. Traore stated that while community participation is not a new concept, its benefits are only now becoming apparent. It is a complex issue, and an integrated approach in RWSS development demands that technical, financial, institutional, economic, human and cultural factors be properly addressed. She acknowledged that more agencies are now looking to women's participation, since, as victims of water shortages and pump failures, they are more acutely aware of the importance of operations and maintenance.

Regarding aspects of cost recovery, the speaker stated that in many societies women are considered better managers of public funds. Therefore, they are deemed capable of ensuring the availability of funds both for initial capital participation and for the purchase of spare parts. However, cost recovery is not automatically assured, since water must compete with other demands such as education, health and other basic services. But, as RWSS is part of rural development, it must occur with attractive economic opportunities based on community involvement; this may then improve the cost recovery potential for RWSS. The enabling environment is particularly important for improving women's productivity. Mrs. Traore considers women's education and employment to be the most decisive factors in the promotion of new behavior in the domain of water, personal hygiene and environmental sanitation, as well as in the reduction of fertility rates.

The speaker described participatory structures for RWSS delivery including village water committees and other indigenous structures as well as inter-institutional cooperation and resource management. However, the relationship between water, hygiene and health needs to be better understood. Decision makers and communities who focus more on water needs and pay little attention to hygiene and sanitation--the more covert aspects of village life--can severely prejudice the provision of water.

In conclusion, Mrs. Traore stated that African decision makers, technicians and external support agencies must take a more determined approach towards considering the relationships between women and the socioeconomic, political and financial environment, in fact the entire human factor in general. Sectoral policies need to be rethought and redefined in socioeconomic and cultural terms, with special emphasis on institutional decentralization, improved resource mobilization, and more participatory research, training, monitoring and evaluation.

DISCUSSION OF POSITION PAPERS NO. 1 AND 2

Due to the complementarity of the two papers, they were presented in succession and then discussed together in plenary session. There was much support for the opinions expressed by the presenters and in the two papers. The following is a summary of the main points raised.

The first discussant expressed some concern that the fad of the role of women in solving water supply problems may convert them into machine operators. He emphasized that for years women in Africa have played an important role which, although not very visible, could be compared to that of an understudy or a prompter. It seemed to him that the role of women in rural water supply and sanitation (RWSS) programs should be strengthened through feminist organizations by education and training activities so that women could be more apt to prompt or exert pressure on men to be more responsible for water installations. He noted that water gathering is also a social activity, providing an opportunity for women to chat and discuss, and that if they were deprived of this activity (through improved water systems) they might not be willing to assure the upkeep of the system. The discussant also stressed that when there is a water distribution system in rural areas the women's schedule becomes disrupted. He suggested that women be mobilized to put pressure on men to maintain the system in the same manner as when they desire from them some article of clothing. Women must be the driving force to motivate men to repair and to maintain existing water points, because they are the ones who suffer without water.

A second discussant stated that an improvement of the population's health and productivity is certainly more significant than the time saved in searching for water. He then commented on Mrs. Traore's presentation and the point she raised concerning the role of women in family planning. Referring to Niger, with a population of 7 million and a population growth rate of 3.1 percent, he noted that all the water points installed during the Decade did not keep pace with population growth. He contended that women are at the center of family planning and that if progress is made in RWSS in the coming years they must become involved.

A third delegate from Malawi who commented on Mrs. Traore's presentation, believes that contradictory issues had been raised regarding the notion that women should not be involved with the construction aspects of the projects. He stated that if women are going to be involved, they should participate in all aspects--development, planning, implementation and maintenance efforts. He noted that the main beneficiaries of water supply systems are, ultimately, women, and that if the responsibility of deciding on water supply is left to men, or for the better part to men, then some of the projects will be delayed. He also cited the population factor: women represent the majority in certain areas. Thus, if they are not involved in project implementation, projects will take much longer to be realized. In certain cases, donors might think that women are not interested in projects. He also discussed the social factor and cited his country as an example, noting that there are differences in the way people perceive women. In some areas, women are fully involved in the construction, digging out trenches, etc. This has not upset people at all because the whole exercise is planned by the community. But there are other parts of the country where men, because they do not want to see their women digging trenches, do it themselves. He noted that in those areas projects are not realized as fast. For this particular reason social factors have to be taken into consideration when attempts are made to implement projects.

A delegate from Togo supported Mrs. Traore's view that women play a very important role in water gathering. He acknowledged that installing water points close to the women allowed them to save time. Considering the amount of time they save, he does not think it is too much to ask for them to participate in the maintenance and operation of water points. He also believes that it is up to others to see how the time saved could be used to develop lucrative activities. He stated that he would like the delegates to look for incentives for women to reduce their time in gathering water as they address the problem.

A representative from the World Health Organization Collaborative Center for Research, Training and Control for Guinea Worm Disease at the Center for Disease Control in United States wished to draw attention to the Third Annual Regional Conference on the elimination or eradication of Guinea Worm disease which was held in Yamoussoukro in March 1990. During the conference, all 17 endemic countries in Africa were represented by 125 participants. The conference

made three recommendations which pertain to the Workshop agenda, and with the permission of the Chairman, he read them. The Yamoussoukro conference recommends that sponsoring agencies emphasize the progress realized to date and the need for a Guinea Worm eradication initiative. The Yamoussoukro conference further stressed the urgent need for water supply projects to include effective health education and social mobilization to be brought to bear more effectively in endemic villages. Priority should be given to the most highly endemic villages for RWSS and other primary health care interventions. Furthermore, the Yamoussoukro conference emphasized the critical relevance to this eradication initiative of accelerated support for RWSS activities beyond the end of the International Drinking Water Supply and Sanitation Decade. The reason for this is that *Dracunculiasis* is a disease of people who live in very remote areas and are in great measure disenfranchised from the political process. Every year Guinea Worm affects five to ten million people in these very remote areas, and the infection prevents affected individuals from working for a period which may vary from two weeks to three months, depending on the number of worms which emerge and the location of the emergence. For these reasons, the disease has a very severe impact on agricultural productivity in endemic populations. Furthermore, it affects school attendance by children because they are disabled and are unable to attend school *if* there are schools available. In addition, it affects maternal child health. For example, disabled mothers cannot take their children to be vaccinated. Guinea Worm-endemic villages account for but a fraction of all the villages in the countries which do not have safe drinking water. Taking Nigeria as an example, the discussant indicated that during 1989, 622,000 cases of Guinea Worm diseases in approximately 6,500 villages throughout the country were counted. Guinea Worm disease is prevalent in only a small fraction of the approximately 90,000 villages which do not have access to drinking water supply. For this reason, endemic villages should be targeted for the provision of safe drinking water wherever feasible. The quoted figures are linked to the quality and quantity of water. The discussant argued that for a very small increment in the quality of water, Guinea Worm disease could disappear. Safe water--water that does not contain the intermediate host for these parasites--must become available. This does not necessarily mean water of greatly improved bacteriological and chemical quality, but rather water that is simply free of the intermediate host. For these reasons there is an increasing need to link water supply projects in endemic countries with initiatives for Guinea Worm eradication. Each endemic country in Africa this year will complete plans or will be in the process of implementing plans for conducting a national search to define the extent, incidence and location of Guinea Worm disease. With these results in hand, each country will have a detailed list of all the villages where Guinea Worm disease occurs. Once the information is available, it will be extremely important for water supply projects and the national eradication programs to link efforts so that villages with Guinea Worm disease can be targeted as a priority for provision of safe water.

A sixth discussant addressed a question to the author of the first position paper, concerning the shift from a centralized system to a system based on actual demand. He wondered how the shift could be implemented on the project, community and national levels and how the interaction of the actual demand (which is a matter of cost) could be conceptualized. He believes that the centralized level allows for a certain justice. The discussant congratulated Mrs. Traore for putting the finger on the real issue: the problem is not one of women in development but of community development. He thanked her for her plea for community action because not only women's behavior, but men's also, must be changed. He stated that in the context of African countries everyone knows that in order to modify women's behavior, one must first go through the men's.

The panelists were then invited by the Chairman to respond to the points made by the several discussants. Mrs. Traore began by saying that if she has provoked the audience she felt that she had reached her goal. She believed that women's participation does not leave people nonplus. She expressed her pleasure that the technicians present in the meeting had concrete examples from their respective countries on the participation of women in RWSS.

She agreed with the representative of Zaire that women are a driving force in community mobilization and that everything is not roses for them. From a social and juridical standpoint, they are disadvantaged in most regions. Although she did not want to go into details which would not be constructive for the

present discussion, she wished to point out that there is a tendency to emphasize situations where women are marginalized, and thus their potential role is masked. Women are very persuasive. Mrs. Traore mentioned that she has seen that in some regions--in Niger, for example--men were reluctant to pay back fees for irrigation schemes. When the women noticed that men did not want to pay for the water which allowed them to cultivate vegetables, they organized themselves and put pressure on the men. In the end the men had to pay. Women know how to organize their activities if they want something. Clearly they do not need anybody to organize them.

On the subject of the time spent in gathering water and socializing, Mrs. Traore thought that one must order priorities and clearly draw the line between what is fundamental and what is not. In that respect, water is a priority and people organize themselves around water points. Villages exist around water points or along rivers. If the source runs dry, people move out. She has seen many deserted villages whose inhabitants moved out of the area because their source of water dried out. Life revolves around water points and populations face various situations in a dynamic way. Populations have a lot of freedom and the capacity to find solutions to new problems.

Mrs. Traore recalled that when she was a little girl she would fetch water for her mother quite a distance from her home. When a fountain became available in the village and there was no more need to walk very far, she still went to the fountain, still discussed with the women and everybody found it equally pleasant. Once women did have to spend so much time gathering water, they found other activities to occupy their time. Mrs. Traore said that she is convinced that if we can manage in the future to put in place a participatory system for the communities to make their own decisions, the concern of how women are going to utilize their time will disappear. All technical improvements within a village introduce new behavior, new horizons. The communities must be given the elements necessary to make their own decisions and the importance of water must be emphasized. She believes that we must be attentive to what the communities are saying. Are people asking for water? We have seen campaign promises made and water points created--free of charge--in many places and given to the communities. Yet those water points are not well maintained and they never work well. Therefore, the demand for water supply has to be an effective demand so that water points are well managed and communities find their own solutions when problems arise.

Mrs. Traore mentioned that if she had not been to school, if she had not found work, she could not have answered many of the questions. Thus she drew the conclusion that education and employment are the most important solutions for bringing about new behavior in water, body and environmental hygiene. Although she discussed only briefly the issues of family planning in her paper, she acknowledged that it is an important issue and that women are at the center of health structures, of the management of water points and of income generation in the agricultural sector. It boils down to the fact that it is a matter of project "of society, of communities." She asked the delegates, "What do we want the African society to be? Do we want women with ten children going to fetch water with a child on their back?" Mrs. Traore concluded her remarks on this particular topic by saying that the issue had to be dealt with in a responsible manner and that maybe the working groups could discuss in particular the role of international cooperation in the matter.

In response to the question asked by the discussant from Malawi, Mrs. Traore explained that there are in Africa as many situations as there are countries on the Continent. She said that she is aware that there are countries where men have left and the majority of the women have had to take charge of most of the actions and daily activities. For those projects it is the women who are the beneficiaries. Mrs. Traore explained that she did not mean to imply that women should not participate in the construction but rather that one must be careful. While women are entitled to drinkable water and to a healthy environment, its fulfillment should not necessarily mean additional work for them. She believes that it is unfortunate that we only speak in terms of our own interests. When we consider the role of women we must consider them entire beings, even in their capacity to participate in the decision-making process, which might very well be in mixed audiences. One should not consider the participation of women, or the role of women, from a purely economic point of view (i.e., that their participation might reduce the cost of the project), but one should

discuss with women their role in the construction of the project so they sense its necessity, so they accept it, so they feel that a minimum of justice exists and so they are aware that when they carry pipes they do it for themselves and thus they accept it. Otherwise women will become used and abused cheap labor.

Mrs. Traore recalled that in Malawi, as in many other countries north of the River Senegal, men are free and women have to take on certain responsibilities. Responsibilities are not always interchangeable, but behavior modifications result from social changes. Women can be called on to take new responsibilities, provided that those changes are not motivated by the interests of the project or the objectives unilaterally decided by those who designed the project.

On the issue brought up by the discussant from Togo, Mrs. Traore replied that asking women to take care of maintenance was not asking for too much provided that women participated in the decision-making process, in the construction, in all the development stages of the project. Then she expounded on the practical implications of her statement for the future: Is it feasible? Is it the way the population feels things should be done? She said that she could foresee women becoming mechanics and some women being promoted to a more important role, but what would the other implications be? The situation and the role of women must be understood by the whole society, by the whole community, otherwise women will become "elements" and this has far-reaching implications.

Mr. Rasmusson referred to the Guinea Worm presentation and said that it was also mentioned in his position paper on RWSS in rural development. As far as he knew, in any country where programs are being prepared for the extension of RWSS facilities, areas infected by Guinea Worms do have high priority. He said that it is rather easy to eradicate Guinea Worm infection: it is a matter of protecting the water source and of improving the quality of the water.

On the question of time saved, Mr. Rasmusson said that time saved can either be used to increase productivity or for non-productive activities. Rather, the question which should be asked is, "How do we value that time saved and how do we include it in qualitative and financial or economic analyses so we can justify the investments to be made in RWSS?" After all, we must try to attract more funds to the sector and this can only be done by devising tools to justify increased investments and to point out the specific benefits that derive from improved water supply and sanitation.

POSITION PAPER 3

TECHNOLOGY DEVELOPMENT

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TECHNOLOGY DEVELOPMENT

SUMMARY

In an environment in which technology development remains heavily oriented to the needs and markets of the developed world, the 1980s has seen the resurgence of low-cost technology development more appropriate to the needs of the countries of Sub-Saharan Africa (SSA). Innovative approaches have been the driving force behind sector programs in many countries. The paper reviews the major achievements in low-cost sector technology development in recent years, focussing particularly on handpump and pit latrine development. The factors affecting technology choice are reviewed and a model of typical costs is presented.

Issues of relevance to policy makers regarding further technology development, marketing and manufacture are highlighted. These include:

- Creating a favorable environment for the public sector to fulfill promotional and regulatory functions
- Building local manufacturing capacity
- Facilitating growth of local well/borehole drilling industries
- Establishing technology standards without limiting innovation or inhibiting incremental improvements

I. INTRODUCTION

Despite the fact that the great majority of the world's population is without access to safe and convenient drinking water and sanitation services, the main thrust of water and sanitation technology development remains concerned with technologies suited to industrial countries. As a result, much of the technology available is designed to meet the needs and ability to pay of industrial country consumers and requires an environment with ready access to reliable energy sources, spare parts and skilled installation and maintenance services.

Perhaps the most significant achievement of the decade of the 80s for the RWSS sector in sub-Saharan Africa has been the development and application of a range of technologies well-suited to rural African conditions. Technical advances have included innovative approaches to long standing problems of maintenance and construction, adaptation of technical design to the constraints of skills and spare parts availability, use of improved manufacturing and construction technologies, improvement in quality control, use of appropriate materials and areas of flexibility for adaptation to differing local conditions.

As a result, RWSS technology has been the driving force behind many of the most successful programs on the sub-continent, from handpumps in Côte d'Ivoire or Kenya to gravity-fed reticulation schemes in Rwanda or Malawi to ventilated improved pit latrines in Zimbabwe. These advances create considerable potential for further sector development. The realization of this potential will depend on policy makers' ability to create institutional and financial environments conducive to the development of sustainable programs. If the 80s has been a decade of technology refinement, the central challenges of the 90s will be to create policy environments which facilitate technology adoption and encourage the production, manufacture and marketing of these technologies.

II. OBJECTIVES

The paper has three main aims:

- to review the major lessons and achievements of RWSS technology development in rural SSA in recent years
- to identify the range of options available and areas for further development
- to review the challenges facing policymakers for manufacture and marketing of RWSS technologies

III. TECHNOLOGY DEVELOPMENT

The purpose of this section is not to review all the options and technical advances made, but rather to present highlights, particularly with respect to groundwater abstraction and on-site sanitation technologies. The bibliography presents a few key publications which provide further information on the state of the art of RWSS technologies.

Rural Water Supply

Water resource conditions differ widely across the sub-continent and within most individual countries. Effective techniques have been developed for both surface water and groundwater provision.

- **Surface Water Sources**

  Spring Protection and Gravity-Fed Supplies: Where perennial, upland, protected, potable surface water sources are available (springs or mountain streams), gravity-fed reticulation is a proven and effective technique. In the case of springs close to settlements, simple spring protection has significant merit. Gravity-fed supplies have had success in providing reliable and continuous services.

  Water Treatment: In an environment where skilled operators and uninterrupted supplies of spare parts, fuel and chemicals are available, treated water from rivers and lakes can also provide good service. Few situations in rural Africa have these prerequisites, resulting in difficulties with operation and maintenance and frequent breakdowns of the system, with inherent health risks.

  In this context the past decade has seen a return to, and further development of, water treatment methods better suited to African conditions. Slow sand filters, roughing filters and other treatment plant technology have recently received considerable attention because of their simple operation and low maintenance requirements. Box 1 reviews information on the major technical water treatment advances appropriate for rural SSA.

- **Groundwater Sources**

  By comparison with surface water sources, groundwater sources have several important advantages. Groundwater rarely needs treatment; provides a substantial storage buffer to cope with droughts and seasonal variations in supply and demand; allows the community to manage and maintain the system more effectively because the entire system is located in or near the community; and capital investments are also less substantial.

Perhaps the central area of concern in RWSS technical development in recent years has been handpump development. Manufacturers have generally taken two routes in handpump design. One has been towards "durability" - to make pumps that break down less often, minimizing repair by maintenance teams. The other is towards "maintainability" - to make more easily-maintained pumps that can be repaired by the users or local mechanics, without the need for lifting-tackle.

The "unbreakable" pump has proved impossible to make and reliance on public sector maintenance teams too costly. The current trend in many countries is, therefore, to make pumps that can be repaired by local mechanics. The potential has now been created for the replacement of pumps which formerly had to be extracted with lifting-tackle and entirely dismantled to replace a simple seal. "User friendly" pumps can now have the same repair completed within a few minutes by one man or woman in the community. In addition, corrosion-resistant plastic materials have found their way into handpump design, eliminating a source of user dissatisfaction with handpumps, namely, corrosion of the galvanized rising main components which gives the water an unpleasant taste and discolors food and clothing.

Solar pumps are an increasingly attractive option. Over 300 solar pumping systems are presently operating in West Africa, most of them in the Sahel. The major constraints to widespread adoption--high capital, maintenance and repair costs--have diminished to some extent. Box 2 presents further details about trends in technology advance in groundwater extraction techniques and equipment. Box 3 describes the successful development of a community-maintainable pump.

BOX 1

Technical Advances in Water Treatment

Recent years have seen a return to tried and tested methods of water treatment, and the reemergence of techniques that minimize the requirement of a continuous supply of chemicals, fuel, spare parts and skills.

Slow Sand Filters: Where there is no groundwater and surface water is available but is moderately polluted and turbid, slow sand filtration is likely to be one of the simplest, most economical and most reliable methods of producing safe drinking water. Limited chemicals and mechanical equipment are needed. In a slow sand filter, water percolates slowly through a porous sand bed and in the process suspended particles are retained and organic materials removed by a combination of filtration and biological action. Suspended solids removal is typically about 95 percent and only 1 in 10,000 coliform bacteria survive (99.999 percent removal). Over time, a biologically active film builds up at the surface of the filter bed which must be controlled by scraping off the top few centimeters. In more polluted waters, disinfection can be included in the design but this is only recommended where chlorine will be available on a continuous basis.

Roughing Filters: Reasonable operation of slow sand filters is only possible with raw water of low turbidity. As a result, pre-treatment of generally turbid surface water is necessary. Chemical water treatment processes are used extensively, but roughing gravel filters have recently received considerable attention because of their simple design and reliable operation. The combination of roughing and slow sand filters will undoubtedly be increasingly used in coming years. The direction of flow in a roughing filter can be up, down or horizontal. Also, it is typical to flow the water through a series of cells with decreasing sand particle sizes, this maximizes removal efficiencies while extending the time between backwashing. Studies are currently underway to better match the media size to the raw water characteristics in order to determine the factors that favor particular direction flows.

New Water Treatment Technology: Conventional water treatment plants have a high dependency on electro-mechanical equipment and advanced technical skills. Difficulties in operation and maintenance are often experienced in environments where there is scarcity of adequate technical skills and unavailability of spare parts. As a result, water treatment installations have rapidly deteriorated, often requiring external interventions for rehabilitation and operation and maintenance.

Since 1970 (and even earlier in some regions), simplified water treatment technology has been developed to replace conventional systems. Technologies developed in Latin America to resolve the problems of poor operation and maintenance are also appropriate to the African situation. Treatment plants have been built with considerable elimination of electro-mechanical equipment and greater introduction of hydraulic or gravity-orientated operations, thus reducing dependency on advanced technical skills and ensuring fewer plant breakdowns.

Chemical dosing is usually made by gravity feeders, mixing by flumes or weirs, flocculation for small plants by hydraulic drives, sedimentation using plate settlers, desludging by syphons and backwashing of filters by hydraulic operations. The advantages of these procedures are:

- Process simplification and minimum use of mechanical equipment, such as the elimination of head-loss recorders, flow-rate controllers, filter pipe galleries, pumping equipment, wash water tanks and regulating valves.
- Less advanced technical skills are required for operation and maintenance.
- Because of the simplification, less-costly equipment is required. Simplified water treatment plants can cost between 1/4 and 1/10 of conventional plants.

African decision-makers are encouraged to consider thepotential applicability of these available technologies, which may improve the sustainability of water treatment installations and contribute to a more satisfactory and dependable water supply service to their population.

BOX 2

Technical Advances in Groundwater Extraction

1. Well/Borehole Sinking

Dug Well Sinking: Hand dug well sinking is a traditional technique in many parts of Africa. Improvement of well-sinking techniques through improved well-lining materials, equipment for excavation and water extraction, as well as better safety measures can improve construction standards and increase well depths and yields. Use of explosives in hand dug wells is a successful method in hard rock.

Hand Drilled Boreholes: The development of improved, robust and community-operable hand augurs has provided a quick and low-cost means of drilling in certain soil conditions.

Mechanized Borehole Drilling: The range of mechanized drilling equipment available in the sector has greatly expanded. Medium-weight and medium-priced rotary drilling rigs offer the best price/performance ratio. Use of oversized rigs results in unnecessarily high costs for operation and equipment amortization.

2. Handpumps

Direct-action Pumps: For pumping lifts of up to 15 meters, direct-action pumps have proved highly successful. Without a lever-handle or bearings, they are characterized by their simplicity, low cost and ease of repair. They are ideal pumps for village-based maintenance. The most successful have been the Tara and the Nira pumps. In Africa, up to 50 percent of all handpumps could be direct-action.

High-lift Pumps: The India Mark II/III is the most common pump in both Asia and Africa. Its phenomenal success in India, where more than a million have been installed, has not been replicated in Africa. A major reason for this is that its galvanized steel pump rods and rising mains are susceptible to corrosion in groundwater of pH 6.5 or less. This is no minor problem since more than half the well sites in West Africa are in this category. While it has been the standard by which to judge performance and reliability of the latest generation of handpumps in the last decade, the India Mark II and III still remains difficult to repair. For pumping lifts of up to 45 meters, easy-to-repair high lift pumps have been designed. These are typified by the Volanta, Vergnet and Afridev handpumps, all of which were developed in Africa. Box 3 provides further information on the Afridev.

3. Solar Pumps

A typical solar pumping system is composed of: a photovoltaic panel to convert solar energy to electrical energy; an invertor to transform the DC output of the panel into alternating current required to operate the pump; a submersible electric pump; accessories such as the rising main, water level controls, flow meter and wiring; and a water storage tank. The power of typical systems designed for groundwater pumping ranges from 600 to 4000 $Watts_{peak}$, equivalent to a water delivery of about 15 to 100 cubic meters per day at a pumping lift of 25 meters. Such systems are suitable for communities having 700 to 5000 residents, assuming that their water consumption is 20 liters per person per day.

The trend in solar pumps has been towards high-efficiency AC motors operated at low voltages of 60 to 120 V (Grundfos of Denmark) and standard 3-phase 380 V AC motors (Total of France and Italsolar of Italy). Within the next 5 years, low-power pumping systems (150 to 250 $Watts_{peak}$) with yields from 5 to 20 cubic meter/day are likely to be developed commercially using DC motors and amorphous silicon (Chronar of the USA). Their potentially low price could make them competitive with handpumps for communities of between 500 and 1000 people.

Normal repairs include: partial re-wiring of the array; exchange of the invertor; exchange of the pump and motor; repairs to the rising main. Both the pump and the photovoltaic array are now very reliable, with a life expectancy of 8 years for the pump and at least 20 years for the array. Breakdowns are generally due to wiring or invertor problems. While all these repairs can be performed by a technician, with the help of semi-skilled workers, private maintenance schemes are feasible only if a critical mass of concentrated installations (not less than 20) is reached, making it viable for a private company to invest in vehicles and spare parts.

BOX 3

Development of the Afridev Handpump

The Afridev is a deep well handpump designed for rural African conditions and developed with the support of the United Nations Development Programme/World Bank Water and Sanitation Program. The objectives in designing the pump have been to develop a community-maintainable pump and one that could be manufactured in African countries with limited industrial resources. The pump has evolved from prototypes developed in Malawi, field trials in many East African countries and extensive laboratory testing by many European organizations to a stage where it is now in mass production. Manufacturing capacity is currently being developed in Kenya, Malawi, Pakistan and India and is also planned for Nigeria and Ethiopia. Plastics research and development has played a vital role in the success of the project. The Afridev incorporates many of the concepts that are important for community based management:

- moderate purchase price
- inexpensive wearing parts
- rising main and cylinder diameters suited for the strength of plastic
- repairable by community members
- design in the public domain
- can be manufactured locally at prices competitive in the international market

The pumphead is an all-steel fabrication especially designed for easy maintenance and manufacture. The replacement of the fulcrum and hangar bearings can be carried out quickly and simply with a single spanner. To prevent nuts from being lost, nuts and bolts need only be slackened and cannot be removed.

The pump rods are joined without tools using easy-to-fasten hooked connections, and the rods, plunger and footvalve can be removed from a deep well with one tool. The pump is designed to give a good yield and reduce pump forces by using a standard-sized, small diameter, long length cylinder.

Standardization means limited spares requirements, reduced forces means lighter components which are cheaper and easier to remove for maintenance, and a higher yield gives greater potential for multi-purpose water use--drinking water, small-scale gardening, cattle watering--from the same water source.

The pump incorporates industrial design processes, such as the snap-together pumphead bearings, and utilizes high quality injection moulded plastic components which can be mass produced and supplied at low cost.

Low Cost Sanitation

The conventional excreta disposal method in developed countries is cistern-flush toilets with sewerage drainage systems. But this method is generally inappropriate outside of the urban environment in view of the high costs of construction and maintenance, limited availability of piped water supplies and the absence of suitable treatment and disposal facilities. However, the last ten years has seen a renaissance in the development and promotion of on-site sanitation systems in rural and peri-urban areas, supported and encouraged by the International Drinking Water Supply and Sanitation Decade (IDWSSD), providing significant health benefits at considerably lower cost. The most significant advance in sub-Saharan Africa has been the development of the ventilated improved pit-latrine (VIP). Further development of the key concepts of this simple technology, specifically its fly and odor control capabilities, have enabled the spawning of a wide array of VIP options, facilitating adaptation to the availability of local materials, differing cultural preferences and levels of affordability. Box 4 presents a technical summary of the recent advances in sanitation technology.

BOX 4

Technical Advances in Low-Cost Sanitation

1. Ventilated Improved Pit Latrines

The ventilated improved pit (VIP) latrine is superior in many respects to the conventional pit latrine. A vent pipe eliminates odors by creating an airflow through the latrine interior and up the vent pipe. Flies are controlled by limiting the light entering the pit through the squat-hole or seat from interior of the latrine, requiring that latrine roofs are essential and doors that can be left open are discouraged. Flies are also prevented from leaving the latrine pit by incorporating a durable (steel or aluminum) screen in the vent pipe. In most soil conditions washing in latrines is encouraged for hygiene reasons, but also because it can promote biological action in pits and increase pit life.

VIP cost ranges are from $20 to $300. Non-porous pit linings may also be required in unstable soils which can add up to $75 to the latrine cost. A wide range of materials and designs can be used for the superstructure, from thatch to bricks to ferro-cement, with costs varying according to availability of local materials and willingness to pay. In cultures with traditional brick production, cement-plastered brick walls can be a durable and attractive solution. In general, structures using large amounts of wood should be discouraged. A measure of balance between housing and latrine materials is desirable.

Either single or double pits can be installed. Single pits are less expensive but require a new pit to be dug every 8 to 15 years. Double pits are more expensive but can provide a permanent structure and better accommodate families for whom cultural taboos prevent entire households sharing a single latrine. A resting period of 18 to 24 months is required for die-off of pathogens and decomposition of waste materials. Hence, the retention time for double pits can be shorter than for single pit latrines and the dried solids can be used as fertilizer on household plots.

2. Pour-Flush Toilets

A development of major importance in Asia has been the further development of the pour flush toilet. There are some African populations, particularly where water is used for anal cleansing, for which it is also well suited. The pour flush toilet is essentially a simplification of the flush toilet/septic tank combination where a pour flush bowl is connected by a short section of pipe to an offset leach pit. One to two liters of water are required for flushing and a water seal prevents flies and odors.

3. Septic Tank

Septic tanks have limited application in rural communities, except in the homes of those with house connections and internal plumbing. Their design has not changed in the last decade but more is known about the design parameters of the drain field. Because long term infiltration capacity is proportional to the permeability of the soil, care must be taken to size the drain field properly. The use of twin pits can increase infiltration capacity and allow for regeneration of the drainage fields.

IV. TECHNOLOGY CHOICE

The range of technological options that have been developed not only provide for solutions in different environments but provide consumers with a wider choice to suit particular needs and cultural preferences and differing abilities to pay. The potential has been created now to be able to respond to an increased range of demand.

In any particular setting the technology chosen should give the highest service level for which users are willing and able to pay, which give users the greatest benefits and which is sustainable within the given institutional capacity. The choice of technology should ultimately be the consumers', since they should assume responsibility for at least part of the capital cost and all of the operation and maintenance costs of their facility. Affordability is the overriding consideration in technology selection. Box 5 presents a model, based on a set of base conditions for a "prototype community", comparing the costs of different pumping technologies.

BOX 5

Model for Rural Water Pumping Technology Costs

1. Service Levels Community perception of an improved water supply will largely be determined by the service level provided. This perception will be critical in convincing the community to pay for a portion (or all) of the costs of the system. Service levels comprise many factors, including the quantity and quality of the water, the amount of time needed to collect water and the reliability of the system. If water quality and reliability are similar for different systems, then service levels fall into two groups, point sources from which households must carry water home and yard taps which deliver water to the home. Handpumps and standpipes provide roughly the same level of service while yard tap systems potentially offer better service, if they are reliable. As shown in Figure 5.1, the cost of water increases substantially when the service level shifts from point sources (about $4/person/year) to yard taps (about $12/person/year). The increased cost of yard taps is due to higher water consumption and piping costs.

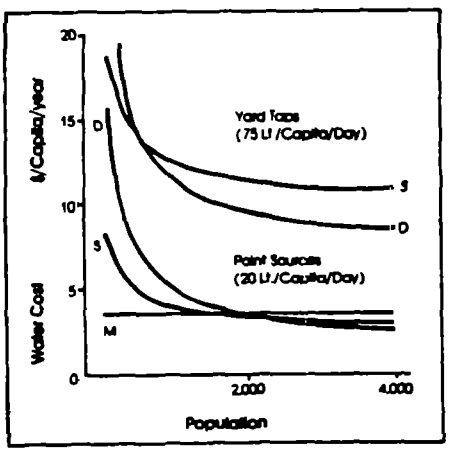

Figure 5.1

2. Type of Pump Electric pumps are a proven technology that can reliably provide large quantities of water. Wherever a community is served by an electricity supply that is not subject to frequent power shortages, electric pumps are likely to be the technology of choice. Diesel pumps, usually consisting of a diesel/generator set with electrical submersible pump, are more problematic because of their complexity and cost. For lifts of less than 7 meters, surface mounted gas or diesel powered pumps are a good alternative, and for higher lifts jet pumps can be used in small communities. Communities may also encounter difficulties maintaining regular fuel supplies but the cost of fuel itself constitutes only about 15 percent of operation and maintenance costs and 5 percent of total costs. Manual, solar and wind pumps have an advantage over diesel in that they are not dependent on external fuel supplies. Solar energy is potentially well-suited to equatorial countries because of the high and consistent solar radiation they receive throughout the year. As the cost of photovoltaic panels decreases and as confidence in their reliability rises, solar pumps will play an increasingly important role in RWS. Wind pumps, however, will continue to have limited application because winds of sufficient speed and reliability to make them economical occur in relatively few locations. Handpumps provide basic service to households for pumping lifts of up to about 45 meters. Beyond this depth, manual pumps require more energy than people can comfortably generate.

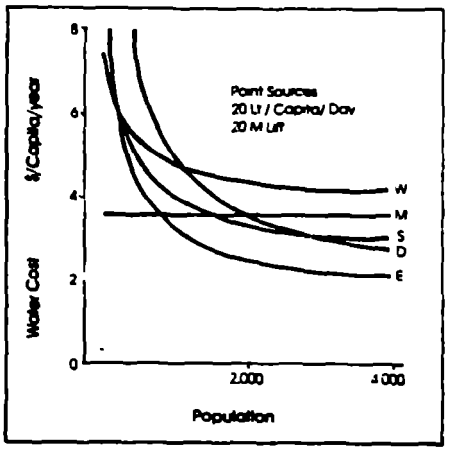

Figure 5.2

The curve in Figure 5.2 shows the annualized pumping cost of water ($/capita/year) for Manual, Electric, Diesel, Solar, and Wind pumps as a function of community population. Because handpumps have a limited capacity (about 5 m^3/day), additional wells must be added to keep the service level constant (at 250 people per handpump) so on a per capita basis the cost of manual pumping does not vary with population. Other types of pumps are not limited by the rate of energy a person can produce and so require only a single well (assuming well capacity is sufficient) and exhibit significant economies of scale. Diesel pumps have the greatest economies of scale because the engine is expensive and its price varies little with capacity in the output ranges required for a small community water supply. Wind and solar are in proportion to the power that is required, so they exhibit somewhat reduced economies of scale. As a result, at 20 l/capita/day water consumption and a 20 meter pumping lift, the least cost alternatives are handpumps for populations under about 1000, solar pumps between 1000 and 2500 and diesel pumps above 2500. Even for larger communities, there is little difference in cost between solar and diesel pumps if water consumption is low. However, as water consumption increases, as for example with yard taps, diesel pumps will become significantly less expensive. Electric pumps provide water at least cost in all but the smallest communities if no extension to the electricity grid is required.

Model for Rural Water Pumping Technology Costs

3. Well Cost Well cost can vary from as little as $200 per well in Bangladesh, where artisans use the 'sludger' method to drill as deep as 50 meters in alluvial soils, to more than $15,000 in some areas of West Africa. Well costs are largely dependent on external factors, such as; construction management efficiency, type of well drilling rig, competition between drillers, number of wells constructed per year, promptness of payment and amount of expatriate involvement. Where these factors are favorable, such as in India, well costs in the range of $2,000 to $3,000 are possible. Pricing under $5,000 is a more realistic target in Africa. Efforts must be made to reduce the costs of wells since it would enable greatly increased coverage for the same investment.

Potential well yields can affect the choice of pumping technology. This is particularly true in the basement rocks of Africa and India where it can be difficult to site wells even to draw the minimum acceptable flow for a handpump (about 12 liters per minute), and very large drawdowns can be expected if motorized pumps are used. As a result, the cost of a well suitable for motorized pumping can increase markedly because wells may have to be bored deeper and the number of successful boreholes will decrease. In such cases, using trained geo-physicists and hydrogeologists in well siting can increase success rates and lower the average cost per successful well.

The potentially high cost of manually pumped water can be demonstrated, as shown in Figure 5.3, by keeping the number of people per water point constant at 250. In practice, however, as the cost of wells increase, a single handpump will have to serve more people. This will tend to moderate the effect of increasing well costs, but serving too many people with a single handpump will result in unacceptably low service levels.

4. Technology Choice Based on Cost Well cost, population, water use and pumping lift each affect the price of water. The combined impact of these factors on system choice, based only on price, is shown in Figures 5.4 and 5.5. Low water use, pumping lifts and well costs favor handpumps, and high water use, pumping lifts and well costs favor diesel pumps. Between these extremes, solar pumps become economic in communities of between 1,000 and 2,500 people although Figure 5.1 illustrates that solar pump installations cost very little more than diesel pump installations in larger communities, provided that water consumption remains at about the typical standpipe rate of 20 l/capita/day. If reliable electricity is available in the community, electric pumps can provide water at least cost in most communities, particularly if water consumption is high. It should be remembered, however, that whichever technology is employed, spare parts must be available and local mechanics must be capable of making all the necessary repairs or, at least, replacing the individual components.

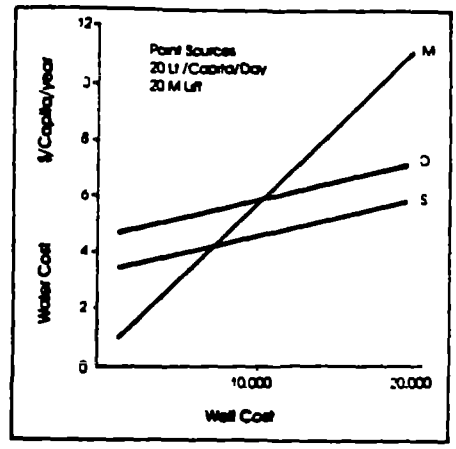

Figure 5.3

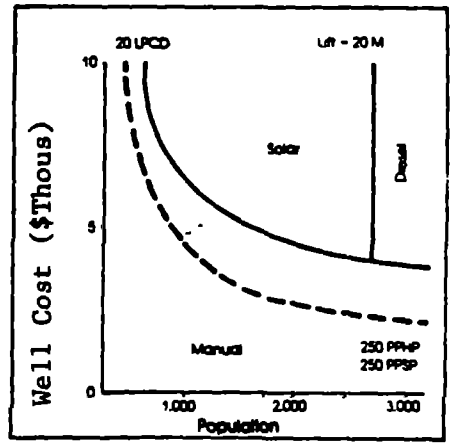

Figure 5.4

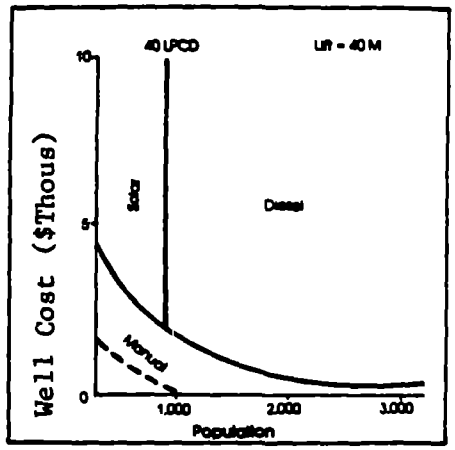

Figure 5.5

The selection of sanitation options similarly depends on many factors, of which the most important are: cost and affordability; water availability; ground conditions; the risk of water contamination; population density; the potential for future upgrading; water re-use; and cultural preferences. Box 6 presents a table comparing different sanitation systems by a variety of criteria.

BOX 6

Choosing Different Sanitation Systems

Sanitation System	*Suitable for rural areas?*	*Pop. density where suitable*	*Construction cost*	*Operation cost*	*Ease of construction*	*Water requirement*	*Permeable soil required?*	*Off-site facilities required?*
Pit latrine	Yes	L	VL	L	Very Easy	None	Yes	None
VIP latrine	Yes	L	L	L	Easy	None	Yes	None
Twin pit latrine	Yes	LM	M	L	Needs builder	None	Yes	None
Pour-flush toilet	Yes	LM	L	L	Needs builder	Water nearby	Yes	None
Septic tank & soakway	Yes	L	H	H	Needs builder	Multiple tap	Yes	Sludge disposal
Small bore sewerage (sewered pour-flush)	No	H	H	MH	Needs engineer	Yard tap	No	Sludge disposal, sewers, treatment
Sewerage	No	H	H	M	Needs engineer	Multiple tap	No	sewers, treatment

H = high M = medium L = low VL = very low

Source: Cairncross, 1988

Extending the Range of Choices: Upgrading Traditional Sources

Traditionally, in much of rural sub-Saharan Africa, water is regarded as a free resource. Despite the fact that willingness-to-pay data indicates that there is an untapped potential for payment for water from improved supplies, it remains true that ability to pay is a serious limitation. Given the considerable gap that still remains between full technology costs and willingness to pay, an incremental approach to sector provision is appropriate. A first step for the unserved population is upgrading traditional sources.

Millions of rural Africans collect drinking water daily from open dug wells and unprotected springs. Simple techniques in protecting and upgrading these traditional sources require further development and promotion. This can provide a major improvement to drinking water quality and availability and be the first and most affordable step in a sequence of improved water provision procedures. Many country programs concentrate on upgrading springs and traditional water sources and they have made good progress in countries as diverse as Sierra Leone, Zambia, and Zimbabwe.

V. POLICY ISSUES IN TECHNOLOGY DEVELOPMENT, MARKETING AND MANUFACTURE

Technology Development

The advances made in technology development derive from a more professional orientation towards developing country RWSS technologies by sector professionals, matched with longstanding research by African (and other) research institutions. Basic technologies derive much improvement and local credibility by adaptation to the local national conditions. Technologies cannot be transplanted into widely differing environments and immediately expected to take root.

Policymakers should promote the adaptation of technologies to local needs. A good example of this is the adaptation of VIP latrine technology to different settings in Africa, e.g. the modified Mozambique unlined single VIP, the Zimbabwe single Blair latrine, the Kumasi Twin Pit VIP, the Lesotho VIP etc. The policy framework required to manage this adaptation and the further development of technologies requires both initial support to

applied research bodies and collaboration with private sector manufacturers, who, once markets are established, should be able to undertake further modifications in accordance with demand. Box 7 presents a case study of the development of technology in Zimbabwe, highlighting the role of public and private sectors in RWSS technology development.

BOX 7

Technology Development in Zimbabwe

Zimbabwe has made a considerable contribution to technology development in the RWSS field. The institution at the heart of technology development has been the Blair Research Laboratory (BRL), a public-funded research institution within the Ministry of Health. BRL has, over the last decade and a half, produced a range of low-cost, innovative yet appropriate RWSS technologies. The process of technical development has, with a few exceptions, been consistent through a variety of technologies and has comprised a blend of contributions from both the public and the private sector.

The **Bucket Pump**, designed by the BRL in 1983, is an upgraded traditional bucket and windlass system which produces improved quality drinking water at low cost whilst keeping maintenance at the most basic level. After development of a prototype and modifications, it underwent operational and bacteriological trials, field evaluations in 1985 and 1987 and is now mass produced by a local, medium-sized engineering firm using production line techniques. Some 95 percent of the materials used are local and only the steel plate is imported. Over 4,000 pumps have been manufactured and currently over 100 pumps are produced every month. Many have been exported to other developing countries. The company provides training in installation and a simple tool kit and basic educational materials (produced by the Ministry of Health) with the product.

The **Vonder Rig** was developed by an engineer in response to a national drought to enable tubewells to be sunk simply and cheaply into the "overburden" above harder rock. The Vonder Rig's features are its workable and robust construction; its potential for community use—sometimes by teams of women—requiring little supervision or prior experience; and its success in drilling through soils and decomposed rock down to 30 meters. BRL has assisted in promotional work, field testing and in supporting the Rig for use on public sector programs. The firm producing the Vonder Rig has taken out patents on aspects of the design and is the sole manufacturer of the rig in Zimbabwe. The firm is a single-owner business using self-built machine tools in a mass production exercise. Production of the Vonder Rig is only a very small component in a medium-sized engineering workshop which employs a total of 110 workers. The firm places great emphasis on the quality of production. The rig is built largely from local materials utilizing only imported steel cable and steel plate. The firm has produced over 300 rigs, mostly for Zimbabwean public and private sector water agencies, but has also exported the rig to 16 other countries, mainly in Africa.

The **Bush Pump** is the current deep level and "heavy duty" handpump of choice in Zimbabwe. Its overriding strength is its durability and it remains one of the most successful and longest-used pumps in rural Africa. Standard Bush Pump designs have been produced and local manufacturers tender for orders. The current requirement is approximately 2,000 units per year. It is estimated that there are up to 15,000 Bush Pumps presently in service in the country.

The local development and manufacture of rural water technologies has benefitted Zimbabwe in a variety of ways. It has been a source of national pride and an important factor motivating efforts in program development. All the technologies have been developed for local conditions and cater also to local cultural and socioeconomic considerations. BRL's close contact with the program beneficiaries has resulted in effective and timely feedback from field trials and evaluation. Local manufacture has resulted in savings in hard currency and the export of the rural water technologies has considerable future potential.

Standardization

Standardization is useful in many ways and can be conceived of on three levels: (i) standardizing of service levels; (ii) standardizing equipment selection; and (iii) setting standards for design and production. Defining a standard range of appropriate technologies, suitable to local conditions, provides a focus for activity and investment and lays the basis for a mass program. The setting of such standards should, however, be made with the full knowledge of consumer demand and affordability since desirable but unaffordable or impractical standards can seriously constrain program development.

Adherence to a small standard range of proven technologies and equipment will increase availability, lower cost, minimize spares requirements, minimize training needs and simplify promotion. For example, limiting national programs to one or two deep- and shallow-lift handpumps achieves many efficiencies. While standardization can bring many economies, over-zealous imposition of standards may also inhibit innovation. Standardization should not limit development of simpler and affordable technology options, such as the upgrading of traditional sources. Setting design and production standards also brings many benefits, enabling better quality control, better inventory control, lower costs and provides a more stable platform for mass manufacture and distribution.

Marketing Rural Water Technologies

Choice of strategies for widespread technology adoption depends on institutional and financial environments. Typical past practices were for central government project personnel to approach a community, elicit a token contribution, request the community to decide where they want to locate their water point, bring in a government or international driller to construct the wells, install a preselected pump made in the donor country and then turn maintenance over to the local water authority or to the community. This approach, however, seldom develops the local infrastructure needed for rural communities to maintain their water supply facilities and is unsustainable by central government agencies.

Rather than assume that governments need to be the sole providers of services, widespread technology adoption demands that central agencies adopt a promotional and regulatory function in service provision. The beneficiaries thereby take the lead position in requesting, installing and paying for new water supply services. This approach brings a new perspective to typical current service extension approaches. The concept of marketing technologies replaces that of service extension. In the preferred model, hardware such as handpumps and especially spare parts, would be available in local markets and trading stores. Financial support such as credit through local banks would be made available so that communities could make more expensive purchases when they do not have sufficient cash. In addition, bidding procedures must be improved to encourage qualified local contractors to contribute to sector development with good quality WSS facilities at a fair price.

Building Local Handpump Manufacture Capacity

The requirement that each community purchase its own pump will favor serious manufacturers (both national and international) who are prepared to distribute their products through regional outlets and local retail stores. It will also ensure that communities select the pumps that have proven to give the best performance at the least price.

Local manufacturers must have a market for their pump before they can justify the necessary investment in materials and tooling-up. This requires an effort on the part of government and donors to facilitate the introduction of local manufacture. Two things are necessary: (i) assistance to initiate production of high quality pumps; and (ii) purchase of local pumps if made to specification. To both do this and still leave the purchasing decision up to the community necessitates both flexibility and risk-taking, but the long term benefits are substantial.

Policymakers need to create environments conducive to the development of local industrial capacity for the manufacture of pumps and key hardware components. Establishment of local sector industries will enable easier availability of technologies and spare parts, development of local skills, creation of job opportunities and greater national self-reliance. Governments need to limit surcharges, import duties and other constraints to encourage local production and make local pricing competitive.

High interest rates, delays in obtaining foreign exchange and duties on imported materials all work against a local manufacturer's competitiveness. Typically, capital must be tied up for one year between the time foreign exchange is purchased and a pump is sold. This alone can increase manufacturing costs by 20 percent. Because profit margins are small in the international handpump market, such factors can make the difference in the viability of local manufacturing. If local manufacturers must then compete against pumps that are imported duty free and distributed at no cost to the off-shore manufacturer by government or donors, local manufacturers have no chance of competing. Greater efficiencies may be achieved by arranging for regional production of key pumps or pump components, particularly between countries with trade agreements, common currencies and import duty waivers.

Establishment of Well/Borehole Drilling Industries

Many African countries continue to operate central drilling industries at high cost and with low output. These inefficiencies derive from the fact that the personnel and financial control policies of central governments are rarely flexible enough to support measures--such as piece rates, shift work and other productivity incentives--which make for efficient drilling practices.

The establishment of local well drilling industries in many African countries are constrained by several factors, but the central problem is cash liquidity, both in local currency and foreign exchange. Local contractors also need a stable market so that they have assurance of future work, otherwise they are forced to quote high prices for individual jobs in order to cover their investment in drilling rigs, equipment and vehicles. The provision of free rigs by donors without duties or bonds to governments has been counterproductive to the development of local well drilling industries.

A policy environment is required which favors the establishment of local well drilling industries. Measures which tie up local well drilling industries' capital should be minimized. For example, security and performance bonds should be no higher than necessary and payment for completed work should be prompt. Packaging of small contracts (20 to 100 wells) will help ensure that regular work is available and on a scale that small contractors can effectively manage. Bidding procedures must ensure that experienced local drilling contractors are given a fair chance and equal opportunity to compete. Pre-qualification procedures help to achieve this, as they ensure that contractors with documented performance records are selected.

Drilling equipment should be sized according to the job, since the use of unnecessarily over-sized rigs results in greatly increased costs. Where hand-dug or hand-drilled wells can be installed, savings are likely to be substantial. In all areas where such wells are suitable, governments should initiate training programs for private contractors to teach them the relevant technical and accounting skills.

Innovative approaches that help to establish local well drilling industries are needed. For example, local firms should be able to obtain credit for the purchase of materials and equipment as part of financing for a water supply project. This could be to a wholly-owned local contractor or through an arrangement with an off-shore equipment manufacturer who buys equity in the operation. This arrangement would provide vital overseas technical and purchasing support.

Maintenance and Spare Parts Supply

To take best advantage of their resources, governments should play a support role rather than take full responsibility for the maintenance of water supply systems in small communities. By turning responsibility for maintenance over to the communities and private mechanics, local demand for spare parts will increase, thereby supporting a local market. Also, response times for repairs will depend on the importance of the supply to the community and will no longer be subject to the personnel and transportation constraints that government agencies face every day. Costs will also be lower because private mechanics do not have overhead costs associated with a government maintenance unit such as vehicles dedicated to maintenance, housing and supervisory costs. Again, government's role ought to be one of support by training private mechanics and providing backup. Box 8 provides a case study of involving the private sector in the supply of spare parts in Côte d'Ivoire.

BOX 8

Supply of Spare Parts and Standardization in Côte d'Ivoire

In 1988, Côte d'Ivoire embarked on an ambitious program for transferring operation and maintenance of all rural facilities to villagers. Prior large scale pilot activities tested community mobilization and training programs. One major issue, however, remained to be addressed, since all pilot actions had relied on governmental support to supply spare parts to rural communities. Even though the public distribution network performed reasonably well in supplying spare parts to some 1,000 villages, expansion to cover the remaining 8,000 villages was not feasible or affordable. Shifting the supply responsibility to the private sector was clearly the solution.

The large number of handpumps installed (13,500) represented a sufficiently attractive prospect for suppliers. But trading companies were much more concerned by storage and distribution costs. The high degree of standardization--2 pump models accounted for 98 percent of the total market--generated lower costs and brought a decisive incentive to the involvement of the private sector, which responded favorably to inquiries from the Rural Water Supply agency. A private network was soon established which now supplies some 500 area mechanics.

Community based maintenance is predicated upon local availability of common spare parts and at least regional availability of the more expensive components. Inexpensive wearing parts are also important so that distributors and retailers can make sufficient profit to interest them in the business without making the cost prohibitively high for the community. Molded plastic components are ideal for this as a complete set of wearing parts can be made for about US$10.00 and sold for under US$20.00 in local retail stores.

Marketing Sanitation Technologies

Like rural water supply, successful provision of rural sanitation facilities in a sustainable manner depends on demand. Improved sanitation has in general less prominent demand yet is of major public health importance in most environments. Sanitation programs require substantial promotion activities. Promotional approaches which market sanitation technologies in terms of the benefits as perceived by householders--privacy, convenience, comfort and hygiene--have been successful. Demand creation often requires a subsidy element in initial capital cost. The extent of this subsidy component needs to be greatly limited to ensure development of a sustainable and replicable program whereby the service can be extended to all the unserved population. Full ownership and all subsequent replacement costs should be the complete responsibility of the owner.

Widespread coverage will never be achieved if government-employed personnel are responsible for all construction. Governments cannot afford to employ enough staff and transport vehicles, and there is no incentive for mass construction. Private contractors are much better suited to this task because they will be paid only if latrines are constructed and it is in their interest to promote sales. As part of government's promotional role, small scale local contractors should be trained in the construction of standard technical options using optimal techniques. Government's ongoing role should be promotion, ensuring adequate standards of construction by contractors and monitoring coverage.

VI. CONCLUSIONS

The development of attractive, appropriate and affordable RWSS technologies are a powerful tool for sustainable and replicable programs. Widespread adoption of the important advances in appropriate technology development that have occurred in recent years will only be achieved where policymakers

create an environment for sustainable program development.

Steps for policymakers towards creating a favorable program climate are:

- To promote the adaptation of technologies to local needs. This requires collaboration with applied research bodies and private sector manufacturers.

- In collaboration with applied research institutions and manufacturers, to identify a range of affordable and locally appropriate technology options as the program standard; to standardize on equipment selection; and to set design and production standards.

- To redefine the role of public and private sector agencies such that public sector institutions are responsible for technology promotion and regulation (effective demand creation) while the private sector is responsible for the delivery of services (construction and maintenance) at the request of the consumers.

- To promote local manufacturing and drilling industries through creating environments conducive to developing local capacity. Specific measures required will include limiting security bonds, import duties and other constraints, encouraging local production, making local pricing competitive and providing training and technical assistance to key industries.

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PRESENTATION OF POSITION PAPER 3: TECHNOLOGY DEVELOPMENT

Mr. Robert Roche of the Regional Water Supply and Sanitation Group based in Abidjan introduced the paper that he had co-authored, entitled "Technology Development" in plenary session. Mr. Roche commented that the 1980s were marked by innovation in water and sanitation technologies, particularly in Africa where easy to repair, corrosion resistant pumps and VIP latrines have been developed. The 1990s on the other hand will require innovation in delivery of services in order to meet the demand for water and sanitation. He indicated that for the presentation, he would pay particular attention to ways of improving the delivery of those technologies and focus on -

- the cost of boreholes
- technology choice
- local manufacture and distribution of spare parts and pumps

Cost of Boreholes:

Mr. Roche asserted that at an average cost of $15,000 (4.5 million CFAF) the cost of boreholes was too high. To provide water to 200 million people in Africa by the 2000 would require 100 boreholes to be completed every day for the next 10 years - halving the cost was achievable, in his view, and would save $750,000 every day. But, to reduce cost means promoting the local well drilling industry which has some very important implications.

- Clients (including Governments) should not tie up Contractors' capital through slow payments.

- Use competitive bidding to lower prices and to ensure that qualified drilling contractors are selected.

- Advertise tenders regionally, especially important for those countries that have only one or two drilling companies.

- Use hand dug/drilled wells whenever feasible as they are only one-tenth of the cost of a machine borehole.

- Minimize use of Government and donor owned and operated drilling rigs as they are inherently expensive and take work away from private contractors.

- Establish a National or Regional Well Drillers Association to encourage sharing of technical support, information, inventories and spare parts as well as establishing a self-policed standard of performance.

Service level and technology section:

Mr. Roche then turned to the question of service level which he considered involves a combination of factors-quantity and quality of water, amount of time needed to collect water and reliability of the system. If quality and reliability are similar then there are two alternate service levels - point services (hand pumps and public standposts) from which households must carry water home, or, yard taps which deliver water to the home. He then drew on the figures in Box 5 of the paper to show the cost of water for communities of different sizes and that, in general, yard taps cost about 3 times more than point sources.

He then drew attention to the graph (also from Box 5) to demonstrate the alternative costs for Manual, Electric, Diesel, Solar and Wind pumps. He summarised that, generally, manual pumps are the least cost alternative for small communities where small amounts of water are needed, and, that diesel pumps are best for communities where large amounts of water are required. Solar finds its place in medium sized communities (1000 to 2500 people) being not very much more expensive than diesel pumps in the larger communities.

Mr. Roche stated that the greatest advances in the last decade were in handpumps and solar systems and that, in his opinion, these would be the most important technologies for RWS in the next decade. Handpumps have become much more "user-friendly" and easily maintainable with many common repairs being carried out in only a few minutes by women in the community using corrosion resistant plastic

materials. Mr. Roche spoke of the reliable direct-action pumps for lifts up to 15 metres and the high lift pumps for lifts up to 45 metres which are also easy to repair and many having corrosion free below ground components.

On solar pumps, Mr. Roche stated that there are over 300 solar pumping systems operating in West Africa, most of them in the Sahel especially Mali. He indicated that there are 3 types of systems, each with their own respective advantages -

- Standard 3 phase 380 volt AC motors.
- High efficiency AC motors operated at 60 to 120 volts.
- DC motors that do not require invertors.

Costs are continuing to come down especially for the panels. Reliability is very high with breakdowns often confined to wiring on to the invertors. He urged greater attention being given to the use of solar powered pumping systems.

Local manufacture and distribution of spare parts and pumps:

Mr. Roche remarked that a pump that can easily be repaired serves no purpose if spares cannot be obtained; a number of things can be done to promote distribution of spare parts -

- Communities should purchase and maintain their pumps thereby creating a local market for the best pumps at the least price. Survival of a particular pump will therefore depend upon the seriousness of the manufacturer rather than the number of projects in a country.
- Direct-action and high-lift pumps should be recommended for particular circumstances. This does not necessarily imply standardization, but rather sound government advice to consumers to avoid temporary proliferation with each new project.
- Import duties should be applied consistently as between local and foreign manufacturers as governments often disadvantage local manufacturers.
- Technical assistance should be provided to domestic manufacturers to help get them started or up to an appropriate quality standard.
- Local manufacture of an internationally specified pumps is preferable to starting from scratch with its consequential disadvantages of lead time, high entry costs, uncertain marketability and back up for spare parts. Local products to specification and at a competitive price will succeed.

In concluding, Mr. Roche asserted that technology is essential for sustainable and widespread coverage for rural water supplies. However, technology alone is not enough as innovative ways of delivering RWS services must be employed. The evidence is now clearly available that in circumstances where -

- the community takes the lead in planning and maintaining RWS;
- the private sector constructs facilities and manufacturers spares and pumps; and,
- the government plays a supporting role in assisting communities to make decisions and creating a climate supportive of local manufacturers and distributors; then sustainable RWS will be assured.

TECHNOLOGY DEVELOPMENT: A PERSPECTIVE FROM ZIMBABWE

Mr. John Chatsavka Mvududu, Director of Environmental Health Services for the Government of Zimbabwe, presented the Zimbabwe story of on-site sanitation technology. He said that Zimbabwe has gained a notable reputation for its ability to develop on-site sanitation technology. This technology development has indeed provided the basis for the development of Zimbabwe's extensive rural on-site sanitation. The focal point of technology development in the country is the research laboratory of the Ministry of Health, which among other things developed the famous ventilated improved pit (VIP) latrine, currently the technology of choice for rural on-site sanitation. Sustained promotion of technology continues through a close liaison and collaboration between the research center and the field implementing staff of the Department of Environmental Services.

In the early 1970s, through the pioneering work of Dr. Peter Morgan, the development of appropriate technology for both on-site sanitation and rural water supply commenced in Zimbabwe. This technological development took into account factors such as poverty, poor education, and the psychological, social and cultural aspects of the community to be served, including the economic realities that existed at that time. The 1970s saw much technical development and experimentation. The outcome of this exhaustive research was the emergence of the highly successful and widely adopted VIP latrine. The research was conducted within the Government structure--the research laboratory and the environmental health inspectorate--but was assisted by the private sector for technical innovation. Developing technology locally created a high level of confidence in the technology on the part of the implementing agencies.

Dr. Peter Morgan's Blair latrine improved privy has, since its development, enhanced the scientific value of a dry privy's primary disease prevention role. One of the factors that is attributed to its success is the fact that it takes into account the technological likes and dislikes of people in Zimbabwe. This was also emphasized by Ms. H. Perret's TAG paper of 1983, in which she pointed out that a conscious effort needs to be made to ensure that women's likes and dislikes as well as men's are considered, and that the special needs of children are kept in mind when choosing technological options.

The Blair latrine, when correctly built, is odorless and greatly reduces the problem of flies. It also takes into account variables, or technological options, including convenience, privacy, comfort, attractiveness, reliability, prestige value, space requirements and compatibility with the traditional and culturally acceptable defecation practices of the citizens of Zimbabwe.

The VIP latrine produces the best results when constructed as a single unit for families. However, in recent years, technology has been developed to offer a double compartment (for families who demand it for cultural reasons) and multi-compartment units (for schools and similar institutions). To promote construction according to desired specifications, community-selected local contractors are trained in latrine construction. After training they are issued a certificate which acts as a guide to members of the community in selecting the correct builder to build the latrine according to specification. Traditionally, latrines had to be situated at an inconvenient distance for fear of smell around the home and for privacy. However, the Blair latrine has managed to overcome the problem of flies and offensive odors, and as a result latrines are increasingly accepted within the homestead, thus allowing a greater utilization, even at night.

The family Blair latrine technology promotion is based on the concept of providing a subsidy to each family, which is channeled through the Ministry of Health from donor sources. Since 1980, at least 200,000 single-compartment units have been built, although multi-compartment and upgraded versions

are also available. The technical details of these models have been described in the Blair information bulletins which have been distributed throughout the world.

In recent years, the commonly constructed single latrine has used between five to six bags of cement and reinforcing wire for the base slab and chicken-wire for the roof. These components, together with the corrosion resistent screen, are provided through the subsidy mentioned previously. The family provides both the labor and the other building materials, including sand, stone, etc. Very often a builder is employed to construct the unit and is also paid by the family. The present cost (1989) is about 300 Zimbabwe dollars (US$125). The contribution by the family is assessed at being about 50 percent of the total cost of the unit.

Mr. Mvududu reminded the participants that in the development phase in the 1970s, the first latrines were designed with a wooden door. This was later found to have several disadvantages, including the following: wood is expensive, hinges rust, and often the doors do not stay closed. Thus the interior could not be kept clean and consequently flies emerged via the squatting hole rather than being trapped through the vent pipe. Modifications of the superstructure design later improved the design to a spiral shape, thus avoiding the need for a door. This superstructure creates a dark interior and therefore continuous fly control is maintained. Different spiral versions have since been designed in Zimbabwe: ferro-cement and several other versions. In recent years, however, they have lost favor as the technology of choice due to a short slush fund and environmental impact considerations. Ferro-cement VIP latrines with a cement vent-pipe or PVC vent pipe, brick VIP latrines with asbestos cement or PVC vent pipe, and brick VIP latrines with brick vent pipes continue to be built up to present time. However, in the 1980s the ferro-cement version has been overtaken by the now popular brick version.

Experience in Zimbabwe has shown that the latrine of choice for the national program should be the single version. Not only do these require less bricks (which are locally produced and have a potentially detrimental impact on the environment) but also require a fly screen, less cement, and less payment to the local builder. For these reasons the cost of a single- is far less than that of a double-compartment version which people prefer. Therefore to ensure acceptance of the low-cost single-compartment version as opposed to the double-compartment version, educational campaigns, undertaken by environmental health technicians, are on-going to promote the single version. The environmental health technicians are always among the villagers; they never move from the main centers as is the case with other senior staff of the department.

The choice of building materials is also based on low cost and reliability. Recent research on the life of a single VIP latrine in Zimbabwe reveals that the operating life of most latrines is 10 to 15 years. Wood is often attacked by termites; hence the utilization of bricks. In the early stages of local technology development, fiberglass fly screens were used. Although they are less expensive than aluminum and stainless steel, the screen was not appropriate for the life of the latrine. Now stainless steel and aluminum fly screens are fitted on the latrines. A number of latrines are often completed without screens, because there is no local manufacturer of the desired screen, and the supply has to be imported. Recent studies on the development of local manufacturers of screens concluded that under the present circumstances, local production is uneconomic. The program now depends on bulk import, and the screens cost as little as US$0.30 per unit; hence it is clearly not feasible to manufacture the screen within the Zimbabwean market capacity.

In more recent years, the principal ingredient of VIP construction—cement—has become scarce, and its price has also risen dramatically. The number of Blair latrines built in 1988 and 1989 has fallen in comparison to the output of 1987. Some concern has been expressed regarding the sustainability of the program vis-a-vis the continuous rise in price of these essential commodities. Further research has now been undertaken on lower-cost models which use far less cement and reinforcing, and take into consideration the technological likes and dislikes of the expected beneficiaries.

The Blair Research Laboratory has designed low-cost models which use from one to six bags of cement for the single version of the latrine. The one to three bag model uses a commercial vent pipe of asbestos cement. The middle low-cost model, which uses three to six bags of cement, is being tried in rural area projects in two provinces of Zimbabwe on an experimental basis. A 3 bag model, which uses a 110-millimeter diameter asbestos cement vent pipe and 3 bags of cement, is also currently on track.

By careful use of the cement, a durable and attractive model can be built which lasts the life of the pit. The first bag is used to line the pit using a mixture of 12 parts sand to 1 part cement. The second bag is used to make the slab and to form the foundation for the brick wall. The slab, with a diameter of 1.5 meters and a thickness of 70 millimeters, is made from a mixture of 5 parts river sand and 1 part cement. A total of 20 meters of reinforcing wire (3 millimeter) is used. The slab is cured for five to seven days. The wall foundations are made with a mixture of eight parts sand to one part cement. The sand back is used to cluster the internal wall of the structure with a mixture of ten to one sand and cement; the floor of the latrine is made with a mixture of four to one river sand and cement. Approximately 1,200 fire bricks are required for the lining and superstructure. They are commonly made in the rural areas of Zimbabwe. The use of traditional mortar is of greatest importance in the construction of the superstructure. The roof is also made in the traditional way with wood. This makes for a cool interior and an attractive appearance, but requires more maintenance than does a ferro-cement roof as is used in the original VIP latrine. A four-bag model is also being used. All of the models will be published through the agencies which are helping Zimbabwe, and for this reason Mr. Mvududu minimized the details in his presentation.

In conclusion, Mr. Mvududu pointed out that based on the Zimbabwe experience, he could not emphasize enough that the development of acceptable, accessible and appropriate technology needs to take into account affordability. Only through affordability can a sustainable program be achieved. Zimbabwe officials are aware that cost must be taken into account, and their effort is to further develop low-cost sanitary latrines, similar to the original VIP latrine, which can meet the basic likes and needs of the people in Zimbabwe. He acknowledged that through increased cost increments the present model is becoming more and more expensive.

DISCUSSION OF POSITION PAPER 3 AND THE ZIMBABWE PERSPECTIVE

As with the first plenary session, the above two presentations by Mr. Roche and Mr. Mvududu were made in sequence before opening up for discussion with the participants.

The first discussant posed three questions: (i) How does the cost of latrines in areas which are very dry compare with those in areas which have high a water table so there is a need to reinforce the wall?; (ii) Have you ever experienced any problems relating to the conditions of pit latrine in dry areas?; (iii) What is the life of the pit latrine--between 10 to 15 years?

A second discussant commented on the first paper regarding handpumps. He indicated that the Kuwait Fund have avoided handpumps as much as possible, and have preferred dug-wells with reinforced concrete lining, because handpumps break very frequently and require very high cost recovery. In general, the published prices of tube-wells equipped with handpumps do not reflect realities. He said that he had seen figures in the neighborhood of $60,000 for the construction of a tube-well with a handpump, taking into consideration the failure rate. The most successful handpumps are those which are manufactured locally. They are not necessarily the most robust pumps, but their spare parts are easily available. The great number of different types of handpumps creates a tremendous administrative problem. He also stated that the pre-qualification of contractors is very necessary, but sometimes the pre-qualifications are very stiff and tend to disqualify local contractors in favor of those from developed countries. Regarding the question of encouraging the establishment of a national construction company, he knew of very good examples where the national company manages to compete with the private sector and actually offers prices well below the private sector. He took as an example OFIDES which has been doing extremely fine construction work of very high quality and at prices much lower than those which could be obtained from the private sector. He also stated that in his opinion, solar pumps have proved to be far more difficult than expected because they tend to run dry and cause very serious damage--so much that the pumps have to be changed.

The third discussant said that he works in his country's Department of Water Resources. He wished to address a question to his colleague from Zimbabwe, but before doing so he congratulated him for executing such an important program in Zimbabwe. He wanted to know under what kind of institutional arrangements the program was implemented in Zimbabwe: was it implemented with other activities and/or with other institutions like the Water Resources sector? Also, concerning the construction of pit latrines, he asked if it occured concurrently with the construction of water points: was it exclusively executed irrespective of the local implementation of water supply in the village communities?

The fourth discussant said that he was a sanitary engineer and sanitation director. He raised a question on both the single- and double-pit latrines. He asked why--as Mr. Mvududu had indicated--people request double-pit latrines although they prefer the single-pit ones? He also inquired as to the depth of both the single- and the double-pit latrines. He said he asked these questions because the speaker mentioned that the single-pit latrine was far less expensive than the double-pit latrine. He wondered if the dimensions were in fact the reason for the preference, since double-pit latrines are permanent whereas single-pit latrines are only temporary structures--once they are full, they must be closed once and for all.

The fifth discussant, a deputy-director for water sanitation in Côte d'Ivoire, mentioned that in the countryside of Côte d'Ivoire there are over 2,000 double ventilated improved pit (VIP) latrines. He was interested in knowing more about the mineralization process and if in Zimbabwe there were

some experience on the use of the substance for other purpose.

The sixth discussant, a technical director for water supply and sanitation said that he would like someone to compare the cost of the double-pit latrine with that of a single-pit. He was also interested in knowing whether the Zimbabwean latrines could be upgraded for flushing and what the implications would be in terms of choice of construction materials, costs, etc. He wanted to know if there had been some experimentation in that direction in Zimbabwe.

A seventh discussant, a sanitary engineer, was concerned that although the presentation of his colleague from Zimbabwe was extremely interesting, he felt that Mr. Mvududu had missed a point which required some attention. In his presentation Mr. Mvududu talked about constructing VIP latrines, and the discussant wanted to know whether this is done along with the construction of water points through exploitation of ground water, because ground water pollution should be considered if there are so many VIP latrines. The ground water table has to be taken into consideration before constructing the latrines.

The panelists were invited to respond to the several matters raised. Mr Mvududu responded to the question from the gentleman from Malawi who inquired about the various costs regarding the water table, linking this question to the one posed by the gentleman from Sierra Leone. He stated that all latrines in Zimbabwe are not just situated haphazardly in the low areas, because in the dry areas in Zimbabwe, dry-area sanitary facilities are provided by contractors and the contractors are selected through tender. They would provide only waterborne facilities because in Zimbabwe dry areas, in terms of the present law, siting of a Blair dry privy latrine is illegal. It might be an ambitious strategy, but at the moment it is working very well. Therefore dry privies are mostly for the rural areas and all latrines are sited by the professionals, who are environmental technicians. These people receive three years of training in basic sanitary engineering approaches to water and sanitation as well as public health approaches to the benefits of sanitation. Therefore, whenever they are siting these latrines they take into account the water source of the villages. In most cases our recommendation is that all latrines--dry privies--should be below the water source. However where this is impossible, the 100 meter distance is maintained to ensure that there is underground filtration and minimizing of pollution. Research has also been done by our research laboratory in one of the most populated areas close to the city of Harare which is now been developed to become a township, but previously it was designated a rural settlement. The research so far has revealed that despite the concentration of the latrines, because of the geology there has been no underground pollution. Nonetheless, he stated that it is always very important to keep this in mind and always monitor the possibility of underground pollution.

Mr. Mvududu then commented on the question of the average size of a family in Zimbabwe. According to Zimbabwe's 1982 census, the average Zimbabwe family is about 6 to 7 people. However, there are also cases of polygamous families which may be slightly larger than that. On the question from his colleague from Gambia regarding institutional arrangements, Mr. Mvududu confirmed that in Zimbabwe the promotion of water and sanitation programs is through the integrated approach. Zimbabwe has a national action committee which fortunately as of today is still active. He had heard of committees in other countries which have collapsed, but he noted that fortunately Zimbabwe's is still working and he introduced his colleague the Deputy Secretary in the Ministry of Local Government and Rural Development who is also the National Chairman of the National Action Committee. The Committee's main job is to coordinate the sector rather than implement it. This approach has helped tremendously because the coordinator is not competing with an implementing agency--that is where problems occur: when people are competing for the best credit of work done. This is also the experience in many other countries.

On the issue of double-compartment latrine versus a single-compartment, Mr. Mvududu explained that without a doubt the single-compartment is approximately 50 percent cheaper than the double-compartment. The paper highlighted the fact that the builder charges more for a double-compartment, and more labor as well as more bricks are required for a double-pit. There may be a technical argument that the double-pit would last more years, but unfortunately the superstructure will not last beyond 15 years unless the family can repair

it. So in Zimbabwe they are trying to make sure that the pit latrine they promote has a life is equivalent to the life of the superstructure.

On the question of the 2,000 latrines built with double compartment in Côte d'Ivoire--the question of utilization--the speaker explained that Zimbabwe does not mandate contractors to build family latrines. All latrines are based on the acceptance of the individual household which decides either "I shall build a latrine for my family" or "I shall not build a latrine for my family." At the commencement of the Zimbabwe program, the subsidy was given on a first-come, first-served basis. Nonetheless, the project's continuance is due in part to pressure from those who have been promoting the project and where demand has become greater than supply. At one point, the program was running short of cement, due to the fact that the beneficiaries were demanding the provision of latrines in the homestead beyond what the resources can cope with. Because the latrine is built by the individual, its utilization is assured. This acceptance comes through health and hygiene education. He said that he had already pointed out the differences in prices and he thought that he had answered the question of his friend from Burkina Faso, who asked the question of water use in privies in Zimbabwe. He mentioned that he would not be able to answer because in the rural areas of Zimbabwe they do not use water for cleansing. They use toilet paper and other locally available materials. Nonetheless, he emphasized that whenever a facility is chosen, it should be based on the social and cultural preferences of the community to be served.

Mr. Roche said that he generally agreed with the gentleman from the Kuwait Fund. He could not agree more that hand-dug wells are a very good option and an alternative to machine-drilled boreholes, and that spare parts are the key to maintaining handpumps. However, he disagreed with leaving hand-dug wells open. He felt that the water quality is sufficiently reduced to be a concern but not an overriding consideration, and that secondly--all too often--all sorts of things end up in a well and people end up not using it. From his experience, Mr. Roche said that the real problem is that the handpump that has been put on the open well does not provide good enough service and undoubtedly it breaks down too often. Modern pumps should not break down more than once a year and should be repaired within a few hours--particularly for hand-dug wells. Unfortunately hand-dug wells are not the solution for everywhere. There are many places where water is too deep, the soil is too hard to dig, and there one is forced to use the machine to drill the borehole.

Regarding pre-qualification, he said that very often when someone writes a document they include everything under the sun that is necessary for pre-qualification which makes qualifying very difficult and this very much works against local manufacturers. That is partly why a well-drilling association might do well and it would allow local manufacturers or local contractors, as a group, to see to it that when bidding documents are prepared, they are prepared reasonably and do not unfairly treat the local drillers.

Lastly, Mr. Roche responded to the discussant's comment on the ability of national drilling water companies to drill wells for less cost than a private company. He suggested that although there are occasions when a national drilling agency gives a quotation that is lower than a private contractor, perhaps they are not including the full cost of their drilling. Thus, if one is to look at the real cost, private contractors would probably be cheaper.

Mr. Cheikh Toure of CREPA said that his organization does not have much experience with VIP latrines--its experience is only two and a half years old--while some countries, such as Côte d'Ivoire, and Togo are quite advanced regarding the structures. He did say however, that in collaboration with CIEH, CREPA did built various latrines with different structures, i.e. the superstructure, single-pit ventilated latrine, structures with adobe, simple structures with cement at 22,000 francs CFA, and double-pit latrines at 30,000. He added that when a cement is added to the structure of a simple VIP latrine the price rose to 38,000 francs CFA and when added to the structure of a double-pit latrine the price rose to 44,000 francs CFA. Referring to Burkina Faso, he mentioned that the soil is hard and thus there was no need to reinforce the pits. He also said that the price of the superstructure greatly influences the overall price of the latrine and that CREPA has built superstructures with roofs made of straw, walls made of the stems of mil plants, and a hole dug by peasants. The ventilation pipe has been made of large stems from

mil plants and covered with cement and adobe. The cost of such latrines is minimal compared to latrines of the same size in other countries, which cost from 100,000 to 250,000 francs CFA for the single-pit and double-pit latrines respectively.

On the subject of the utilization of the mineralized substance in the first pit, Mr. Toure said that there were problems of acceptance on the part of the population. He wondered whether populations could manipulate the substance after four years for calorific purposes. This represents a fundamental issue which is currently being studied at CREPA. The question as to whether they will be able to have the population manipulate the substance after four years cannot be answered because their experience is not yet that long.

On the question of latrines with pour-flush toilets, he stated that this is another area where he has very limited experience but he noted that eventually pour-flush toilets will replace the pit latrine. The speaker mentioned that CREPA has only three experiences with that technology in Burkina Faso--clearly too few to draw any conclusions. However, he did say that in Africa the seat to be installed for pour-flush toilets was extremely expensive--on the order of 30,000 francs CFA--which is double the price of the latrine. If one could find local manufacturers to manufacture those seats at a lower cost, he does not see any reason not to promote the pour-flush toilet in Burkina Faso.

On the question of pollution raised by another discussant, Mr. Toure emphasized that regardless of the type of sanitation chosen in any given site, pollution persists; it is an issue of transfer of pollution. Taking as a example sewerage treatment plants in large cities, he noted that the plants are a site where pollution is transferred. Similarly, whether a standard treatment plant or a standard pit latrine is chosen, at some point the pollution must be disposed of somewhere. He added that in the case of the latrine, one can protect the water table by improving the walls of the pit and that techniques exist for that purpose.

Mr. Wolde-Gabriel, sanitary engineer for the UNDP/World Bank Regional Water Supply and Sanitation Group in Abidjan said that as far as pollution is concerned, the problem is not only limited to pit latrines. But in the case of pit latrines, research carried out by the International Reference Center for Waste Disposal has clearly shown that the soil has the capacity to filter any disease bearing material from polluting any ground sources under normal conditions. Of course, if there are any fissures which provide a conduit to the ground water, there is a risk; but under normal circumstances the risk of pollution from pit latrines is not as high as many people think and it has been shown through the research that it is not a problem.

The second point raised by Mr. Wolde-Gabriel related to the decomposition of fecal matter in pit latrines. He had not seen it personally, but he had a photograph showing the effects of the material used as a fertilizer in Tanzania. The photograph shows two plots of tomatoes--one treated with material from pit latrines and the other without treatment--and shows a clear difference in the growth of the two plants. He also mentioned that in Benin there was a pit latrine contracted for a hospital, and after the material was emptied, it was seen that there was a complete decomposition of the matter. In that hospital a problem which was not anticipated was discovered: the fecal matter thrown in plastic bags had not decomposed. So the assumption that under normal circumstances in a period of two years the material will decompose is even demonstrated for public latrines.

On the question of the depth of a double-pit latrine, Mr. Wolde-Gabriel said that in order to be able to empty the pit manually, the designs which are used vary from 1.6 to 1.8 meters. In Africa, the family is estimated to number about 20 persons, and the design for about 20 persons is common in these parts of Africa.

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At this point, the plenary proceedings were closed for the day. The objective had been to provide all participants with a broad understanding and consensus on the context of rural water supply and sanitation in rural development, the role of communities--and particularly women in that development--and to confirm the experiences and validity of technological developments and choices available to communities. This was to set the scene for the five working groups (three French-speaking and two English-speaking country groupings) to begin their deliberations over the next one and half days on three further position papers: no. 4, "Institutional Issues," no. 5, "Financial Resource Mobilization," and no. 6 "Rethinking Sector Management." The three papers reproduced below. Each paper was presented to each group by a pre-selected facilitator who was either an author of the paper or who had some interest and familiarity with the topic. These facilitators, after their respective presentations, became resource persons available to the Working Group to help the chairmen and participants clarify topics or issues as they arose. However, before finally breaking for the day, each of the Working Groups met to appoint a chairman and rapporteur(s) from among the country delegates. Representatives of the external support agencies distributed themselves among the groups according to their preference, as observers.

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POSITION PAPER 4

INSTITUTIONAL ISSUES

Prepared by

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INSTITUTIONAL ISSUES

SUMMARY

The paper suggests that institutional arrangements for the delivery of rural water supply and sanitation (RWSS) services need to be reviewed. The implementation of a sound institutional strategy is complicated by the lack of clarity in the definition of issues such as "rural," "community" and "demand." The paper discusses the activities that need to be considered in determining institutional roles for RWSS--regulation, planning, capital finance, outreach, delivery and management. It also suggests that such institutions can be drawn from the public sector at central and local levels, from the private sector, from non-governmental organizations (NGOs) and from within communities themselves. It further highlights different sector approaches and the respective roles of these actors to ensure the sustainability of RWSS services. However, there is no general format for institutional arrangements--each country and each community is unique and demands solutions appropriate to its own particular problems.

The paper argues that in many countries, RWSS is typically handled by three or four different ministries with unclear responsibilities and conflicting policies. This situation is exacerbated by many external support agencies (ESAs) and NGOs active in the sector and the frequent lack of coordination of efforts. The roles of central and local governments are also often unclearly defined.

It is emphasized that central government as both "Promoter and Provider" has failed to enhance the level of sustainable coverage to the extent expected. The paper advances a more appropriate role for government in that of primarily "Promoter," with the "Provision" activities being left to more suitable local organizations. This change of function has important implications for the various institutions, including the communities themselves, involved in the RWSS sector and these are also discussed in detail.

The paper leaves us with two key questions:

- What are the possible roles of central and local governments, the private sector, NGOs, and the communities themselves in RWSS provision and management?
- Should greater responsibility be shifted from central government to local bodies and, if so, how can local institutions be strengthened to facilitate the implementation of sustainable RWSS services?

I. INTRODUCTION

The Problem

After well over two decades of effort in sub-Saharan Africa, characterized by ambitious targets for RWSS coverage and substantial investments by governments and the donor community, less than 30 percent of the rural population of the continent has access to safe water supplies, and many fewer have hygienic sanitation facilities. Many RWSS facilities do not function, so the actual population served is fewer still. The incidence of morbidity and mortality from water-related diseases is very high. Furthermore, the per capita costs of service provision are also commonly high, much higher for instance than in most Asian countries. Given the targets and the efforts, why are objectives not being met? One underlying problem is the general lack of a sound institutional strategy for the delivery of RWSS services: what are the possible roles of the public sector, the private sector and the beneficiaries themselves in the provision and management of sustainable RWSS? This problem is the subject of this paper, which sets out to raise issues for debate.

Background to the Problem

In discussing RWSS, clarity over the use of the term rural is necessary. Definitions of rural vary; in some countries settlements of less than 5000 people are regarded as rural; in other countries settlements of any size that do not have some form of municipal authority are considered rural. Over 70 percent of the population of Africa live in dispersed settlements or in nucleated settlements of less than 1000 people. Authorities in many of these settlements do not have a legal mandate or obligation to provide services to their inhabitants. The focus of this paper is on the delivery of services to relatively small and dispersed communities (normally less than 5000 people and usually less than 1000 people), whose activity is primarily agricultural. Such communities generally represent the poorest segment of society, and have little political leverage.

A second area where some clarity is necessary is in the use of the word community, a term occurring throughout this paper. A community is often considered a geographic unit, bounded by the confines of a village. A community could be better described as a viable decision-making unit, whose size is a function of environmental and sociopolitical factors. These factors affect the cohesion of a community, which may at its simplest be a self-sustaining family unit composed of a dozen or so people, where conditions are favorable, or a group of settlements and populations exceeding 1000 where there may be adversity. Difficult access to water can be a cause for social cohesion (or for conflict). A further point to be made is the similarity of community-level institutions (for example, council of elders and women's working groups) and formal local government, where the latter is elected and trusted, and is regarded as local self government. Although this paper mainly focuses on water supply, the issues and sector approaches discussed also are applicable to sanitation, where the viable decision-making unit is the household. Thus the notion of community management, discussed later in the paper, could imply management by an extended family unit, a village association or a representative local government.

A third issue of importance to this debate is that of demand. Everybody has access to water in some quantity and of some quality. Those that have little water, or have to travel far to get it, generally the rural poor, invariably want more water, closer. These same people pay for water, possibly in cash, certainly in time to collect water, and probably in poor health from inadequate quantity and quality of water. Demand for improved services will emerge from perceptions of costs of the service and levels of income, coupled with perceptions of the benefits that will arise from the service. In much of Africa, there is a true market for water supplies and an informal private sector providing services, often at the simplest level, to meet demand.[1] The delivery of adequate services implies incremental improvements to the quality and quantity of water, meeting effective demand. "Adequate" services can only be defined, therefore, in relation to demand and the capacity to sustain these services.

Meeting Demand: the Need for Institutions

Institutions are needed to deliver goods, services and finance in the construction of RWSS and in sustaining these facilities, once in place. Given the need to use scarce financial and human resources efficiently, institutions are also needed to develop policies and plans, to regulate and to train. Such institutions can be drawn from the public sector at central and local levels, from the private sector, from NGOs and from within communities themselves. Defining the relative roles of these actors is fundamental to national economic development, and specifically in this case, to the sustainability of RWSS.

In determining institutional roles for RWSS, the following functions classify the activities that need to be undertaken in the RWSS sector:

a. Regulatory Functions
   - policies (standards, tariffs, etc.)
   - legislation (water rights, pollution control, system ownership, etc.)
   - enforcement

b. Planning Functions
   - national planning and budgeting
   - scheme planning and design

c. Capital Finance Functions
   - resource mobilization
   - intermediation activities (credi management, etc.)

[1]See, for example, "Willingness to Pay Studies," Willington et al.

d. Outreach Functions
   - social mobilization
   - demand generation and estimation
   - health education
   - training
   - advisory services

e. Delivery Functions
   - production and delivery of goods (pipes, pumps, etc.)
   - delivery of services (construction, operation and maintenance)

f. Management Functions
   - sustaining services (organization of O&M and cost recovery)

This list of functions illustrates the activities needed for sustainable RWSS; some of these may be seen as "**promotion**" functions (ie. regulatory and outreach), while others are "**provision**" functions (i.e., service delivery). This paper explores the match of actors to activities, and pays particular attention to the important distinction between promotion and provision functions and the need for an overall coordination mechanism, which possibly could be vested in a central authority/agency. The challenge is to ensure coverage of RWSS with service levels that people want, can afford and are able to sustain.

II. RWSS INSTITUTIONS

Evolution of RWSS Institutions

The development of RWSS institutions is one integral part of and one reflection of the social development of rural people, in terms of both the evolution of organizational structures among rural people themselves, as well as the maturing of public and private institutions established to provide services to rural people. This can be illustrated by the historical development of rural water supplies in the industrial countries, which has followed a very different path to the growth in the provision of urban water supply services. The latter are one of the many services that a city needs to provide to its inhabitants. The nature of a piped water supply (a source, a treatment plant and a distribution system) and the economies of scale offered by a large number of better-off consumers in a small area lend themselves to service provision by a single institution, which may be a public sector utility or a private water company. On the other hand, rural areas are characterized by dispersed settlement and lower incomes resulting in higher costs of provision of "urban-type" water supply services and a lower ability to pay for these services. Water supply service generally has evolved from being an individual responsibility, to a community responsibility (where community can be defined as a group of users or a local government) and then, only when the economies of scale allow, to a public or privately managed service. This service is usually a consequence of outreach from an urban center or the coalescing of community-owned facilities or the emergence of a township.

In urban settlements in industrial countries, water supply is thus generally a public service, and, in dispersed rural settlement, water supply is characteristically an individually-managed or community-managed facility until a public or private service can be economically justified and institutionally sustained. The public sector still plays an important role in the development of community-managed facilities, such as in the provision of finance (grant or subsidized credit), provision of training and technical advice, continued provision of public health and other extension services. RWSS must be seen as only one part--albeit an important part--of a package of interventions that characterize the decline in rural poverty and the concurrent increase in health and other social indicators. Box 1 describes the development of RWSS in the USA, a precedent that clearly cannot be transferred directly to Africa, but nevertheless has features of relevance to the thesis of this paper. Similar precedents, from which we can learn, occur in many industrial and newly industrialized countries.

RWSS Institutions in Africa

Traditional water supplies in Africa are either individually managed ("self provision") or community managed. This reflects the availability of water, with difficult access (such as deep wells) often necessitating group action, and easy access (such as reliable streamflow or shallow wells) often left to individual responsibility. As discussed above, this also reflects the needs for cohesion in rural society, itself a function of variables such as security or environmental conditions--one of which is access to water. Sanitation in much of rural Africa is

perceived as an individual or family concern, with mothers typically responsible for the disposal of children's excreta. Health concerns seldom generate a demand for improved sanitation facilities, however demand does exist in some areas for either social and religious reasons or where population density and environmental factors restrict privacy.

BOX 1

Institutional Precedents in the US for Reaching the Poor with RWSS*

The vast majority of RWSS systems in the US are very small, with more than 87 percent serving less than 3,300 people per system. RWSS facilities in the US have primarily been provided by the cooperation and efforts of the communities themselves. The Federal Government has been involved since 1939, mainly by providing financial assistance to small, organized communities with grants and low-interest loans administered by the Farmers Home Loan Administration (FmHA), the credit branch of the federal Department of Agriculture. At present, the FmHA is authorized to provide credits and/or grants for installation, repair, improvement or expansion of RWSS in municipalities up to 10,000 in population. During the years 1977-1987, FmHA provided US$6 billion in loans and US$2.4 billion in grants to over 22,000 RWSS systems.

Another key feature of the US system is the strong regulatory role played by the federal Environmental Protection Agency (EPA) and the passage of the Safe Drinking Water Act in 1975. It is estimated that 95 percent of serious cases of non-compliance with EPA water quality standards in 1987 were by schemes in the <3,300 population size. The EPA provides training materials and sponsors workshops throughout the country to assist these small systems.

The private sector provides goods and services to rural communities (or their local government representatives), and frequently helps them in applying for FmHA funding. The community thus chooses its level of service, obtains funding, contracts construction and establishes a management structure (a community association). Often local government becomes involved, usually in response to community pressure. The systems may be maintained by the users, the local government, or by a private sector utility; economic factors determine the optimal management scheme.

The first State Water Association, established in 1972, evolved from the affiliation of several small community associations who exchanged ideas and provided mutual assistance on technical issues that affected their RWSS systems. The National Rural Water Association (NRWA) was created as an NGO in 1976 to coordinate the activities of the state associations. The NRWA lobbies for and receives support from the FmHA and EPA for training and extension activities: "Circuit riders," who may be considered as NRWA extension workers, travel throughout each state to visit local systems and provide technical and financial advice to community associations. Other NGOs such as the National Demonstration Water Project provide special emphasis outreach programs for low income groups and scattered populations who are unable to qualify for or are unaware of the FmHA program. Sanitation is largely dealt with indirectly. In order to join a community association receiving financial support from FmHA, and before connecting to the water system, it is generally necessary to have a wastewater disposal system in place, such as a septic tank.

*Primary Source: "Institutional Framework of Small Community Water Supplies in the USA" (Draft) UNDP/World Bank Water and Sanitation Program, 1988.

Prior to independence, few countries in Africa had significant rural water supply (RWS) programs; where these existed they were frequently a component of geological survey activities or agricultural programs. With independence came increased emphasis on economic development, newly emerging governments concerned with a more equitable distribution of resources and a focus on the provision of social services. Many national governments prepared far-reaching development plans and ambitious targets were set in collaboration with external donors who pledged the necessary external

resources. One such example is the 1967 Arusha Declaration in Tanzania, which was followed by a Party Declaration in 1971 that all rural people should have easy access to safe water before 1991.

Few countries had an adequate institutional framework to implement such ambitious RWS plans. Private sector capacity to deliver goods and services was limited, and local government institutions were at an early stage of development. Consequently, central government line departments grew to fill the gap. This was greatly facilitated by the provision of technical assistance and equipment by external donors directly to central government ministries. By the beginning of the Decade in 1981, large central water departments were commonplace, often equipped with a massive capital inventory of diverse equipment such as drilling rigs and earth-moving equipment. Large, freestanding RWSS projects were widespread, externally financed and either implemented by the line department by force account or by international consultants and contractors. This approach has been, in part at least, a cause of the current problems of replicability.

III. RWSS INSTITUTIONAL ISSUES IN AFRICA

Structural Issues

In debating the specific issues of RWSS institutions in Africa, there are a number of broad structural problems that need to be considered, due to the constraints that they place on the institutional options available. Many governments in the region are highly centralized, both as a result of and resulting in weak and often unrepresentative local governments. The public sector is frequently overstaffed, benefits are low, and there are few incentives for government staff to work and live in remote rural areas. Large central bureaucracies and weak local institutions lead to a poor understanding of local community needs and demands, with planning often driven by prescribed and not by felt needs.

Sectoral Issues

The RWSS sector does not readily fit the mandate of a single government institution. Where there is no water ministry, RWSS in Africa is typically handled by ministries of health, agriculture/rural development, public works or local government. In many countries, four or five government agencies are participating in sector development, with unclear responsibilities and conflicting policies; in addition, there may be several donors and NGOs active in the sector, each with their own policies and procedures. Where financial and human resources are scarce and thus efficiency important, there is a particularly compelling argument for a central authority, with regulatory and policy functions and no executive functions, as a focal point for sector coordination and advocacy.

Where there is a lead institution, it is commonly a central public works department, or a single-purpose water department, which is charged with the responsibility for regulating, planning, designing, building, operating and maintaining water supply and sanitation services in both rural and urban areas (with the general exception of the larger cities). In the engineering profession, as in industrial countries, rewards are linked to large schemes and complex structures, and training programs have a similar focus. As a direct consequence, those in central government responsible for RWSS service provision often have little interest and little to gain. The effect of this bias can be unresponsive planning, with an emphasis on construction and coverage to the detriment of operation and maintenance and with inappropriate choices of technologies and service levels. In some developing countries (eg. India) the coordination and policy functions for RWSS rests with a central agency responsible for rural development, even where implementation may remain with a public works agency. This can facilitate a broader perspective of the social and financial aspects of sector development.

There is an active market for a wide range of simple goods and services and often an informal private sector meeting this demand. The formal private sector, commonly in direct competition with central line departments, is typically weak and inadequately supported (for example, with credit, incentives, training, trade associations etc). The restrictions of external financing, such as tied-aid and tight competitive bidding requirements, may exclude the indigenous private sector even further. In contrast, the same external financing often supports the international private sector in Africa, with protection by guarantees and encouragement by incentives. Well drilling in Nigeria provides an example of part of this situation, as illustrated below in Box 2.

Local manufacture of goods is seriously constrained in many countries by prohibitive tariffs and barriers that can actually mitigate against import substitution through local manufacture. For example, water pumps are frequently classified as essential rural development materials and thus zero-rated for import duty and sales tax. In one East African country, the raw material to make the same pumps locally carries 40 percent import duty, compounded in the finished product with a further 20 percent sales tax. While the risks of monopoly pricing and other market distortions arising out of excess protection of local manufacture must not be ignored, the enhanced sustainability resulting from the availability of equipment and spare parts in the market place is an important issue.

BOX 2

Well Drilling in Nigeria

A recent study estimates that more than 95 percent of boreholes now drilled in Nigeria are constructed by private sector companies. Despite large equipment inventories and numerous drilling staff, public sector agencies have generally not been able to overcome basic operational difficulties, and suffer from constraints imposed in conforming to civil service conditions.

It is approximated that of all drilling rigs less than 12 years old operated by private sector companies, about 10-20 percent are permanently out of operation, and about 40-50 percent are down at any given time. In the public sector, for rigs less than 12 years old, at least 90 percent are down at any one time.

Virtually all public sector agencies involved in the study stated that their three main operational problems are: (i) inability to maintain drilling plant, support vehicles and site transport; lack of any funds for spare parts, equipment and consumables; and diversion of funds to other activities within the agency; (ii) lack of accountability of management and lack of involvement of the management in the drilling operation; and (iii) inability to motivate drilling staff because of the inability to pay bonuses, overtime or field allowances.

Private sector organizations, with active management, are often sufficiently flexible to overcome these problems. Most drilling companies currently list their three operational problems as: (i) lack of continuity of profitable work and lack of larger multi-borehole contracts, meaning that long-term planning and reinvestment is difficult and management time is lost competing for and operating small piecemeal contracts; (ii) difficulty with receiving payment for work done (particularly with payments for contracts completed for state governments); and (iii) difficulty in obtaining foreign exchange for the purchase of spare parts for compressors, rigs and vehicles.

The study also shows that cost of using local contractors is currently around 65-70 percent of the cost of using international contractors, based on the official currency exchange rate (this figure reduces to 50-55 percent of cost using the autonomous rate). However, several states continue to award major contracts financed by international loans, for as many as 250-300 boreholes, to international bidders, often with no competitive bidding.

It has been calculated that, on large contracts, 70-80 m four-inch completed boreholes in basement areas are costing the state Agriculture Development Programs on the average around US$12,000-14,000 (about US$150-200/meter).

Source: Borehole Drilling in Africa: A case study in Nigeria. DRAFT. UNDP/World Bank Water and Sanitation Program, 1989.

External Support Agencies

ESAs currently play a major role in RWSS development in Africa and in some countries may provide up to 90 percent of total sector investment. There is a serious risk that ESA involvement in the sector can be a cause of the market distortions that

jeopardize the sustainability of services. Grant and loan financing is provided, often supporting the role of the public sector as provider of services; meeting the cost of hardware (generally imported); providing technical assistance (commonly expatriate); and financing waterpoint construction (often by force account, or by contractors selected through international competitive bidding, which excludes many small indigenous contractors). Recently, there has been increasing coordination of ESA assistance to governments; particularly in the development of sound sector policies and investment plans; in grappling with thorny questions such as cost recovery; in increasing both the quality and the level of investment in national programs; in focussing on community development and training, the private sector and the role of NGOs; and in ensuring a long-term commitment to progressive and sustainable service improvements.

IV. THE PROVISION/PROMOTION SPECTRUM: OPTIONS FOR SUSTAINABILITY

Lessons from the last Decade

As the Decade draws to a close, expectations have not been realized; targeted coverage levels were not achieved, costs of service provision remain high and the sustainability of constructed systems questionable. However, during the Decade a perceptible progression has occurred; in particular, there is much greater recognition for the need for community participation in scheme planning, construction and operation and maintenance. Many of the lessons from the Decade parallel a more generalized trend in rural development, with an increased focus on decentralization to local bodies, and the resulting need to strengthen community organizations, the private sector and the outreach role of NGOs. This general development trend is characterized by a shift in the role of the central government, from directly providing services, to one of creating a supportive environment that would promote service provision by others. With this shift, it is expected that markets will become more competitive and responsive to demand, the enabling environment strengthened and sustainability of development enhanced. In the RWSS sector, this range from provision to promotion could be categorized by looking at three possible approaches, illustrated in Box 3.

The provision approach

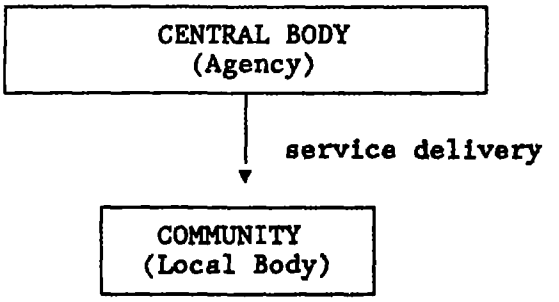
The first approach is a consequence of the evolution of strong central line departments as providers, characteristic of many African countries in the 1970s, as discussed above. This approach can result in very efficient construction of facilities, however, as there is no community involvement, demand for services is assumed, and service levels are randomly selected. With this approach, maintenance remains the responsibility of the provider, and is often difficult and costly because of the dispersion of rural communities and the corresponding lack of economies of scale. Typically, all the functions described above are handled directly by government institutions. The regulatory and outreach functions are generally very limited. Some delivery functions may be undertaken by the private sector.

The provision/promotion approach

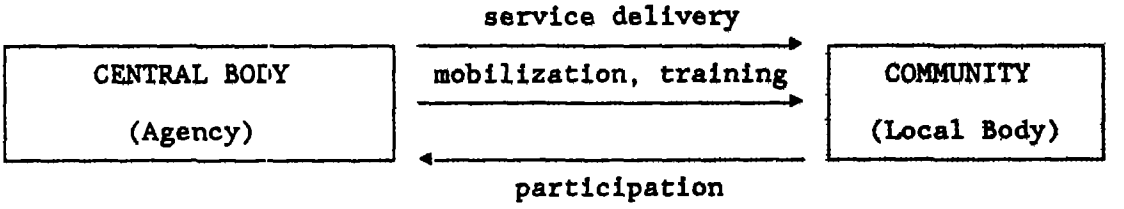
The second approach illustrates the transition that has occurred during the Decade and is characteristic of most national RWSS programs in Africa today. Through outreach, community participation and the formation of village water committees has resulted in a progressive sharing of responsibility for and a heightened local awareness of the management of operation and maintenance. Such committees can be the seed for community-based institutions capable of managing increasingly complex services. However, the approach is still characterized by a project not a program strategy, and is often dependent on external financing, equipment and staff. This can jeopardize sustainability since local capacity building is limited (including the private sector), demand is not adequately assessed and service levels are prescribed. Furthermore, replication remains the responsibility of the central agency, as provider, and is dependent on continued external support. Examples that characterize this approach are described in Box 4.

BOX 3

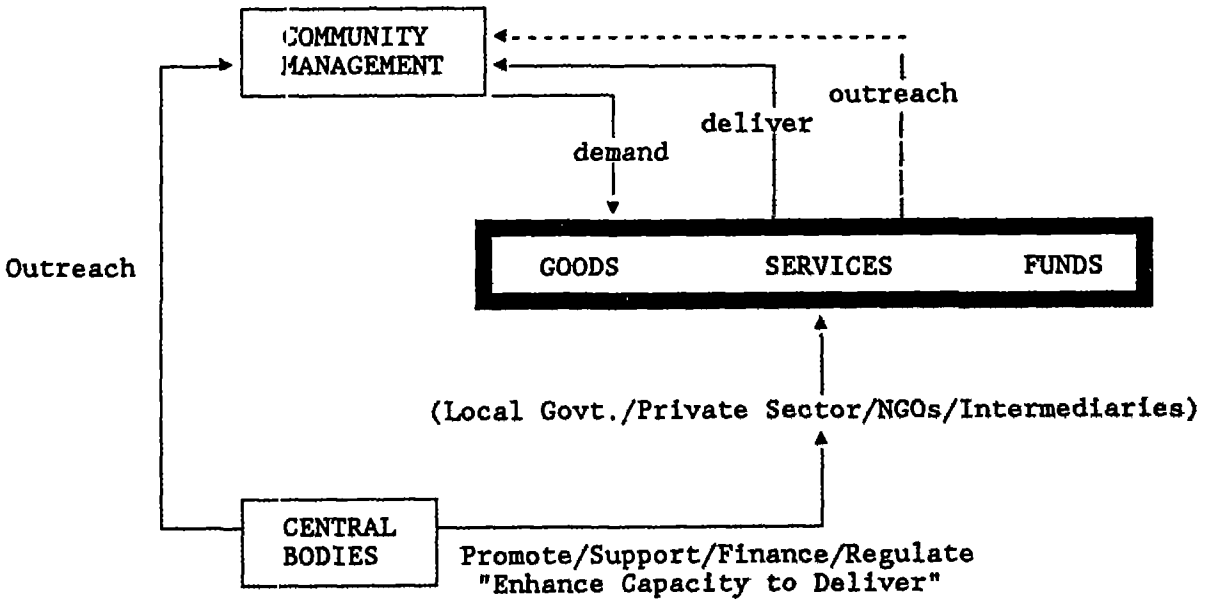
APPROACH 1: **"PROVISION"**



APPROACH 2: **"PROVISION/PROMOTION" (Shared Responsibility)**



APPROACH 3: **"PROMOTION"**



BOX 4

Review of Community Participation in Seven RWSS Projects

A review of seven RWS projects in Togo, Burkina Faso and Mali was undertaken by the UNDP/WB Water and Sanitation Program in 1988 in order to learn lessons from the project successes. The projects feature community handpumps installed on drilled wells and were chosen because they were considered to be successful, both in developing community management systems and in achieving a high percentage of facilities functioning several years after their installation. All projects followed Approach 2, as outlined in Box 3 above. Critical importance was attached to community participation in all projects. The following general comments may be summarized from the study results:

- The only management decision made by the community at the project onset was whether or not it wanted to participate in the project. Although communities were involved in waterpoint siting, few communities were given the choice between different levels of service. In all projects visited, traditional water sources were still being used, and it was clear that supply was not meeting demand.

- No project has succeeded in enabling the community to make real decisions system management, rather, in many projects, a standard management system has been designed externally and imposed on the community. The imposition of this pre-defined management system (which mandated the inclusion of several women) did not encourage, and sometimes even precluded, spontaneous and voluntary initiatives by "leading" citizens.

- Extension services, when properly planned and executed, were seen to be one of the most important and least expensive factors in achieving cost-effective and successful implementation. However, few projects planned for the continuation of extension services past the construction phase although there was an obvious need for this continued support.

- Simplifying the maintenance system is important to its sustainability and increases project effectiveness--handpump selection is a critical factor in the design of this system. A sustainable system requires: trained mechanics, an independent spare parts distribution network, *and* a community desire and willingness to pay for the maintenance of the facility. The best area mechanics were those chosen by the communities (and not by the project). These are usually bicycle or motorcycle mechanics who are established and trusted. However, there was much concern over the local availability of spare parts which frequently were only obtainable in the capital city, even if the pump was manufactured in-country.

- All projects had an upfront investment by the community, ranging from $167 to $450. The three projects which did not start with such a requirement migrated in this direction after it was realized that the communities did not feel that system maintenance was their responsibility. However, it was noticeably more difficult to raise money from communities who previously had been served free of charge.

- Finally, the review of the seven projects showed that communities are willing and able to assume the management of their RWS facilities, as long as the skills, tools and spare parts are readiliy available. However, project costs need to be reduced to facilitate replication on a national scale (total project costs per drilled well equipped with a handpump ranged between US$14,000 to US$27,000).

Source: UNDP/World Bank Water and Sanitation Program Documents.

This transitional approach is characterized by a sharing of responsibility, largely between the provider and the beneficiaries, for the functions described in above. The outreach function is now very important, although it typically remains a project responsibility. A decentralized approach to service delivery is required in order to promote community participation in facility construction and to establish dialogue between the provider and the community. If management of operations and maintenance responsibilities are shifted to the community, a spare parts distribution network must be established and artisans and communities trained. Resources must be allocated to support extension services for these community mobilization and training activities. Coordination is more complex, as different institutions must provide social and technical inputs; ministries of health and community development must coordinate their budgets and workplans with ministries of public works and water development. However these additional costs can be offset by the benefits derived from designing and constructing facilities that better suit community needs (for example, in terms of location and service level) and that will therefore be used and maintained. There is, however, evidence that this approach does not fully respond to effective demand, nor does it result in the necessary capacity building for scaling up.

The promotion approach

The last approach illustrated in Box 3 is not widespread in Africa, and is characterized by a promotion role for central government. In this approach, central governments would disentangle themselves from the provision of RWSS, and engage in the promotion of RWSS through the provision of credits (and grants where appropriate) and outreach, with long-term extension services to rural communities wishing to improve their own basic water supply and sanitation (WSS) services, as well as through the provision of incentives to the private sector to ensure the availability of competitively-priced goods and services needed for sector development. The success of this approach would require that rural communities who perceive a need for improved WSS (this perception may be heightened through hygiene education), would be willing and able to repay a part (at least) of the capital cost and all of the recurrent cost of these services. They would also be required to organize themselves to manage the services, on the essential condition that appropriate service levels and technologies are employed. Examples of private sector involvement and outreach activities are described in Box 5 and Box 6.

With regard to the functions described above, the implications of adopting the promotion approach are considerable and may require a redefinition of the roles and responsibilities of institutions at all levels: central and local governments, the private sector, NGOs, the communities themselves. Such a redefinition of primary responsibility for functions could be conceived as follows, but will vary in practice with local conditions:

a. Central Government
- regulatory function: defining and enforcing policies, standards, legislation (water resources, pollution control, water quality)
- assessment of investment priorities, national programming and budgeting
- funding and resource mobilization (tax revenues, capital markets, ESAs)
- some outreach (such as social marketing, support to trainging and private sector support)

b. Local Government
- planning and capital finance (possibly an intermediation role)
- scheme planning and design standards, enforcement of some national regulations
- major outreach function (social marketing, promotion, education)
- could assume management functions (as an extension of community management)
- advisory services (technical support and training)

c. Private Sector
- key delivery function (goods and services)
- outreach (marketing of equipment and sercices, training, etc.)
- some capital financing
- localized planning, scheme design
- opportunities for franchising
- advisory services to communities

BOX 5

Private Sector Involvement in RWSS

Private sector involvement in rural sanitation: The National Rural Sanitation Program (NRSP) in Lesotho maximizes private sector involvement in planning, financing and implementation, and in the past five years this has proven to be a viable approach. Several private entities are involved, including: local latrine builders (LLB), credit unions and building materials suppliers. The lessons learned from a review of this approach are: (i) a longer planning horizon and slower rate of increase in coverage can generally be anticipated when adopting the privatized, non-subsidized approach to sanitation improvement; (ii) once fully underway, the program tends to take on a life of its own, and is not entirely dependent on external or government inputs to continue and to expand; and (iii) a household that decides to invest a large sum in a latrine likely has assigned a relatively high priority to hygiene improvement in their home, (in addition to prestige and convenience factors), and the health impact may therefore be greater than could be achieved from a heavily-subsidized and externally-driven program. In Lesotho, four times more VIP latrines are now being constructed by builders and through contractors than are being built by the LLBs that have been trained and are monitored by NRSP. This "external" private sector activity can be attributed to the stimulation of both demand and supply by the activities of NRSP and related sector programs. Implementation can now proceed at a lower cost to the public sector than in subsidized programs, although investment in "outreach" will not be substantially different.

Private sector involvement in RWS: The Yatenga project started in 1981 and has served over 330,000 people with an improved water supply in the province of Ouahigouya, Northwestern Burkina Faso. The maintenance system put in place by the project is a good example of a sustainable maintenance system that is community-managed, with services provided by the existing local private sector. From the beginning, the project informs the communities that they will be responsible for waterpoint management. The communities, through elected water committees, in addition to making an upfront financial contribution to waterpoint construction, must hire an area mechanic to install their pumps. Thus there is a realization that the pump does in fact belong to them and they are responsible for its maintenance. There is healthy competition among area mechanics, and communities are free to select the ones they trust and prefer. Spare parts are sold by a local retailer. The public sector maintains a regulatory role in ensuring fair pricing and availability of imported parts. Project staff propose that the communities may be even less project dependent by directly purchasing the pump (at a subsidized rate) from the retailer who sells spare parts in Ouahigouya and arrange for transportation through the existing transportation network. This would establish a commercial link between the communities and the retailers from the outset.

The Lake Basin Development Authority (LBDA) started a Shallow Wells Pilot Project in Nyanza Province in western Kenya in 1982. The strategy adopted for hand-dug well construction is based on small local contractors, who carry out well digging, production of culverts for well lining, construction of the superstructure and pump installation. The contractor provides all material and equipment and usually makes arrangements for transportation. For some contracts, the project assists with the loan of tools. The project provides drawings, bill of quantities and supervision of construction. The community provides lodging and food to the staff of the contractor. Several contractors have been able to build up some working capital and have improved their management of the works considerably over the project period, which makes it easier for them to have access to credit. The system of engaging contractors for implementation and transport means that office, workshop and store requirements for the District offices are kept at a minimum. Transportation has also been privatized and the project has a total of only about 10 light vehicles and 40 motorcycles but no trucks. All transport of materials and equipment is contracted to local transporters. The transport rates are very favorable, currently KSh 5 per kilometer for pick-ups and around KSh 9 for trucks. This equals the running cost (capital cost excluded) of vehicles in a neighboring project in Western Province which manages an internal fleet.

Source: UNDP-WB Water and Sanitation Program Documents.

d. NGOs
- variety of roles including planning, financial intermediation, promotion and training
- outreach function (probably their greatest comparative advantage)

e. Communities
- involvement in demonstrating effective demand (service level), planning, capital finance
- responsibility for managing operations and maintenance (including local cost recovery)
- sustaining investment and planning for possible system upgrade.

The promotion approach risks ignoring one important lesson of grappling with poverty: that breaking the poverty cycle can rarely just be left to market forces alone and that special emphasis programs, with strong outreach and with limited and targeted subsidies, can make the difference between success and failure. The promotion approach is slow, possibly costly in its early stages, and requires the strengthening of a wide range of institutions. Important roles in service delivery are played by the private sector and financial intermediaries. Community management of operation and maintenance is a cornerstone of the approach, and merges into local government management of services as local institutions become more representative and responsive to community needs.

BOX 6

Outreach: RWSS Extension Services

A large RWSS project in the Savannes and Plateaux regions of Togo was implemented between 1980 and 1987 and serves about 600,000 people with improved water supplies (drilled wells equipped with handpumps). A total of 120 extension agents (EAs) attached to the Ministry of Public Health, Social Affairs, and Women's Condition were responsible for community organization and training for the project. The focus of project activities on government EAs and community development committees was an important feature of project design. The existing extension services were strengthened and EAs were given ample training and sense of purpose and motivation. The sustainability of this extension system is high, since the system built on the existing extension network and did not create new organizations or institutions. However, post-project activities have dramatically decreased due to a lack of resources for undertaking training activities, transportation and providing incentives for EAs, who are used to receiving allowances in addition to their regular salary for work carried out.

The project did not greatly suffer from personnel shifts, partly because it involved over 100 EAs, and the EAs worked in teams. However, other projects that have followed this same model of using an existing extension service, have had problems with EAs being transferred in the middle of an assignment. An extension system based on the government services and institutions already in place is, in principle, both sustainable and replicable, but provision for post-construction support through the financial support of at least a skeletal extension service is essential.

The Kwale project in Kenya, which started in 1981 as the South Coast Handpumps Project and is executed by the Ministry of Water Development (MoWD), recognized in 1983 that hardware alone was not sufficient in achieving the objectives of sustainable water supply provision, and local community participation and acceptance also needed to be considered. The Kenya Water for Health Organization (KWAHO), an indigenous NGO, was therefore brought in to provide sociological inputs in: community participation, training, material development and monitoring and evaluation. Although the KWAHO senior staff are recruited nationally, the EAs are recruited locally and community leaders participate in their selection. KWAHO train these community EAs with on-the-job experience and periodic in-house training workshops that focus on participatory training methodologies. Upon project completion, these extension agents will remain within the local communities which will continue to benefit from their knowledge. The core KWAHO staff can then bring their knowledge to a new project elsewhere in Kenya.

Source: UNDP-World Bank Water and Sanitation Program Documents.

V. COMMUNITY MANAGEMENT: A VIABLE SOLUTION?

An interim step

Community participation in RWSS has almost become an ideological issue; it has even been described as the "myth of the Decade". Community management goes beyond participation to encompass ownership of and responsibility for RWSS services; it entails decision making, not necessarily trench digging (see Box 7). Experience is demonstrating that community management is a viable solution in situations where there are inadequate incentives for public or private enterprise to provide reliable services; in these circumstances community management works where nothing else will.

However, community management of RWSS is generally risky and inefficient and requires goods and services to be available in the local market; single purpose institutions should generally be better equipped to manage infrastructure services of this nature, particularly where legislation (for example regarding water quality standards) creates special requirements. People living in small rural communities in Africa are already busy dealing with survival; managing a water supply is an extra burden that villagers may prefer to delegate to others. However, managing that water supply can contribute to the integrity of community institutions, thus hastening development and raising the awareness of the needs for representative local authorities, whose role will include taking the responsibility for serving its electorate.

BOX 7

Participation versus Management

Community participation refers to the involvement of communities in development activities. In the RWSS context, these may include community contributions in cash or kind, RWSS committee formation and training, hygiene and user education, and responsibility for operations and maintenance.

Community management refers to the capabilities and willingness of communities to take charge and determine the nature of development affecting them. It is the exercise of community responsibility for decision making and control over the subsequent execution of these decisions. Community management of RWSS can be seen as the community assuming the responsibility, authority, and control over operation of and/or improvements in its existing facilities.

Source: Community Management, Joint UNDP-World Bank and USAID/WASH Publication, 1990.

Community management of RWSS services may be an interim step in the development of local institutions. At one end of the institutional spectrum, community management could mean an extended family caring for a spring or village water committee managing the maintenance of a handpump; further along the spectrum it can mean a voluntary board of directors employing staff to manage a large piped water supply scheme providing only house connections. However, these differences are only ones of scale, cost and complexity; the basic model remains the same. At the other end of the spectrum, community management merges into formal public sector management, as local institutions shoulder the responsibility through a public works agency, a parastatal, or even a private sector management or lease contract.

Outreach

Outreach support is a prerequisite for sustaining community-managed RWSS services. This support, which could best be described as an extension service, assists both in problem solving on demand and in the progressive building of technical, financial and managerial skills. A special target for outreach is women, as the task of water collection for the family almost always falls on women. Provision of RWSS thus brings substantial benefits to women; furthermore, enhancing the role of women in the management of RWSS can raise the benefits arising from the investment, through sustainability. When RWSS schemes are being planned and constructed, there is a short-term need for a major extension effort to the communities; after the schemes are operational,

there remains an indefinite need for a lower level of extension activity, which may include training, monitoring and assistance with technical and/or financial issues. Questions include the nature of such extension services--whether public sector, private sector or NGO and the financing of these services. While extension services in other sectors (e.g., agriculture, health) are generally public sector, there are successful experiences in Africa of NGOs undertaking this task (see Box 6, the example of KWAHO). Single-purpose outreach NGOs could be funded through both community association membership dues and government subsidy. Such NGO "associations of associations" can also play a major role in representing community interests at a regional or national level. Ensuring effective outreach should minimize the risks of community management.

VI. CONCLUSIONS AND ISSUES

The institutional issues constraining the provision of RWSS in Africa will require making difficult policy choices, often with short-term setbacks to achieve long-term sustainability; their resolution will have major implications for governments and ESAs financing sector investments. The policy implications of decentralization and community management are also substantial for effective local government. In raising the institutional issues of providing RWSS services in Africa, this paper presents two main topics for debate:

a. The RWSS Provision/Promotion Issue

- Should governments change their emphasis from provision to that of primarily promotion? What are the implications for the other institutions operating in the sector?

b. The Decentralization and Community Management Issues

- Should greater responsibility for provision be shifted from central government to local bodies, and, if so, how can local institutions be strengthened to facilitate the implementation of sustainable RWSS services? What roles would communities have?

Some subsidiary topics for discussion are:

c. How should governments provide for effective coordination between the multiplicity of government departments at both central and local levels, and other agencies involved in RWSS?

d. Which institutions can most effectively carry out both short- and long-term extension services? How can training be most effectively provided?

e. To what extent does technology choice affect institutional arrangements for service delivery and short- and long-term operation and maintenance?

f. When is community management most effective, what is needed to enhance it, and when does it merge into formal public sector management?

g. How can governments encourage and support greater private sector involvement in the local manufacture of appropriate equipment and in the provision of goods, services and capital financing to the sector?

POSITION PAPER 5

FINANCIAL RESOURCE MOBILIZATION

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FINANCIAL RESOURCE MOBILIZATION

SUMMARY

The lack of financial resources, and the difficulties encountered in the allocation and management of these resources in the rural water and sanitation sector (RWSS) have acted as constraints on the achievement of coverage targets in countries of Sub-Saharan Africa (SSA). The decline in the overall macroeconomic situation in the region together with rising costs of service provision have served to compound these difficulties. Present financial strategies of high subsidies relative to user cost-recovery, coupled with excessive reliance on external funding from ESAs do not appear to be achieving either the objective of equity or effective use of resources. Increasing the level of resources available to the sector by mobilizing funds from central and external support agency (ESA) funding sources alone is likely to exacerbate the current inefficiencies in the sector and may ultimately result in greater inequities to society as a whole.

On the other hand, increasing the proportion of resources that are mobilized from users directly through user charges can help ensure a more effective allocation and utilization of resources and ultimately have a more favorable impact on the distribution of water and sanitation services to the rural poor. However, in order for cost-recovery policies to work it is essential that proper attention is paid to effective demand, that appropriate financial and institutional mechanisms are put into place and that a suitable regulatory framework exists for the sector. Since full or extensive cost recovery from users is not yet feasible in most countries of Africa, subsidies will still have to play a major role in financing the sector. In order to increase the effectiveness with which these funds are utilized, Governments will have to pay special attention to improving the manner in which these funds are allocated and made available, and particularly to the conditionality placed on funding provided by ESAs.

The two key questions that need to be considered in this context are as follows:

* What conditions and mechanisms are recommended to make user cost-recovery policies feasible and able to benefit all sections of the population?

* For what purpose can government grants and transfers as well as ESA funding be most effectively utilized, and what measures and policies might be recommended to ensure that these funds can directly benefit the poor on a sustainable basis?

I. INTRODUCTION

This paper will discuss issues in financial resource mobilization for RWSS in Africa. The paper is intended to provide a basis for working group discussions on potential sources of finance, mechanisms for mobilizing financial resources and their implications for achieving national and sectoral objectives. The primary sectoral objectives with which we are concerned are sustainability of services, service coverage, and the distribution of services among service users.

In the current situation, there is great concern within the sector that these objectives are not being achieved at levels and at a pace which is desirable. Sustainability of services has been a problem. In many countries as much as 30 to 40 percent of water supply and sanitation (WSS) facilities in rural areas fall into disuse or disrepair within a few years of their construction. Even though many more people are now being served than before, the rate of expansion of services has fallen short of most

countries stated coverage objectives and the vast majority of rural people remain unserved. Moreover, concerns persist that services are distributed in such a way that some sections of the population are receiving high levels of service, whilst others, usually the poorest, continue to receive low levels or no service at all.

The major financial questions posed by the current situation are whether the level of available finance for RWSS is adequate and whether the available finance is being most effectively used to achieve sectoral objectives. If the answer to the first question is no, it is essential to explore where additional financial resources can be raised and the implications of raising them from different sources for achieving sector objectives. If the answer to the second question is also no, consideration needs to be given to what changes are needed in allocation of finances, service levels and costs, and operational and financial management to increase the effectiveness of funds which are available.

Three features of the current financial picture for the provision of RWSS in Africa stand out in bold relief. First, over 75 percent of the countries in SSA experienced a decline in national income per capita from 1980 to 1987--in other words there are less overall resources to go around. Second, of the financial resources available for investment in both urban and rural sector services almost all of it comes from the central government and ESA's, with the latter source accounting for over 70 percent of the total and, in many countries, as much as 80 to 90 percent of the total. Third, existing user charges are generally insufficient to meet even the recurring costs of operation and maintenance, particularly in rural areas, with the result that to sustain almost all new services requires additional subsidies from somewhere are required.

There are many financial issues arising from this situation which could be discussed. In order to focus the discussion we have chosen to organize the paper around three kinds of financing options and their implications. One conceivable option is to continue without substantial change in current financial mobilization strategies; for example continuing to rely heavily on ESA financing of investment and maintaining the existing high levels of subsidy and minimal user charges. Experience suggests that this would imply difficulty in reaching coverage targets, especially in rural areas, continuing difficulties with sustainability, and limited change in incentives to reduce costs or to improve the management and operational effectiveness of service delivery. The other two options for mobilizing financial resources are: (i) to attempt to increase the overall level of resources from sources other than users without change in user charges (i.e., to increase the level and share of subsidy for the sector); and (ii) to increase the share of costs borne by users through user charges while maintaining the contribution from non-users. Each of these options can imply different mechanisms and will influence both the level of funds available and the probable effectiveness with which they will be used. These options and their implications are discussed more completely in subsequent sections and are suggested as a means of organizing the Working Group sessions.

Financing mechanisms and sources should be assessed, of course, in terms of their *feasibility* and their *potential for generating financial resources*. However, one of the important lessons of the Decade has been that financial mechanisms and mobilization strategies have important implications beyond their direct role in generating finances. Two such effects are sufficiently important that they are recommended as criteria for the Working Groups to use in assessing different financing mechanisms and mobilization efforts. First, the use of alternative financial sources affects who pays and who benefits and this has important repercussions on real distribution of income. For example, finance through grants or transfers from central government tax revenues are paid for by those who pay the taxes used whether or not they directly benefit from improved WSS services. Similarly, finance through cross-subsidies implies that payment for improving services for some are paid for by charges to others. The point of using this criterion is not to say that governments should not consider such alternatives; but rather to suggest that it is important to consider also the major *distributional effects* of approaches used.

Second, alternative financing sources and mechanisms have effects on the *effectiveness* of fund allocations among places and service levels and on the *effectiveness* with which allocated funds are used. Financial arrangements have profound effects on the incentives for performance of those receiving and using the funds and such effects should be taken into account. Conditionality for use of ESA and central government grants and transfers can have strong effects on locational priorities and choice of

technologies, for example. Similarly, user finance through user charges has a tendency to increase pressure to avoid unnecessary costs and to be more responsive to the perceived benefits of the services to users.

The criteria suggested will enable the Working Groups to focus attention on critical aspects of different approaches to financial resource mobilization and can help structure the discussions. Of course, they are not intended to prevent Working Groups from utilizing additional criteria if they choose to do so.

II. MACROECONOMIC SITUATION

The decade of the 1980s has been an extremely difficult one for both external and domestic resource mobilization and expenditure. Extensive external borrowing in previous decades has resulted in large outflows to meet debt obligations. In 1988, heavily indebted countries paid out about 4.7 percent of the gross domestic product (GDP) for this purpose. From 1986 to 1988, the net outflow from these countries was over $100 billion. The countries of SSA have been particularly hard hit. These countries, while not as heavily indebted in total, have a much larger debt to export ratio and debt to gross national product (GNP) ratio than the most heavily indebted countries in other regions of the world.

In part because of the heavy burden placed on economies by external obligations, many countries in Africa have experienced a reduction in per capita income during the 1980s. In almost 60 percent of the countries of SSA the decline was more than 1.5 percent per year. Many countries have reduced or eliminated spending that does not have a direct positive impact on macroeconomic growth. To date the sector has generally not been able to make a strong case for additional allocations based on macroeconomic impact. The major unresolved question is the effect of the overall financial situation on investment in the WSS sector.

Comprehensive data on the effect of this financial situation on public investment and more specifically on the share of that investment allocated to WSS is not available. We have attempted an estimate, however, based on recent public investment and expenditure reviews conducted by the World Bank (WB). This research shows that total public investment increased in Africa, on average, from 8.3 percent of GDP in 1985 to 10.3 percent in 1989. Over this same period, investment in WSS held virtually constant at about 0.9 percent of GDP or about 9 percent of public investment (see figures 1 - 3). Although these latter figures would appear positive, they are overshadowed by other negative implications for future coverage. These levels of investment are insufficient to provide services to cover incremental population growth at current per capita costs even without any increase in coverage for those currently unserved. Moreover, the financial problems of local institutions, to be discussed below, create grave doubts that all of those currently served will be provided with reliable and sustainable services.

While national incomes are declining current costs of service provision are rising. The World Health Organization (WHO) mid-decade report shows also that per capita costs in Africa tend to be considerably higher than in other countries with comparable levels of national income. A survey of 25 African countries revealed a mean cost of US$ 40 per capita for the construction of rural water supplies as compared to US$ 14.50 for South-East Asia, the only other region with comparable GNP levels. However, even though considerable progress has been made in introducing low-cost technologies to rural areas of Africa, these gains have been more than offset by increasing real costs throughout the sector as a whole. Such increases are largely the result of inconsistent sector policies and poorly organized centralized management and delivery systems that are unable to achieve economies of scale or ensure efficient utilization of available financial resources. Despite advances in low-cost technology, cost increases have also been incurred in part by ESAs sometimes insisting on the use of technologies imported from the funding source, most of which are usually more costly to operate and maintain than indigenous technology. Meanwhile, it is expected that the quantity and quality of water resources available at reasonable cost will become an increasingly serious constraint in many countries of the Region.

III. POLICY OPTIONS AND THEIR DIFFERENT IMPLICATIONS

A. Current Financial Mobilization Strategies

In this section we will look at present financial mobilization strategies and assess if there is a case to continue without substantial change. In particular we will look at the implications of high subsidy levels, as a proportion of total funding available to the sector, in terms of their impact on the objective of expanded coverage to the rural poor.

In the majority of African countries, investment in the RWSS sector as well as operation and maintenance costs of services continues to be funded largely through government subsidies generated from a variety of sources such as income tax revenues, earmarked funds, intersectoral transfers, and external grant and credit assistance. Cost recovery from users constitutes a relatively small proportion of total revenues while the private sector has had a very limited role up to now in providing either finance or service.

The general assumption behind the policy of high subsidies has been that rural populations are too poor to pay for the full cost of WSS services. Thus governments must intervene to ensure that at least a basic supply of water and a minimum provision of sanitation facilities are made available for health needs. Furthermore, in some countries potable water is viewed as a basic social right which the government is obliged to provide freely to users irrespective of ability to pay. Another reason why policymakers have advocated high levels of subsidy to the RWSS sector is that they believe that subsidies have a potential distributional effect on real income, and will result in benefits to rural societies as a whole in terms of improved health and productivity and thus to over all economic growth. In this connection it is also believed that subsidies are needed to actively promote better health practices which would not otherwise result if a price were charged.

However, experience has shown that increased coverage and poverty alleviation have not been well served by the current practice of high levels of subsidy. Because of limited resources, it has generally been impossible for entire populations to be reached, and those most likely to remain without access to clean water or adequate sanitation are usually the poorest and most vulnerable communities of the rural areas. Indeed in many countries, it is only the relatively better off people who benefit from subsidized services since they are often more accessible to service institutions than the truly poor. For the latter such notions as "free" water bear little relation to their actual situation since they continue to pay a high price for water in terms of time and energy lost in obtaining sources of drinking water; and for some severely affected areas in terms of money required to buy water from private vendors during water scarce seasons of the year.

Why has it been so difficult to increase coverage under present financing strategies? One of the reasons can be found in the manner in which funds have been allocated and utilized in the sector. The mechanisms available for this purpose are variable and cannot all be covered by this paper. Most commonly, however, funds are channelled through direct central government investment and construction, or alternatively made available through formally structured or discretionary grants and transfers to local organizations and administrations. Increasingly widespread is the creation of special funds using earmarked funds to provide support for the development of WSS projects.

The main problem with all of these mechanisms is that they encourage a top-down approach to decision-making which does not always take the ultimate beneficiaries into consideration. Resources usually end up being provided without proper concern for user perceptions of the value of the improvement, for recurrent cost implications and for selection of service levels for which users are willing to pay, since there are limited criteria used for selection of beneficiaries other than need. This can lead to the choice of inappropriate service levels and investment which is supply driven rather than demand induced. The result may be the construction of facilities which are underutilized by the intended beneficiaries. These implications are particularly serious when communities are expected to cover operation and maintenance costs of new investments, since if the communities do not value the service provided they will not pay for its upkeep.

In addition, weak planning and budgeting capacity as well as competing claims on restricted central resources often means that government and external funding can be both limited and erratic and service agencies cannot depend with any certainty on a regular flow of resources for their operations. Resultant cash flow restrictions make it difficult for such institutions to provide adequate and reliable services to communities. Moreover, this situation is often made worse since agencies' revenues are not necessarily related to the quality of service they provide but to the case that each agency can make to the central authorities for more funds to cover costs. Poor performance is thus often rewarded by additional funds. As a result, financial discipline of the government department, public utility or local organization concerned can be undermined by eliminating its incentive to control costs, raise revenues or improve its financial performance. This further exacerbates the institution's capacity to meet the needs of rural communities.

Another important issue which arises in connection with effective allocation and use of central funds is that a high proportion of subsidized support to the sector is provided by ESAs. The reason why this is significant is that external funds, if not properly directed, can have an unintentionally disruptive effect on the long-term sustainability of the sector.

While undoubtedly playing an important role in relieving immediate demands on national budgets and freeing domestic funds for other possibly more productive functions, ESA funding has sometimes proved to be a double-edged sword. Grant and credit assistance is frequently provided with insufficient attention paid to the long term financial burdens that such assistance incurs not only in terms of debt servicing for credit but also in terms of the need to make adequate long-term financial provision for recurrent costs and for the eventual replacement of depreciated items. While ESAs are generally prepared to finance capital costs, recurrent costs are expected to be the responsibility of recipient countries. Thus in some instances ESA funding can end up by placing unforeseen burdens on national budgets or local communities which countries are ill-equipped to sustain.

Moreover, external aid is frequently tied and can impose long-term foreign exchange obligations on countries which must make provision for spare parts and other accessories from abroad. It may also undermine local capacity to find less costly long-term financial and institutional solutions to constraints on the development of WSS services. An additional factor is that funding from ESAs tends to be rather unpredictable and dependent on the priorities and availability of funds from individual donors. This has consequences in terms of the ability of recipient countries to plan and implement programs with any degree of certainty particularly when in some countries as much as 90 percent of all investment in the sector is ESA financed. In some instances this has led recipients to direct their energies towards constructing new facilities on a fairly random basis, rather than focussing on building up the capacity to sustain existing facilities.

On balance, present funding strategies of high levels of subsidy relative to user payment and excessive reliance on external funding from ESAs do not therefore appear to be achieving either the objective of equity or of effective use of resources. A change in the impact of these strategies on the development of the sector would require a major adjustment in the criteria used for allocating resources, in the performance of institutions currently responsible for WSS services, and in the regulatory framework in which the sector operates.

B. Increasing the Level and Share of Subsidies to the Sector

Because the financial constraints in the sector are commonly perceived as a lack of funds rather than an inefficient allocation or utilization of existing resources, the most frequent response to these problems is to request yet more funds from ESAs and governments to support the sector. If obtained, the result is not only to increase the absolute level of subsidies available to the sector but also the relative share of subsidies compared to user payments.

The implications of such a strategy are several. First of all it is important to bear in mind that subsidizing the cost of services to users does not reduce the overall financial burden of provision of services. Someone must bear these costs; whether it is the government or other internal financial sources, or external financial sources. For instance, if the additional funding is to be provided by ESAs, it is effectively the taxpayers of donor countries who bear

the cost of the services consequently provided. While this may appear a cost that is justifiable on distributional grounds, there is no assurance that those footing the bill will be disposed to continue doing so indefinitely, particularly when no direct benefits accrue to those paying. Furthermore, ESA funding is finite and thus there will be opportunity costs incurred in terms of the alternative uses to which the funds could be put. This may be important for donors assessing their continued support to the RWSS sector. If ESA assistance is provided not as a grant but as a loan the cost will be borne by the source from which the government will raise funds to service the debt incurred.

If the funds for increased subsidies or for debt servicing are to be provided through central government grants the most common way to finance this is through additional taxation. The effect is to transfer the direct cost of provision of WSS services to those who must pay the taxes but who do not necessarily benefit from the services provided. In most developing countries the largest source of government revenue is tax on international trade, while domestic taxes such as sales, excise and value-added tax are also increasingly important. The effect of an increase in these taxes can be to discourage trade, act as a disincentive to productivity, lower income and ultimately hamper further growth. The economic cost of taxation will increase when the tax base is narrow but may also have a regressive effect on income distribution if the taxes are also expected to be paid by the poor. If funds for the sector are raised in such a manner as to contribute to a fiscal deficit in the country concerned then the repercussions can be expected to be seen in the form of high interest rates, falling private investment and rising inflation. All of these are likely to incur economic costs which will be borne across the board by both rich and poor alike; but which tend to be borne disproportionately by the poor.

When additional support to the WSS sector is financed through transfer of resources from other sectors then the cost of this allocation needs to be seen in terms of the loss of benefits foregone in the sector from which the funds have been diverted. In this case the effectiveness with which the funds will be utilized in the RWSS sector is of importance since if the returns to society as a whole on the investment resulting from this diversion of funds is less than would have otherwise been obtained by using the funds for another purpose, then there will be an overall loss of benefit to society. The poor can be particularly affected if the funds are being redirected from some other program intended to target the poor such as public health programs or literacy campaigns.

Not infrequently governments attempt to increase subsidies to the RWSS sector by transferring surplus revenues generated by urban WSS schemes to the rural sector. This practice of cross-subsidization means that it is the urban population who must ultimately bear the cost of WSS provision to the rural sector. The effect of this policy is therefore to redistribute real income away from the urban to the rural sector. At the same time, however, it also effectively penalizes the urban sector for efficient performance and may act as a disincentive to expand coverage and improve services to urban residents, many of whom are also poor.

Whether the costs that are likely to be incurred by increased subsidies are justified or not will depend in large part on the relative benefits that can be expected to accrue from the allocation of these subsidies. This is extremely difficult to estimate as benefits from improved WSS facilities are not easy to quantify. Equally important is to assess the likelihood that the funds allocated will be used effectively or at least more effectively than if they were used for some other purpose. On the evidence of past experience, it would appear that increased subsidies will at best perpetuate the types of problems described in section A above. Unless significant progress is made in the efficiency and effectiveness of public spending in the RWSS sector through, for example, better planning, budgeting, implementation and monitoring, and unless a policy environment is created that provides incentives for sound public investment and good performance, it is unlikely that increasing the share of subsidies to finance RWSS will significantly contribute to overall poverty alleviation.

C. Increasing the Share of Costs Borne by Users

Because of difficulties in mobilizing and managing centrally administered funds to finance investment in and operation and maintenance of WSS services, many countries are beginning to introduce or extend the practice of recovering costs from users directly.

The arguments in favor of increased cost recovery from users are several. Firstly, it is commonly argued that because of limited central revenues there is little choice but to recover costs from users since if they do not pay no one else is likely to. More significantly, however, there are important implications of user cost-recovery in terms of improving the way in which resources are utilized. Because revenues are dependent on user payment, user cost-recovery will ensure greater responsiveness to user preferences. There will therefore be a greater chance that investments will be more closely oriented to consumer demand and that the level of service chosen will be utilized by the communities concerned. This in turn will increase the likelihood of long-term financial sustainability. Cost recovery from users can also be more effective in ensuring a better provision of operation and maintenance services than centrally provided subsidies since there is a closer "match" between service provided and revenues generated.

From the point of view of equity, it has often been argued that user charges are inherently disadvantageous to the poor since they are perceived as a heavy burden on people who already have limited income for their daily needs. However, as explained in section A above, the policy of not charging users has hardly benefitted the very poor for whom the real cost of obtaining water can often be high in social and economic terms. Cost recovery policies if properly implemented may ultimately serve to bring water to poor communities at a lower cost than they would otherwise pay under a system of subsidies.

A number of attempts at user cost recovery in Africa have had remarkable results and have set an example of self reliance and sustainability. Malawi is a particularly good case in point (see Box 1). However, many cost-recovery policies in Africa have run into difficulties and have failed to yield the volume of revenues anticipated. This has particularly been the case for schemes implemented directly through government agencies or public utilities. Those at the community level have sometimes worked well but, particularly when set up with external assistance, have occasionally precipitated local disputes or have collapsed once left to operate on their own.

BOX 1

User Cost Recovery in Malawi

Since independence, the government of Malawi has strongly opposed the proposition that it should provide heavily subsidized services to rural people. Over time, this position was reinforced because Malawi attracted relatively little aid from countries with a strong tradition of state subsidization of services. Instead, the government policy was that rural communities would develop primarily through self-help activities, supplemented where necessary, by technical and training support from government and by materials from donors.

Starting in just one community of 2000 people in 1968, the Department of Community Development gradually developed a highly successful procedure for involving the community in planning, construction and operation and maintenance of these systems. As experience was acquired, the scope of the program was gradually expanded, to a point where currently nearly 1 million people have high-quality, reliable, and convenient water through schemes that are owned, built, and maintained (with critical but limited government support) by the communities they serve.

Initially, the program was concentrated in areas appropriate for gravity-fed piped systems, which are labor-intensive and thus ideally suited to self-help. The lessons of this experience are now being adapted to the different circumstances faced by those rural people who must be served through groundwater supplies and for groups of users on the fringes of small urban centers.

Adapted from: *Water for Rural Communities - Helping People Help Themselves*, J. Briscoe & D. de Ferranti, 1988.

The reasons for this are chiefly that the institutional arrangements and financial mechanisms available have not been conducive to sound cost recovery policies and that insufficient attention has been paid to effective demand. In other words, if user cost recovery is to be a viable financial option, it must be assured that the appropriate mechanisms and conditions are in place to make this possible. In this section we will examine the various factors that determine the ability of supply institutions and community organizations to mobilize resources from users and the mechanisms that are necessary to ensure that the resources available are effectively utilized. In particular we will review the role of willingness to pay and assess the implications and feasibility of different institutional arrangements, levels of user cost-recovery, and mechanisms for generating resources to enable users to cover capital costs.

Determining Willingness to Pay

It is often suggested that user cost-recovery is not viable in most countries of Africa because people do not have the resources to pay for WSS services. However, recent WB studies (see Box 2) suggest that willingness to pay of people in rural areas in Africa is considerably higher than is commonly assumed. It is noted that cash income from non-agricultural activities sometimes makes up a substantial proportion of total income and many communities already spend significant amounts of money on consumer items. Furthermore, in some water scarce areas, a high proportion of income is used to buy water from water vendors during dry seasons of the year. Even in areas where cash income is low, very poor households are sometimes able to contribute non-monetary resources such as labor and materials.

BOX 2

Willingness to Pay

Willingness to pay studies for RWSS have been extensively conducted in recent years in Africa by WB. The approach has been developed and refined over time in an effort to provide a reliable estimate on the actual amount that people will be willing to pay for a service. Willingness to pay can be inferred in part from direct observation of people's behavior, for example the amount of money that people are already paying to water vendors in water scarce areas, or the amount of time that they spend collecting water each day.

In addition surveyors may also inquire about general characteristics of households and about the sources of water, sanitation facilities and service levels currently being utilized in an effort to draw conclusions about the sociological, cultural and economic factors that may influence people to choose different options available. Another approach is for surveyors to ask community members hypothetical questions on the amount of money they would be willing to pay for different types and levels of service and then to draw conclusions about how many households would choose different types of service at different prices.

Experience in carrying out willingness to pay studies has revealed obvious difficulties in the sense that answers may be misleading, either because a hypothetical question does not elicit sufficiently serious consideration, or because there are perceived advantages to giving false answers. Major theoretical and methodological advances have been made, however, in understanding the biases in such studies that have helped to narrow the possibility of inferring misleading conclusions from surveys carried out. It is now widely recognized that willingness to pay studies are a useful means of estimating not only likely responses to improved services, but what conditions might be necessary to make any cost recovery policy work.

Though these indications are encouraging, estimation of demand levels has sometimes been overly optimistic, basically because there has been insufficient appreciation of what determines demand. While price and income are important influences, perceived benefits by the users themselves also play a crucial role in determining the level of willingness to pay of users. This has often been given inadequate attention by sector planners and donors who too often assume that the benefits which they perceive from new and improved facilities will be the same as those perceived by the recipients themselves. In rural areas such considerations as distance, convenience, reliability and quality can be as significant an influence on willingness to pay for water as either money price or income. If new facilities constructed do not offer improvements in these aspects it is unlikely that communities will be willing to pay for them. In the case of sanitation, perceived benefits are typically low, particularly in sparsely populated areas where the link between poor sanitation and poor health is often not made. Even with sufficient income many communities are likely to accord a higher priority to other needs such as health and education facilities rather than to sanitation.

All of the above point to the importance of ensuring that investments in new facilities will yield the kind of benefits which matter to local communities so that demand can be assured and cost-recovery from users becomes more feasible. It also strongly supports efforts to develop and more broadly disseminate benefit information and suggests that explicit marketing of services may be a cost effective mechanism for revenue generation.

Institutional Arrangements

The willingness of people to pay will be strongly influenced by the quality of service which they receive in exchange for payments made. Because of limited and inefficiently utilized resources, as well as the geographical dispersion of rural communities and the limited possibility of achieving any kind of economies of scale, agencies and utilities responsible for providing drinking water and sanitation services to rural communities have usually not been able to meet the needs of the rural population. The poor service provided, and the problems encountered in the billing and collection of funds has made it extremely difficult for such institutions to implement viable user cost-recovery programs. As a result countries are increasingly promoting decentralization of financial responsibility for operation and maintenance, and in some cases for investment in new facilities, to the level of individual communities.

From the point of view of cost recovery and effective use of resources, decentralization can pose a number of tangible advantages. Communities who are directly responsible for managing local systems may have greater flexibility to devise payment systems that suit the socioeconomic situation of the community. Furthermore, the fact that the community has direct control over the utilization of the funds generated helps to create a stronger positive link between costs and benefits and avoids the problem of communities perceiving tariffs as an arbitrary sum of money that is periodically extracted for the purpose of financing a service they do not necessarily value. If people feel that their money is being used directly for the purpose they intend, they will be better disposed to cover costs.

However, community management has in some instances run into a number of problems. One important factor is that community capacity to organize and manage financial resources has often been weak and the institutional environment in which communities operate have not always been conducive to effective management of resources. In particular, the larger the amount of funds to be recovered, the greater the problems tend to be in terms of the institutional and organization capabilities of the communities concerned. Retaining relatively large amounts of money at the village level can invite embezzlement and misuse of funds. Moreover if the funds are not immediately required there is pressure to use such funds for other projects which may be considered a higher priority by the community concerned. An additional problem that has not always been given sufficient attention is the lack of accounting skills or familiarity with proper financial management practices. An example of the type of problems typically encountered can be seen from the experiences of communities in Tanzania (see Box 3).

BOX 3

Community Managed Financing in Shinyanga and Morogoro Regions, Tanzania

The first large-scale rural water supply program in Tanzania was started in 1974 in Shinyanga region, and later followed by Morogoro region. Initial capital costs were funded in large part by external donors, while operation and maintenance costs were assumed by the Tanzanian government. While investment was successfully completed, financing of recurrent costs became increasingly difficult over time. In 1982 handpump costs in Shinyanga were TAS 1 million, while the available handpump maintenance budget was only TAS 300,000. At the national level, allocations for recurrent costs went down from an equivalent of TAS 600 million (1986 value) in 1978/79 to TAS 200 million in 1986/87.

In 1987, after a national seminar on RWSS, the Minister of Water announced in the National Assembly that people would from now on meet the costs and be responsible for the running and maintenance of water supply projects. In 1988 he further announced a ministerial circular on how to set up water development funds.

Initial experience in the two regions shows that in general there has been sufficient willingness to pay for operation and maintenance costs of water systems, despite largely subsistence incomes. Villagers furthermore seemed eager to take action to help themselves. However, in practice major problems began to occur not because of lack of funds but as a result of difficulties in the planning and execution of the management system, particularly financial management. Regional reviews showed the following common bottlenecks:

- unrealistic payment decisions taken (rates, salaries, collection frequency, collection methods)
- long periods elapsing between initial malfunctioning/breakdown and collection of the total sum for repair
- use of water funds for other public or private purposes
- village mechanics/scheme attendants not paid regularly
- no separate administration account kept for water
- no or difficult bookkeeping system
- problem with safekeeping of funds (banking services not available; need for cash on hand)
- lack of accountability and control facilitating misappropriation of funds and/or mistrust among ratepayers

Action has now been taken to remedy these problems through special village seminars and training programs in financial management, including setting tariffs, collection methods, bookkeeping and administration. In addition, financing and financial management courses have been developed for government-employed Community Development Assistants who in turn are expected to provide more widespread on-the-job training. As the measures have only recently been initiated, it is not yet possible to assess the impact of the program.

Abridged from: *IRC Case Study*, 1989.

Problems of financial management at the community level can be compounded by the absence of any viable financial intermediaries with which to deposit funds. Many communities do not have easy access to banks while lack of familiarity with the concept of banking can create a certain element of unease amongst people who are reluctant to entrust the safekeeping of their funds to an unknown institution. In addition when user cost recovery is

being supplemented by external funding from a central source, government agencies or public utilities must sometimes act as financial intermediaries in this process. Their capacity to manage and allocate these funds is often weak and they fail to coordinate effectively with communities' efforts to organize investment or maintenance

In order for decentralization to provide a viable mechanism for the mobilization and effective use of resources, it is therefore essential that the measures be undertaken to provide an enabling environment for communities, particularly by strengthening the role of financial intermediaries (including government institutions if they assume this role), ensuring rational and consistent pricing policies for revenue collection, and fully involving the local population in every step of the decision-making process for any future investments. In addition, technical advice and training need to be provided to strengthen local capabilities to manage and account for funds generated.

Tariff Structures

Appropriate tariff systems and structures are important for ensuring that the desired level of cost-recovery from users can be obtained. This paper cannot go into detail on the different types of tariff structures that can be employed in rural areas. However, the important point here is to recognize that for any cost-recovery program to work, tariffs must be perceived by users themselves to be appropriate to their economic situation, as well as equitable. Given the diversity of community situations and the fact that water facilities in particular are often communally owned, this is more easily said than done. For instance, it is difficult to find an appropriate charging system that does not penalize low users and benefit high users or which adequately distinguishes between people who are more or less able to pay and, therefore, ensure equity in the charge system. Particularly when tariffs are established by a central government agency or utility, equity may have to be compromised for the sake of simplicity as it is important to avoid administrative problems in billing and collection of revenues. In the case of community managed water points, it will be up to communities themselves to devise charging systems that are appropriate to the community situation and can take account of such factors as variations and seasonality of income. Communities may be in a better position than central agencies to institute rates that allow for a certain amount of internal cross-subsidization to enable lowest income groups to have access to clean water and improved sanitation facilities.

Determining the Level of Cost Recovery from Users

The proportion of costs recovered from users, and hence the level of tariffs imposed, will have important implications on the performance of the sector. In terms of effectiveness, achieving full cost-recovery for both capital and recurrent costs by setting tariffs equal to long run marginal costs, would help to ensure the least waste of resources and provide the greatest potential for long-term sustainability. In most countries in Africa, however, full cost recovery is not feasible at present, largely because people's willingness to pay is not yet adequate for this purpose. Instead, many governments have started by trying to ensure that at minimum, operation and maintenance costs are covered as an interim solution and that the remaining costs of the facilities continue to be subsidized (see Box 4 for details on actual costs entailed). While this improves the probability of being able to sustain systems in the longer-run, it can also present certain disadvantages.

To begin with, operation and maintenance costs typically constitute as little as 10 percent of total costs of water provision in rural areas and less than 5 percent for sanitation. This leaves a major part of the sector open to the continuing vagaries of government and donor funding. In addition making an arbitrary policy to recover only operation and maintenance costs from communities does not take into account people's actual willingness to pay which may be higher than anticipated. Thus the possibility of tapping additional resources from communities themselves is effectively eliminated.

There are additional implications to charging only for operation and maintenance. For instance, if the capital costs are being funded from an external source, there may be a tendency to try and find the cheapest system so as to save money for the investors, but for which the operation and maintenance costs may, as a consequence, be high. In addition, there is sometimes inadequate consultation with recipient communities not only on the type and level of service they want, but also on the amount of operation and maintenance costs they are prepared to cover. For this reason it is preferable, from the point of view of effective use of

BOX 4

Actual Cost Estimates

The capital and operation and maintenance costs of different WSS services will vary according to the economic situation and topography of each country. The following is an example of the levels of costs that would need to be covered in SSA:

WATER

Cost ranges for a variety of settlements, 1989 prices	Mechanically drilled borehole with pump (for pop. of 200-400) US$	Gravity-fed piped water system (for pop. of 1000) US$
Initial Capital Costs (total)	12,000.00 - 20,000.00	100,000.00 - 250,000.00
O & M (per annum, per capita)	0.25 - 1.20	2.00 - 4.00
O & M plus depreciation (10% over 20 years, per annum, per capita)	3.00 - 11.00	13.00 - 33.00

SANITATION

Estimates for Benin 1989 prices	Single pit Substructure only (Modified Mozambique) (for pop. of 30) US$	Twin pit Substructure only (KVIP) (for pop. of 30) US$
Initial Capital Costs (total)	25.00	200.00
O & M (per annum, per capita)	0.00 (negligible)	0.05
O & M plus depreciation (per annum, per capita)	0.08	0.38
O & M plus debt service (10% over 20 years per annum, per capita)	0.24	1.70

Assumptions: Single pit is unlined; twin pit is lined and emptied by hand every two years.

funds, to attempt to recover costs not only on operation and maintenance but also on at least part of initial investment costs. For example, obtaining a commitment of users in the form of either a financial or non-monetary contribution will go a long way towards ensuring both that the investment is demand driven by the community itself, and that the community will have a vested interest in not allowing their initial outlay of funds go to waste. Thus the chances of recovering costs to sustain the investment will be improved.

In some seriously poverty stricken areas, communities are genuinely unable and unwilling to pay towards anything but a relatively small share of operation and maintenance costs though some might be able to offer contributions in kind, such as labor, for initial investments. In such instances it is clear that the level of cost recovery from users will be too low to ensure long-term sustainability. Humanitarian considerations would dictate the necessity for high levels of subsidy to prevent communities from suffering undue hardship. Such instances place hard choices before governments who must weigh the relative costs and benefits of providing WSS services to such communities vis-a-vis other priorities which also need support, particularly if the capacity to make full and effective use of these resources is curtailed by poor institutional capability. In the end there is always the risk of creating a vicious circle of poverty, subsidies, dependency and yet more subsidies which drains government resources but does nothing to further the overall development of the population. This is particularly the case where inability to pay stems from inordinately high costs of providing water.

Whatever the level of cost-recovery from users, it is important that the government ensures overall consistency of cost-recovery policies. For instance, the widely different conditionality on the granting of resources from ESAs to local institutions or communities can sometimes undermine efforts to mobilize resources from communities. If in one area ESA grant assistance is provided for construction and operation of a facility, communities of neighboring areas could be resentful of paying for a different ESA or government funded scheme which might require cost recovery from users for operation and maintenance. Equally important is to ensure that people understand why cost-recovery from users is necessary in the first place. This is particularly important in areas where services have previously been provided free of charge.

Financing Capital Costs

To arrange for cost recovery from users for operation and maintenance is much more straight forward than recovering costs for capital expenditure, particularly if the community is expected to cover all or nearly all of the capital costs. If the investment is initially financed by a central agency with funds borrowed commercially or from the government, then the way to accomplish cost recovery is to build a capital cost-recovery component into the tariff structure together with an element for debt financing, if this is required. However, given that financial responsibility is increasingly being delegated to communities, alternative means are required to raise funds for investment. Problems arise in this case deriving from the lumpiness of investment costs. Usually the per capita costs involved are well beyond the reach of most individuals, and thus funds must be either borrowed or saved and paid up front. A few of the most common approaches for mobilizing resources in rural areas are outlined below.

- *Borrowing from Financial Intermediaries*

Mobilizing funds through financial institutions particularly to cover capital costs is an option that holds considerable attractions in terms of economic efficiency, and also in the sense that providing credit which must be repaid by communities will increase their sense of ownership of the system being constructed. This is crucial if the community is to provide financial support to sustain the original investment in the long-run. However, although a variety of private and public financial intermediaries such as commercial banks, credit unions and cooperatives exist in Africa, few if any have had much experience with financing rural water and sanitation services. Moreover, credit is not easily accorded to rural communities for water and sanitation schemes as these are not generally perceived by financial institutions as constituting productive investments. In any case financial institutions in the rural areas are generally rather weak with the working capital tending to be low and the rate of default high. Credit if granted at all, is usually provided on a short term basis and at very high interest rates which rural people may not wish to accept. Women may be excluded altogether through lack of collateral. Thus in practice commercial borrowing for investment in RWSS is largely not feasible at present. Before financial intermediaries can become a significant source of finance for the sector attention will need to be paid to strengthening

the appraisal and loan management capacity of these institutions and to ensuring that the appropriate legislation is in place to encourage a more extensive use of financial intermediaries by rural communities.

- *Community Fund-Raising*

Rather than borrowing commercially, communities will often opt to save first then pay up front for capital costs. This is understandable in many societies where living conditions can be unpredictable and control over ones outlay of funds becomes of major practical and psychological importance. A variety of fund-raising methods can be used such as a flat rate tax, or a per capita contribution based on property and other assets. At times alternative innovative methods to raise funds are attempted, such as generating proceeds from communal farming plots or running lotteries. Most commonly communities may draw on informal or traditional fund raising mechanisms such as the practice of su-su or tontines in West Africa, or by appealing for funds from relatives in urban areas or abroad. Non-monetary contributions such as labor and materials can also constitute a significant contribution towards such costs. Such community based methods of raising funds are often well suited to the local situation and succeed in large part because of peer pressure. However the drawback of this approach is that it is sometimes difficult to generate the volume of funds required for major investments over a short time period. Furthermore such methods can pose all the same problems of safekeeping, management and accounting already mentioned above, only that the problems are exacerbated by the larger volume of funds involved.

- *Revolving funds*

An option that has been attempted by a number of countries is the establishment of revolving funds at the local or national level. Such funds are in principle an effective means of ensuring an efficient allocation of resources and have the advantage of securing full consumer participation. However, a disadvantage of this type of fund is its special status. Funding usually comes from special earmarked sources often under a central ministry such as the Ministry of Finance or of Local Government. In a budget crunch such funds are more often than not diverted to other uses. Furthermore, the administrative and institutional capacities of those responsible for overseeing the funds is often weak and serious financial management problems are encountered. Thus if revolving funds are to be truly effective, special attention would be needed to ensure that an appropriate institution to manage the funds is selected and that adequate government support is provided to strengthen the administrative and financial management capacities of the institution if necessary.

- *General*

As has been demonstrated, increasing the share of cost recovery from users offers considerable potential for ensuring both greater equity from the point of view of better access to water and sanitation services particularly by the poor, as well as more effective utilization of scarce resources. However, it is not realistic to expect that full or even extensive cost recovery can be realized in Africa in the near future. Thus in many instances subsidies will have to play a major role in financing the sector. If so, it is essential that the capacity of financial intermediaries to manage and allocate these funds effectively is strengthened. In addition a great deal of institutional support as well as improvements in the overall policy environment will be required to ensure that community financing mechanisms and cost recovery policies in general will be effective.

III. CONCLUSIONS AND ISSUES FOR DISCUSSION

The present financial strategies of most countries of Africa have not been effective in achieving sufficiently expanded coverage, particularly for the poorest sections of the rural population. These strategies have been characterized by high levels of subsidies composed in large part by funds provided by ESAs with corresponding low levels of user cost recovery. Although financial resources available have generally been insufficient to achieve coverage objectives, increasing the level of central and ESA funding alone for this purpose may not result in major long-run distributional effects in favor of the poor.

The failure of financial strategies to achieve coverage targets has as much to do with the manner in which funding sources have been mobilized, allocated and utilized as it has with the absolute level of resources available. The alternative financing mechanisms used in this process have had an important impact on the performance of the sector. In particular the nearly exclusive use of ESA and central Government grants and transfers has tended

to encourage ineffective use of scarce resources, poor investment choices and insufficient attention to ensuring long-term sustainability. This in turn has undermined the capacity of institutions to serve a large proportion of the rural population. User charges, in contrast, increase pressure on supply institutions to be more responsive to the perceived benefits of the services by the users and to avoid unnecessary wastage of resources. By mobilizing resources from users themselves, more communities can benefit from and ensure the sustainability of improved coverage than might otherwise be the case if they were to continue to rely as heavily on a central institution to make the necessary funds available. In this respect financing strategies that attempt to increase the proportion of funds generated from users themselves may ultimately be more effective than subsidies in relieving inequities in the provision of adequate water and sanitation services to the rural population, as well as improving performance.

Because of difficulties in ensuring full cost recovery from users, subsidies will nevertheless continue to play an important role in financing the sector. In order to increase the effectiveness with which these funds are utilized, more attention will need to be paid to improving the manner in which funds are allocated and made available, and particularly to the conditionality placed on funding provided by ESAs. At the same time attention needs to be paid to strengthening the mechanisms available for facilitating user cost-recovery particularly the capability of supply institutions to ensure that funds generated by users return in the form of direct benefits to the users. In this context there is a good case to be made for using a combination of user cost-recovery measures and subsidies in a mutually reinforcing manner.

By helping to make investment more demand oriented and ensuring financial sustainability and proper utilization of facilities constructed, user cost recovery, even if only partial, can demonstrate higher returns for the sector and possibly induce more funds to the sector as a result, since it can help to avoid the impression that all investment in the sector will only create a bottomless hole into which increasing subsidies need to be poured. Subsidies, in turn, if utilized to improve the institutional environment and regulatory framework in which cost-recovery schemes operate, to promote the potential benefits of improved water and sanitation facilities, and to provide matching funds to help users cover capital costs, have the potential to play a useful role in helping to improve the prospects for higher cost recovery from users. Given the central role currently played by ESAs in the financing of the sector it is crucial that donors collaborate with governments in pursuing these objectives.

In the light of the above conclusions a number of key issues arise which lend themselves to discussion by the Working Groups. These are as follows:

- The main premise of this paper is that it is desirable to increase the proportion of financial resources that are mobilized from users directly because it not only ensures a more effective utilization of resources, but will ultimately have a more favorable impact on the distribution of water and sanitation services to the rural poor. In this context, what conditions and mechanisms are recommended to make cost recovery policies feasible and able to benefit all sections of the rural population? More specifically, what should be the recommended course of action for setting tariff levels and structures, establishing appropriate institutional arrangements, and setting up a favorable policy and regulatory framework to make this work?

- Assuming that full cost recovery from users may not be possible in the short term, for what purpose can government grants and transfers as well as ESA funding be most effectively utilized to promote the development of RWSS? What measures and policies might be recommended, particularly in the allocation of ESA resources, to ensure that these funds can directly benefit the poor on a sustainable basis? What criteria should be used in allocating these funds to communities?

- What measures can be taken to improve the financial performance of government agencies, public utilities or local organizations responsible for the provision of water and sanitation services to the rural areas, specifically as regards ensuring that funds recovered from users return in the form of direct benefits to payees?

- What measures can be taken to strengthen the performance of financial intermediaries both as potential sources of credit for rural communities and as a means of channelling centrally generated financial resources to the community level?

POSITION PAPER 6

RETHINKING SECTOR MANAGEMENT

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RETHINKING SECTOR MANAGEMENT

SUMMARY

There is an increasing awareness of the potential and opportunities that exist from achievements that have been made in the sector during the last Decade and the stage has now been reached when these can start to be translated into larger scale applications. However, this would require policy issues to be addressed and planning tools to be refined for the formulation and implementation of a framework for overall sector development. In other words, fresh initiatives are needed in the establishment of a process for what can be stated as sector strategy planning, which also includes all aspects related to policy development.

Requirements on how to improve and manage the Rural Water Supply and Sanitation (RWSS) sector vary from country to country depending on specific sector characteristics and status of development. Sector strategy planning provides a logical sequence of events leading to a coordinated and structured approach to overall sector development within which all sector investments and external support agencies' (ESAs') interventions are to take place. Sector strategy planning as a process or tool cannot be formulated as a blueprint or model but has to be applied and tailor-made to each country situation.

Sector strategy planning is the responsibility of the government but in order to achieve a consensus and a common understanding of the needs for sector development, the involvement and assistance of non-governmental organizations (NGOs) and ESAs are essential. That would also generate commitment and possibly long-term assurance on continued financing contributions. The implementation of activities identified under sector strategy planning will also suit a sector lending or program approach with ESA financing of time-slices of an investment plan.

Furthermore, an adaptive approach is more appropriate than a "traditional" approach to provide flexibility in the system with adjustments being made as more knowledge is gained. The adaptive approach also assumes that regular evaluations, say annually, will take place. These would not be limited to a specific "ESA program" but would encompass the overall activities of the sector.

The overriding emphasis during this Workshop is to provide a basis for subsequent activities to take place at the country level. In this context the two main issues to be discussed and elaborated upon would refer to:

- problems with present sector management approaches
- why a more structured approach to sector management and sector strategy planning is needed and how such an approach at the country level should be initiated

INTRODUCTION

The International Drinking Water and Sanitation Decade (IDWSSD) has focused attention on unsatisfactory water supply and sanitation (WSS) services in less developed countries and identified various methods to improve existing conditions. In this context specific issues have been discussed in preceding plenary and group sessions which briefly refer to:

- the formulation and delivery of RWSS programs (including hygiene education) aiming at an optimization of benefits related to improved health and increased productivity
- the marketing of appropriate technology as developed that would enable community level operation and maintenance and provide affordable costs
- the emergence of institutional approaches sufficiently advanced for application in larger scale implementation of RWSS programs
- the development of a local capacity in the promotion of community mobilization
- the recognition of the principles of cost recovery and effective demand and of the need for the development of systems and procedures for their application

There is an increasing awareness of the potential and the opportunities that exist from achievements that have been made in the sector during the Decade, and the stage has now been reached when these can start to be translated into larger scale applications. However, this would require policy issues to be addressed and planning tools to be refined for the formulation and implementation of a framework for overall sector development. This could be achieved through the introduction of a more structured approach to country sector management and strategy planning including policy development which is dealt with in this position paper.

NEED FOR RETHINKING IN SECTOR MANAGEMENT AND STRATEGY PLANNING

During preceding sessions, the functioning of the RWSS sector has been discussed in various contexts.

Common shortcomings referring to sector management and strategy planning aspects have been observed to be:

- sector polices and procedures are not well formulated and do not serve intended purposes
- a fragmented sector structure complicates planning which is further aggravated through inadequate coordination
- lack of realistic objectives on service coverage and of selection and priority criteria in investment planning
- erratic and cumbersome flow of funds which complicates short term planning and makes long term planning virtually impossible

Although in many countries sector master plans and a variety of related studies have been prepared, their application or follow-up has, if taken place at all, been carried out in a very ad hoc manner. Even if policy issues have been identified and recommendations made for policy changes, these have seldom been endorsed or approved by the government, which also has prevented the preparation of meaningful sector strategies. In this situation various ESAs and also NGOs active in the sector have often been left to execute their programs or projects in an isolated and uncoordinated fashion. Cases have been reported where the sector authorities have not even been aware of the activities of ESAs and NGOs.

The RWSS sector is evolving with changes in circumstances, attitudes and approaches that have taken place during the last Decade. These would mainly refer to or have implications on:

- the gradual changing role of the government from having been a pure provider to being less of a provider and more of a promotor

- the recognition of the need for a decentralization of the sector structure with basic responsibilities to be delegated to local levels

- the need for changes to take place in staffing and skill compositions which will require increased emphasis on human resources development

- the need for moving from a control-oriented to an adaptive approach in program preparation and implementation

- the introduction of the concept of effective demand in investment prioritization and determination of service level and standard

- the need for increased allocation of ESA financing and also for increased efficiency in funds utilization (individual schemes are also expected to be more expensive with an aggravating water scarcity situation)

- the need to relate objectives in service extensions to the institutional and community absorptive capacity and to establish a mechanism for progress monitoring

This should conclude that for the RWSS sector the governments would not only have to take measures to correct the sector's present deficiencies but also to adjust to the needs of the future. For that purpose, objectives will have to be set and policy issues identified and addressed and specific steps will have to be taken for their implementation, which will have to be regarded as a long-term perspective. For this to take place a more structured and adaptive approach to sector management and strategy planning than has commonly been used in the past would be required.

APPROACHES TO SECTOR STRATEGY PLANNING

Based on efforts already made and experience gained at the country level in the initiation, preparation and implementation of sector strategy planning, suggested guidelines have been prepared for "The Development of Sector Strategy and Action Plan" under the World Bank/United Nations Development Programme (WB/UNDP) Decade Program. These guidelines are proposed to be published and may provide some ideas to governments in related aspects. Also as a suggestion for sector strategy planning, "objectives," "policies" and "strategies" have been listed in an annex to this paper.

Within a framework of sector strategy planning, the following major steps could be identified: (i) preparation of a position paper; (ii) preparation of a sector strategy and action plan; and (iii) implementation of the action plan. These steps are further elaborated upon below.

The position paper should project a picture of present sector situation with identification of strengths and weaknesses. It should review sector policies and legislation; the institutional structure and intersectorial relationships; and organizational frameworks and staffing compositions. It should also review financial matters, investment planning and procedures, approaches in project preparation and implementation and operational and maintenance practices. The position paper should be sufficiently comprehensive to enable a thorough analysis of the sector taking into account its future requirements.

What can be called a sector strategy paper would then outline a strategy for the development of the sector. This could refer to:

- a consolidation and a phased decentralization of sector functions
- policy decisions to be made on financial, institutional and staffing issues
- requirements on legislative amendments
- investment prioritization

The strategy paper should be analytical and should closely examine the issues linked to sector policy; it should enable the government to decide on the direction for future sector development. The strategy paper could be concluded by the action plan, which summarizes the activities required for to implement the sector strategy.

The implementation of the action plan should be envisioned in a long-term perspective, and activities covered could refer to:

- implementation of institutional changes
- development and implementation of organizational and managerial proposals
- human resource development, taking into account future requirements for skills and specializations
- improvement of systems and procedures in accounting and financial management, investment planning, project preparation and implementation, and in operation and maintenance
- preparation of demonstration or pilot projects
- preparation of program and project packages for ESA/NGO financing

The sector strategy planning thus provides a logical sequence of events leading to a coordinated and structured approach to overall sector development within which all sector investments and ESA/NGO interventions are to take place. This process would also solve a long-standing problem that has been confronted in aid or ESA/NGO coordination. It should also be emphasized that an approach to sector strategy planning can hardly be developed as a blueprint or a model but its to be regarded as a process to be adapted and tailor-made to each country's situation.

IMPLEMENTATION OF SECTOR STRATEGY PLANNING

Sector strategy planning in any country is the responsibility of the government and the government alone to implement as a "building-up" process, taking into account both "top-down" and "bottom-up" inputs. This implies that any sector planning cannot be undertaken as a centrally directed exercise, as is often the case, but will have to consider initiatives and inputs from local levels. This is a part of a decentralization approach. In order to achieve a consensus or a common understanding of the needs for sector development, it is also essential to involve ESAs/NGOs and to get their assistance in the overall sector strategy planning process. This would also generate commitment and possibly long-term assurance on continued financing assistance. Any sector development will have to be looked at in a long-term perspective and any sustainable success can only be assured if commitments are maintained and if the implementation of established objectives is consistently pursued and adequate funds are made available. In this context it might be advisable, where they have not been retained, to reestablish the National Action Committees that were constituted in many countries at the beginning of the Decade with the major objective to monitor, coordinate and facilitate sector development.

The implementation of activities identified under sector strategy planning will suit a sector lending or program approach with ESA financing of time-slices of an investment plan. Any such program could then be composed of a blend of technical assistance, consultant services, training and extension or rehabilitation of RWSS facilities. Although a wealth of sector knowledge is available, the RWSS sector offers a wide range of disparities and will remain in an evolutionary stage for years to come. This does not make it feasible to follow a "traditional" approach in program preparation and implementation when expected events can readily be defined and predicted. Instead the adaptive approach, as explained in Box 1, would be more applicable--flexibility will be built into the system with adjustments to be made as more knowledge is gained. This would also imply that the pace of investments would be directly linked to the sector's absorptive capacity at the national, local and community levels.

The adaptive approach also assumes that regular progress evaluations will have to take place. These would not be limited to a specific "ESA program" but would encompass the overall implementation of activities identified under sector strategy planning. These activities are interrelated and as such would also be executed concurrently or sequentially. To discuss and disseminate progress made, workshops

that take place on an annual basis could be used as a forum with participation of all those involved in the sector. This could also serve as a feasible tool for governments and ESAs alike for a rationalization of a supervision process. Based on conclusions reached during such workshops, adjustments could then be made in sector strategies and in ESA programs and agreements could be reached on specific remedial measures to be undertaken.

In this context some viewpoints on technical assistance should also be expressed. An evaluation was recently made of the impact of technical assistance in three African countries with the conclusion reached that benefits achieved were not at all in proportion to the costs. It is widely recognized that there have been and still are serious problems in the proper utilization and deployment of technical assistants. The reasons for this are many, but would mainly refer to the lack of integration of technical assistance programs within an overall framework for organizational and human resource development. It could also be concluded that technical assistance will remain in demand. But through a sector strategy planning process, the form of delivery mechanism could be better structured to match identified requirements.

BOX 1

THE ADAPTIVE VERSUS THE CONTROL-ORIENTED APPROACH
(Extract from Watering White Elephants by Ole Therkildsen)

No doubt the appeal of control-oriented approach is caused by its clear division of planning and implementation activities into stages and its strong emphasis on detailed specification of future activities. If the plans are clear, surely the implementation must comply and the development activities can be controlled.

In contrast to the control-oriented approach, the adaptive one appears to be an argument for murky generalities. This is a misconception. Contrary to the control-oriented approach, the adaptive approach emphasizes:

- the formulation of long-term policies and strategies rather than long-term targets
- continuous planning linked to implementation, rather than detailed pre-implementation planning
- the regular monitoring and formative evaluation, rather than periodic evaluation, and
- continuous dialogue with intended beneficiaries to adjust activities to their needs, knowledge and commitments, rather than provision of services

However, the adaptive approach to planning and implementation does not imply that detailed planning is not needed or that only small project/programs will do. The important point is that as projects and programs grow in size, detailed planning and programming will increasingly take place. The crucial aspect is that the initial period calls for an adaptive approach, starting with small-scale activities which are then gradually expanded.

A good deal of optimism is required to initiate the changes proposed above and to carry them through. The results are strongly dependent on the political, economic and social context in which they are introduced.

The dilemma that must be confronted in such attempts is this: a faster immediate improvement of the RWSS situation may result if donors continue to use the control-oriented approach to planning and implementation. But the village-level improvements resulting from this approach are not sustainable in the long run. Much slower improvements might result at village level if the adaptive approach were used by donors. But these improvements may be more sustainable in the long run because they are also the result of local commitments and capacity to plan and implement. The challenge is to find a trade-off between buckets full of aid money and buckets full of water.

It should also be mentioned that because of the complexity of the RWSS sector, if the basic principles of sustainability and replicability are to be adhered to there would be limited scope for any immediate larger-scale program implementation. This would also infer that any program execution would have to commence on a minor scale--which could even be considered as a demonstration phase--and

only gradually gain momentum in pace with actual sector strengthening. This may very well imply that a temporary stagnation in physical works output will have to be accepted in order to gain longer-term benefits relating to the achievement of sustainable operation and maintenance of facilities being built.

EXPERIENCE FROM SECTOR STRATEGY PLANNING

Actual cases illustrating different approaches and experiences in sector strategy planning are shown in Boxes 2 to 6, which refer to Uganda, Tanzania, Rwanda, Swaziland and Côte d'Ivoire. The main comments can be summarized as follows:

- The Uganda and Tanzania cases, compared to the others of a more recent date, have more or less followed the approach outlined in this paper, but have been concerned with both urban and rural areas.

- The Rwanda and Swaziland cases, which are confined to rural water supply (RWS), describe a more evolutionary development which has taken place over a longer time period.

- The Côte d'Ivoire case is more directly concerned with the planning required for the transfer of responsibilities for handpump water supplies from SODECI to the Ivorian Water Directorate.

The following comments refer to the Uganda and Tanzania cases only:

- The concept of and the need for a comprehensive approach to sector strategy planning were readily accepted by the government and the ESAs.

- A firm leadership is required from the government to manage the sector strategy planning process and to coordinate the involvement and contribution of various ESAs.

- The problems to be expected in achieving a consensus among all those involved should not be underestimated: this is a prerequisite for any sector development to take place.

- So far no specific experience seems to exist in the implementation of an "action plan" using the adaptive approach.

BOX 2

UGANDA: APPROACH TO SECTOR DEVELOPMENT

Although it is still evolving, the "Uganda Case" illustrates one approach to sector planning that could possibly be replicated in other countries. In Uganda, the sector organization is fragmented, with the bulk of the sector activities undertaken by the Ministry of Minerals and Water Development (MMWD) through its National Water and Sewerage Corporation (NWSC) and the Water Development Department (WDD). NWSC is responsible for the seven major urban areas with WDD responsible for remaining urban and rural areas. At the ministerial level, a planning unit has been established for coordinating the sector activities.

The Regional Water and Sanitation Group (RWSG) Nairobi with UNDP financial assistance (IPF) were involved at an early stage in supporting the MMWD in preparing:

- a position paper
- a sector strategy and action plan
- a sanitation sector strategy paper
- an assessment of borehole drilling capacity in the context of rural water supply development
- organizational and manpower development study for WDD
- terms of reference for demonstration projects for water supply, sanitation and hygiene education for urban fringe areas and for rural growth centers

The above activities have been prepared in close cooperation with the major ESAs active in the sector.

In Uganda, WB (IDA) has a long standing involvement in urban water supply and sewerage (UWSS), with the objective of extending its contributions to cover rural areas as well. In this context, a UWSS project was appraised in November 1989 covering the seven major towns, while an urban project with a RWSS component is scheduled for appraisal in May 1990.

The preparation and appraisal of the UWSS project followed a program approach covering all components as identified to be required for the strengthening of NWSC as well as priority works for the rehabilitation and expansion of WSS facilities. IDA financing covers only a part of the program, and supplementary financing is to be provided by other ESAs. A mechanism will also be established to coordinate the implementation of the program with annual workshops to take place to assess progress made.

In RWSS, the major ESAs are UNICEF (with SIDA financing support) and DANIDA with the proposed IDA-financed RWSS component to be complementary to input provided by the others within the structure of the action plan. The IDA contribution should also be considered as a preparatory phase for subsequent longer term involvement. As for urban areas, annual progress will be evaluated and discussed during workshops with subsequent adjustments to be made to on-going programs and projects, which implies the application of an adaptive approach. It has also been proposed that under the IDA-financed component, a technical assistant will be appointed for the major function of sector development coordination. It is also envisaged that extensive support will be rendered by RWSG Nairobi, which, however, should not be assumed to serve the objectives of the IDA projects only, but should be regarded as a major instrument to assist the MMWD in its overall efforts in sector development.

It is obvious that sector planning is just an initial phase and unless there is a commitment by government and ESAs alike to its long-term implementation, any progress in improved RWSS services will remain elusive.

Source: abstracted from WB documentation

BOX 3

TANZANIA: APPROACH TO SECTOR DEVELOPMENT

In Tanzania, ESA/NGO support to the urban and rural WSS sector has been longstanding. Significant investments have been made in WSS facilities but the development of an adequate operation and maintenance capacity could not keep pace with new works being commissioned.

The Nordic donors have been particularly active in RWSS and in the Spring of 1986 a workshop was held in Arusha and a strategy was broadly outlined for the further development of the RWSS sector with actions to be taken summarized in 23 recommendations.

Under the Decade program and UNDP financing, a technical assitant was attached (from May 1986) to the Ministry of Water (MOW) for a three year period to assist in the overall coordination of WSS sector development. Specific functions were identified as:

- preparation of a position paper outlining present sector situation
- preparation of a sector strategy and action plan (SSAP) integrating the "Arusha recommendations" into a wider sector development framework
- implementation of activities identified under the action plan

The position paper and the SSAP were prepared by MOW, the latter was prepared with the assistance of RWSG in Nairobi. The ESA community was also involved from the beginning, and draft documents were submitted for their review and meetings were held when specific issues were discussed. The SSAP also formed the basis for a policy paper that was prepared by MOW and approved by the cabinet. In order to reconcile different ESA approaches in achieving community participation and management, "guidelines" have also been drafted and disseminated.

For the implementation of the action plan, a UNDP-financed project--as a continuation to the previous one--has been formulated and approved. It includes provisions for technical assistants and funds for consultant services and training. The project complements activities being or to be undertaken under other ESA-financed programs or projects. The project was designed in consensus with ESAs working in the country and parallel financing was also secured from FINNIDA.

The stage has presently been reached when the technical assistants are being recruited. Progress to be made in the implementation of the action plan is also proposed to be evaluated, discussed and disseminated during workshops to be held annually.

Source: abstracted from WB documentation

BOX 4

RWANDA: SECTOR DEVELOPMENT PLANNING

Electrogaz, a parastatal agency responsible for urban water supply was formerly also responsible for RWS but its activities in rural areas were in practice very limited. Many of 292 existing RWS systems were built by several NGOs and operation was entrusted to one of them, the Association Internationale de Développement Rural (AIDR). Funds were allocated by the Government to AIDR for operation with no financial participation from the rural population. Over the years, funds allocated were not increased despite an increase in the number of facilities entrusted to them with the result that AIDR eventually went bankrupt.

In 1981, under the initiative of IDWSSD, a National Water Supply and Sanitation Committee (CNEA) was created whose role was to advise the Government on all matters relating to water and sanitation, particularly on the organization of the sector and the planning and coordination of sector activities. Its main achievement has been to inform the Government of sector needs and constraints and to study different alternatives for the reorganization of the sector. In 1984, a General Directorate of Water (GDW) was created within what is now called Ministry of Public Works, Energy and Water, with responsibility for RWS. A new committee called the Interministerial Coordination Committee (CIC) was also established in 1984 to determine sector policies and to oversee their implementation. At about the same time, an IDA-financed institutional study was launched. The CIC reviewed the institutional study and approved its recommendations.

Until the creation of GDW, the lack of RWS institutions and the absence of financial resources prevented the upgrading of RWS facilities and resulted in poor operation and maintenance and deterioration of the facilities. The role of GDW was to take over the sector and to implement the new institutional, legislative and cost recovery policies recommended by the institutional study. The necessary decisions were taken by Government Council in November 1985. The planning stage was thus set for a new sector development strategy. It was decided, in accordance with the recommendations of the institutional study, to give the communes full management responsibility for the RWS systems with the participation of users' associations. Beneficiaries would cover the full cost of operation and maintenance and renewal of facilities. Financing for investments would be obtained from a National Fund for RWS to be created as a special account of the existing Communal Development Fund. Encouraged by the proposed institutional, legislative and cost recovery reforms for the sector, a RWS project was prepared and is now being executed with the joint financing of several ESAs to extend and rehabilitate existing RWS systems and particularly to implement sector reforms.

To date, the following has been implemented:

- The National Fund for RWS was established as a special account of the Communal Development Fund, and the rules for operation and management of this fund were adopted in 1988.
- A Decree was passed in 1987 for the restructuring of The Directorate of Water, enabling it to better respond to its responsibilities, particularly in the strengthening of its technical staff through recruitment and intensive training.
- A Decree was also passed in 1987 for the creation of intercommunal associations.
- A draft model contract has recently been prepared which would define the obligations of the users and ensure their participation in cost recovery measures.
- NGOs are being invited to assist the rural population and the communes, thus involving the population in the financial and technical management of their water supply systems.
- A study is being carried out for the rehabilitation of existing RWS systems.

Thanks to the sector planning process initially established and the subsequent adjustments made to it, Rwanda's RWS sector has been able to lay a solid foundation for its future development.

Source: abstracted from WB documentation

BOX 5

SWAZILAND: SECTOR STRATEGY AND ACTION PLANNING

The RWS program in Swaziland has developed steadily since the initiation of a diversity of RWS projects in the 1970s. The establishment of the Rural Water Supply Board (RWSB) in 1975 began a process of institutional development to the point where the RWSB, staffed entirely by trained Swazi engineers, technicians, community development officers and support staff, now have the capacity to plan, design and promote the construction of a range of standard RWS systems.

From an earlier focus on project planning, institutional development has enabled the Government of Swaziland to develop a more broad-based planning framework for the sector. Formulation of the sector strategy followed an analysis of needs and capacity by small working groups, involving staff from the full range of interested public bodies and consultation with private and NGO representatives. The preparatory meeting resulted in a national seminar which produced two key documents, including a statement of national plan of action for the three year period from 1986 to 1989.

The planning documents are distinctive in that the sectoral plans are perceived as a whole, dealing with both the rural and urban sub-sectors and covering the major financial and institutional issues in the sector. Sector strategies defined in the resulting documents include:

- Coordination of water supply, sanitation and health education activities to maximize health impact
- Community participation in planing water systems and community management of facilities
- Community assumption of "a fair share" of construction costs
- Community assumption, through Water and Sanitation Communities, of ownership, all operation costs and "basic" repairs
- Priority given to water development in the Lowveld, where the need for water is greatest
- Standardization of water supply systems
- Adherence to established design and construction standards by all implementing agencies

These key planning documents have subsequently been revised by the leading sector institutions and the detailed action plan has been completed for the period 1989 to 1992. Subsequently, the Government has revised its development strategy of national plans and these key documents--which provide the policy framework and action plans for all government, donor, private sector and NGO activity--in the sector, will be updated yearly. The development of an effective planning framework has enabled the Government to better coordinate and promote implementation of different projects and achieve efficiencies through broad-based planning.

Source: abstracted from WB documentation

BOX 6

COTE D'IVOIRE: RESTRUCTURING RURAL WATER SUPPLY

When project activities began in 1982, there were about 13,500 boreholes equipped with handpumps in Côte d'Ivoire, most of which were not working because of poor maintenance. Operation and maintenance were the responsibility of the private Ivorian Water Utility, SODECI. The failure of the handpumps was due to SODECI's application of a costly and inefficient centralized maintenance system to the highly dispersed RWS sub-sector--a system which had proven to very successful for urban piped water supply operations. In 1983, the Ivorian Water Directorate, through the support of technical assistance funded by the project, began a series of pilot RWS projects and mechanical tests on handpumps to improve their availability. These tests, which occured over three years (1983-85), both (i) revealed the possibility of substantially improving handpump maintenance and reducing the costs by entrusting the reponsibility to the villagers; and (ii) resulted in substantial improvement of the most vulnerable handpump parts.

The key for the success of this transfer of responsibilities was the villagers' motivation, which was difficult to create, given the failure of several contradictory field activities pursued by different administrations prior to the project. The only way to attain credibility was to carry out pilot demonstration operations with the full involvement of the villagers. The process was slow and some confusion was created when the Ivorian Water Directorate tried, with the assistance of WB, to make operational as many handpumps as possible, while the responsibility for maintenance of rural waterpoints was still officially entrusted to SODECI. These field activities culminated in 1985-1987, when the "Eau Toujours" operation successfully achieved the transfer of 1,500 handpumps, scattered throughout Côte d'Ivoire, to villagers.

Confident of the validity of the transfer method that had been applied in the "Eau Toujours" operation (which went well beyond the pilot project initially foreseen), the Government and WB--based on the recommendations of a RWS sector study carried out by the WB project team--agreed to extend the transfer of all rural water points to villagers. This was made official by Presidential Decree on December 17, 1987.

The general transfer began in 1988 and will be achieved in 1991. The following actions have been realized to date:

- sensitization of all villages to adhere to the transfer operation, materialized through contracts made between each village and the Water Directorate and through works carried out by the villagers at the water points such as fences, slabs and shallow wells to receive spilled water and drainage
- identification and training of a handpump repairer at each village capable of making the simplest repairs
- identification and training of 500 field mechanics (currently involved in repairing cars, motorcycles, maize-mills, etc.) for the most difficult repairs of handpumps, and provision of to them of appropriate tools paid in kind through handpump repair
- provision of spare parts for the rehabilitation of non-operating handpumps
- creation of a private network of spare parts for both rehabilitation and long-term maintenance
- rehabilitation of 5,000 handpumps (of a total of 10,000); actually, approximately 3,500 handpumps will not be rehabilitated for various reasons: in certain villages, handpumps were replaced by piped water supply systems; some villages moved to other locations; certain villagers have no motivation to maintain the pumps at their own cost; disappearance of the ground water table

The result of the general transfer will be that about 4,000,000 people in 8,000 villages--or 40 percent of the population of Côte d'Ivoire--will have access to safe water and will be able to secure the maintenance of rural water points. This project component will cost approximately US$8 million or US$2 per inhabitant.

Moreover, the restoration of RWS services will induce substantial time savings for women and girls in fetching water and will greatly alleviate their burden. The deterioration of existing facilities, which has compelled women and children to turn back to surface water and traditional wells, has had a negative social, health and economic impact, particularly in the Northern regions, which are the poorest in Côte d'Ivoire.

CONCLUSIONS

It could be concluded that:

- There is a need for n fresh initiatives in sector management and strategy planning and for the establishment of a process for regular evaluation of achievements made.
- Sector strategy planning is a government responsibility but it is essential that it is undertaken as a joint effort among those involved in the sector.
- All ESA/NGO interventions in the sector should form a part of a sector strategy planning process.
- For sector development planning to remain sustained, long-term commitments are required from governments and ESAs/NGOs.
- The adaptive approach should be applied in program formulation and implementation, enabling adjustments to be made according to changing situations.
- Country sector strategy planning would also enable ESAs/NGOs to formulate their own strategies for potential long-term contributions to the sector.

The overriding emphasis during this Workshop should be to provide a basis for subsequent activities to take place at the country level. In this context, the two main issues to be discussed and elaborated upon refer to:

- problems with present sector management approaches
- why a more structured approach to sector management and sector strategy planning is needed and how such an approach can be initiated at the country level

Some more specific "sub-issues" could be formulated as follows:

- What actions should be taken by the Government for initiating, managing and monitoring a sector strategy planning process?
- What particular assistance can be provided by ESAs/NGOs (including RWSGs) in sector strategy planning?
- What are the approaches in the preparation of "adaptive programs" for ESA financing for sector development and investments?

In this context and as a conclusion, reference is also made to the statement published during the Collaborative Council meeting in Sophia Antipolis, France (November 28-December 1, 1989) as shown in Box 7.

BOX 7

COUNTRY LEVEL COOPERATION IN WATER SUPPLY AND SANITATION

Delegates from 15 developing countries and 45 ESAs attending a meeting of the ESA Collaborative Council in Sophia Antipolis, France, from November 28 to December 1, 1989, gave a high priority to sending this statement on the outcome of their deliberations to developing country governments and all ESAs.

1. Revitalized campaigns to expand the provision of sustainable WSS services to those in greatest need should be a major component of strategies to protect and enhance the environment and improve the health and well-being of all the world's population in the coming Decade.

2. The parallel goals of reversing environmental degradation and combatting growing health threats are firmly linked with progress in providing safe water and adequate sanitation. The vital integrated approach to all development calls for innovative collaborative structures among developing country agencies, and WSS agencies are taking the lead in promoting such collaboration at the country level. The external support community is committed to support these initiatives by helping with the necessary institutional development, providing long-term technical and financial assistance, and adopting common strategic approaches to optimize the use of available resources.

3. Country-level cooperation among governments, national and local organizations and ESAs is essential, to maximize the use of limited financial, human and natural resources, to avoid duplication of efforts, and to achieve project sustainability.

4. We stress the importance of governments taking the lead in developing program frameworks and coordinating implementation efforts within those frameworks. Each framework needs to include sound policies, priorities and plans, and should clearly define the roles of government, communities, ESAs and NGOs.

5. ESAs are prepared to assist governments in developing a program framework, if requested, and should ensure that projects they support are in full accordance with the program framework developed by the government.

6. ESAs must cooperate among themselves in supporting country initiatives and should identify ways of achieving this in each developing country.

7. We emphasize the importance of information exchange, monitoring, and management training, in achieving country-level coordination and efficient use of resources.

8. Country-level cooperation may be difficult, time-consuming and costly to achieve in the short term, but is essential for long-term sustainability.

9. Country-level cooperation will require flexibility and pragmatism on a country-by-country basis.

10. We are convinced that the goal of achieving sustainable WSS services for the needy will be greatly assisted by redoubled efforts in country-level cooperation.

ANNEX: Sector Strategy Planning, Suggested List of Objectives, Policies and Strategies

The objectives are defined as:

- **Rural Development.** RWSS must, either as part of an integrated or as a separate project, contribute to increased well-being of the rural population and to improved environmental conditions.
- **Improvement of Human Productivity.** RWSS can reduce time required to obtain water. The time saved can be productively used if the right opportunities are created concurrently.
- **Health Improvement.** RWSS combined with health education contributes to general health improvement and can eliminate specific health hazards, such as guinea worm infestation.
- **Long Term Sustainability.** Whatever the benefits to be derived from RWSS investments, they must be sustainable for the long term.

Other objectives are:

- provision of basic services to the greatest number of people prior to improving service standards to the few
- provision of water for limited gardening and animal husbandry
- increasing efficiency of RWSS investments
- encouragement of private involvement in the sector

The policies to be followed would provide for:

- *Community Management* of RWSS to assure long term sustainability. The community, through an appropriate mechanism (committees, cooperatives, associations), would assume responsibility for selection, implementation and operation of facilities.
- *Support Structure* to assist community with tasks it cannot handle alone. The policy would provide for de-concentration of existing centralized structures and provide a role for the private sector including NGOs. The policy would also define the participation of ESAs.
- *Program and Project Justification* on the basis of specific measurable improvements of productivity and health consistent with overall investment priorities of rural development programs.
- *Cost Recovery* which would provide initially from users' fees as a minimum funds sufficient for operation and maintenance and a portion of construction cost, in kind or cash, commensurate with the economic status of the community with the long term goal of full recovery.
- *Resource Allocation* from government and external sources which reflects in amount and credit conditions the communities' financial capacity and the government's development objectives. Justification and amount of grants would be indicated.
- *Institutional and Human Resource Development* providing for adequate autonomy, continuity, financial and human resources to support target communities.
- *Coordination* of efforts at the national (interministerial) and regional/district levels, and with the private sector and ESAs.
- *Privatization* of RWSS activities to increase effectiveness and reduce costs, if necessary by providing incentives.

Specific strategies to be followed will depend on objectives to be achieved, but could in general be:

- *Initial Investments* in program and project development should be for health education, communications and demonstration facilities to stimulate demand/verify need--a marketing effort.
- *Willingness and Ability to Pay.* Project priority should be based on demand (need) and on willingness and ability to pay. Once prospective users understand benefits, they are usually willing to pay and able to finance at least a portion of the costs themselves.
- *A Support Structure* to serve the user with technical assistance, credit and spare parts during and after project implementation should be in existence or established as part of project preparation activities.
- *Credit and Costs Recovery.* Mechanisms need to be established to provide the user an opportunity to borrow and repay funds. Willingness to pay reflects not only understanding and income but also the ability to

borrow and the convenience of repaying (e.g., patterned to reflect income fluctuation; charging rural cooperatives to collect payments prior to profit distribution). Means such as revolving funds should be considered to provide conventional credit and repayment facilities. National, regional or community revolving funds could be financed with ESA and government (central, provincial, regional) contribution and managed by banks, cooperatives and/or communities. The Funds would extend credit to and collect repayment from users. Repayments would be used to provide credit to additional users (community or individuals). Progress in extension of service would be proportional to the effectiveness of cost recovery. Lenders could make future assistance proportional to the effectiveness of cost recovery and the period of credit. Appropriate procedures for financing and management of these funds would have to be developed. The funds would receive loans, credits, grants and cross-subsidies for onlending to users. Service fees could be established to reflect administrative costs, user economic status and government development objective.

- *Privatization.* To encourage private entrepreneurs to enter the field, credits for equipment purchase (or leasing by government) or other incentives and training opportunities would have to be provided. A mechanic-contractor could provide major maintenance and repair services to a village caretaker under a contractual arrangement (possibly guaranteed by government) more effectively than a government district office (proximity, no overhead, etc.). Manufacturers should be encouraged with training, credit and marketing assistance to enter the RWSS equipment market. Shop-keepers should be encouraged to stock spare parts through elimination of government monopoly and purchase credits.

- *Community Management* should be implemented using agents skilled in training and supporting the community from appropriate government agencies or NGOs or a combination of the two. For example, government could provide general guidance with NGOs providing training and implementation services under contract with the local community.

- *Legal Framework.* Although the community is usually legally responsible to provide infrastructure services, it often does not have the legal authority to contract for outside assistance. National authorities need to pass necessary regulations as appropriate.

- *Training* of local, district and national staff should be managed as part of a national WSS program. A community by community approach would not be efficient, and technical assistance will have to be provided by the sector in any event.

- *Coordination.* The WSS Sector in many countries is fragmented, with many independent or semi-independent authorities. Frequently, RWSS responsibility is assigned to a ministry different from the one responsible for UWSS. Whether separated or joint, procedures must be established to facilitate the provision of technical assistance from UWSS to RWSS because the staff resources and expertise usually reside in the former. Specific tasks, such as technical training for the entire sector, could therefore be assigned to UWSS and urban authorities could provide technical support to rural communities in their regions, under mutually satisfactory contracts. Rural agencies may also be able to provide T/A to urban authorities, for example, in community participation activities in urban fringe areas, ground water hydrology and abstraction, etc. Other activities need to be coordinated with other ministries (Health, Agriculture, Public Works, etc.) and other agencies. Coordination is also necessary with ministries of finance, economic planning organizations and ESAs. A national coordinating body is often the most effective method to accomplish this coordination.

- *Technology Choice* has a major impact on cost and thus on cost recovery effectiveness. The closer the technology matches the users ability to pay, the quicker the repayment, the faster expansion of services. To ensure that the greatest number of users benefit from at least basic services, credit assistance should be limited to basic needs service facilities. Costs associated with increased convenience should be funded by the user himself without outside assistance.

DISCUSSION OF WORKING GROUP REPORTS

The final plenary session of the Workshop was held on the afternoon of the third day, when the main business was to receive reports from the five Working Groups. Each of the rapporteurs highlighted the key points of their respective group's report. These comments are not repeated here, but the reports of the five Working Groups are printed in Annex A.1-6.

Following the group presentations, one of the group chairmen drew attention to an item highlighted by his group. He indicated that there is a tendency to define levels and call it decentralization to the local levels, when actually one is talking about government structures--civil servants--acting at the local level as if it were the community. He noted that through the presentations of the other groups it is clear that if you want things to happen, it has to be at the grassroots level. The grassroots level can be the people themselves or it can be layers of government, of conceptions of civil servants in different layers of the hierarchy. He added that in his group there was some criticism of donor agencies who begin by initiating some demand, saying this or that needs to be supported. He claimed that when there is a change of emphasis in the international community everybody goes to it. When the international community changes and says that it is now looking to emphasizing the decade on water and sanitation, the countries find that instead of continuing the programs which were started on the previous global topic, external support agencies (ESAs) start shifting and say "we cannot continue funding such programs which were based on the other slogan; now we are focussing our attention on another."

In response to this comment, one ESA representative stated that in the Kuwait Fund for Arabic Economic Development budgets are not allocated for certain sectors. They leave it up to the governments concerned to choose the projects they wish the Fund to participate in financing. This practice resulted in some rather peculiar situations. While everybody was talking about raising money for the water sector, the Kuwait Fund discovered that they were getting a lot of requests for roads; when everybody was talking about promoting the participation of women, they got requests to fund other sectors. He held the view that financing agencies actually chase developing countries and direct them towards certain sectors while they may have difficulties in other sectors. He believed that the government should take the responsibility of deciding what is the priority and then the financing agency should appraise the project and find out whether the available studies are adequate or not. If projects are not adequate then the Kuwait Fund may provide technical assistance to carry out a feasibility study.

He also stated that it has been mentioned that perhaps if too much is left up to the government, it may tend to choose projects which are prestigious. There have been cases where some governments have preferred prestigious projects, but if this is the case, the Kuwait Fund feels that a feasibility study will expose it. The Fund had several incidences where it did have requests from high officials for certain projects, and then at a later stage it discovered that the projects actually had no great value. In those instances, the Kuwait Fund advised the government concerned to change its request and develop more viable projects. He believed that the Fund's role is much more one of acting as confidant for the borrowing country than of taking an active part in directing their policies.

Mr. S. Rotival, UNDP/WHO Decade Coordinator and Chairman of the ESA Collaborative Council responded to a question posed by one of the group chairmen. He thought that it is fair to say that the water and sanitation sector, together with one or two other development sectors--including tropical forestry, agriculture research, and perhaps one or two others (and this is an extremely positive factor)--is among the few development sectors where there has been a strong and visible consultation by the ESAs supporting the development of the sector. Clearly showing their support for the developing countries' management of the sector, ESAs have met on four or five occasions--initially in 1984, the development assistance committee of the OECD in 1985, Interlacken in 1987, in The Hague in the Netherlands in 1988 and most recently at Sophia Antipolis in France in 1989--expressly to try to determine how

(referring to other issues which were raised that afternoon) ESAs can harmonize their approach in support of the developing countries.

He preferred to use the word harmonization or cooperation between ESAs rather than coordination, coordination being the prerogative of governments in developing countries. He stated that it is important to have a harmonized approach (including a further integration of the sector towards primary health care, hygiene, environmental considerations and water resource management with respect to sanitation), but even greater significance to his friends and colleagues is the issue of how support to developing countries can be accelerated in the 1990s. He stated that there is a very strong backing from ESAs with respect to moving forward on an accelerated basis with support to the developing countries in the '90s through the year 2000.

The very fact that African countries and ESAs were meeting that day was a very clear indication of both the interest of the African countries in the sector and the interest of ESAs. The fact that in three months time a similar meeting would be taking place in Manila under the sponsorship of the Asian Development Bank was also a reflection of this. The fact that in September of this year in New Delhi there would be a Global Consultation of all the developing countries from all the developing regions to define a strategy for the '90s is yet another sign of support. The objective of the present meeting is for Africa to carry a message to New Delhi--based upon the participants' perception of the issues and based upon their priorities from a regional point of view--which will make a clear statement to governments and ESAs. The ESAs also hope that this meeting would result in a very strong statement from Africa which could be carried to the Global Consultation, "Safe Water 2000," which will be held in New Delhi in September of this year. The purpose of all these events--the purpose of the discussions of the past three days and during the next two days, and the purpose of subsequent meetings, including the one that is currently taking place in Caracas for the Latin American and the Caribbean countries under the sponsorship of the United Nations Economic Commission for Latin America and the Caribbean--is for ESAs to work with developing countries, under country leadership, to define an accelerated strategy that can be implemented in the '90s. In the final analysis--as the last discussant said--it is clearly up to the developing countries' governments to determine within their rules of development strategies, what their priorities are from a sector point of view. He assured the delegates that when it comes to ESAs, the support is in place for an accelerated program of full service coverage through the year 2000.

In response to the question of what happens next, Mr. Doyen of the World Bank stated that before leaving the participants would receive typed copies of the five Working Group reports plus the consolidated synthesis of those five reports as an input to the Conference Statement for New Delhi (the Working Group Summary Report is reproduced on pages ---- of this volume). Secondly, he said that it was intended to prepare a summary of proceedings which will include the presentations which have been made, the background papers and the background of the group reports. The idea would be to give participants a reference document which would be the record of the meeting for any further reference. He hoped that this official record of the Workshop would be disseminated within the participants' own services and to training institutions or any agency which would have use of the report, including ESAs. The third step will be to complete the preparation of the sector strategy brief which had been initiated and come to the point where the interaction of this Workshop was really necessary. This document should be ready by the end of the year and will be disseminated very broadly through the service of the World Bank and UNDP to each individual participant.

The Chairman then called upon Mr. Doyen to make his closing remarks, which follow.

CLOSING REMARKS

Mr. Jean Doyen
Chief, Infrastructure Division
Africa Technical Department
The World Bank

The value and impact of our work will ultimately have to be measured in terms of advancement in the availability and quality of water for rural populations as well as in their improved health and hygiene. Our task was to establish a common ground for renewed efforts to support effective and sustainable water supply and sanitation services to rural populations.

I believe that this objective has been largely achieved, thanks to your hard and serious work. You have risen to the challenge; we at the World Bank, and eventually the broad constituency of technicians, planners and community leaders who hold responsibilities for rural water supply and sanitation (RWSS) will be enriched by your experience and your advice. The Workshop has once again shown the value of well-structured cross-country exchanges.

One aspect where further sharing of experience will be extremely useful is the development and implementation of appropriate technologies. The effective dissemination of technology advances will be an important determinant of the future rate of progress of the sector. One aspect which might not have been stressed enough is the role small entrepreneurs and mechanics specialized in RWSS would play in the promotion of the sector.

The second aspect where future comparative policy analysis and country exchanges would be important is in the planning and management of sector reform and institutional changes. The shift from institutional structures based on central planning and control to ones driven by response to local initiatives will imply far-reaching changes. It will raise for central governments and large external support agencies the issue of intermediation, that is how to distribute centrally provided resources (funds, technical services, etc.) to local communities. This is another point on which further reflections and cross-country exchanges would be of high value. The issue arises in other sectors; the underlying question is the organization of local governments.

One of the central questions is how to establish bridges between the informal and the formal sectors; for example, how to deal with mutual credit and with the legal status of local communities. As original approaches to these questions emerge, they should be disseminated. This in itself is one of the major *raisons d'etre* for regional cooperation in the sector. One of the surprises of the Workshop is the attention that is being paid to rural and peri-urban sanitation. This is, of course, even more relevant for urban areas. Policymakers and planners will have to give sanitation and waste management its rightful place on Africa's environmental agenda. It is the poor that bear the brunt of environmental degradation.

These are only a few of the questions for which strengthened regional cooperation can make a difference. I hope that the Conference planned for the next two days will provide us with opportunities to reflect on the direction and organization of future regional cooperation, focusing on ways to strengthen the role of African policymakers and practitioners in setting the orientation of such cooperation.

Our Workshop has come to fruitful conclusions. We must thank the experts and the staff that labored for its preparation. They will understand if I single out Mr. Alexander Rotival, who lent his faith to the undertaking and has since worked indefatigably to gather the resources that made this meeting possible. Our thanks also go to each of you, the participants, for answering the call and working hard. Special thanks are due to the chairmen and rapporteurs of the working groups. I am confident that I speak with your voice in expressing our gratitude for our chairman and moderator, Mr. Chaufournier, as well as Dr. Obeng, our attentive co-chairperson. My final words of thanks go of course to the Government of Côte d'Ivoire for its welcome, its support and its participation.

PART II

WATER SUPPLY AND SANITATION

SECTOR CONFERENCE

May 10-11, 1990

WATER SUPPLY AND SANITATION SECTOR

CONFERENCE PROGRAM[1]

Thursday, May 10, 1990

Time	Session	Topic	Speaker(s)
8:30 am	1	**Opening Ceremony**	
		• Welcome Address	Mr. G. Avika, Vice President, ADB
		• Keynote Address	Mr. F. Hoque, ECA Representative
		• Opening Speech	Mr. Bamba Vamoussa, Minister of Public Works, Transportation, Construction and Urbanism, Côte d'Ivoire
9:30 am		Coffee Break	
10:00 am	2	**Experiences and Approaches**	
		• African Development Bank	Mr. B. Hadjadj
		• Collaborative Council	Mr. A. Rotival
		• Kuwait Fund for Arab Economic Development	Mr. T.A. Dabbagh
		• Lesotho	Mr. L. Pelepele
		• Union of African Water Suppliers	Mr. M.F. Djerrari
		• Madagascar	Mr. F. Rabemananbola
		• UNDP/World Bank	Mr. David Grey
		• Ghana	Mr. K.E. Dovlo
		• Morocco	Mr. A. Lahlou
		• Zaire	Mr. Tshiongo
12:30 pm		Lunch	
2:00 pm	3a	**Introduction to Strategies for the 1990s**	Mr. A. Mengesha, Deputy Director, WISI, ADB
2:30 pm	3b	Sectorwide Group Discussions: Strategy for the 1990s	
3:30 pm		Coffee Break	
4:00 pm		Sectorwide Group Discussions: Strategy for the 1990s	
8:00 pm		Dinner/Reception (ADB)	

[1]Mr. A. Mengesha, ADB, served as Chairman for the plenary sessions of the Conference.

Friday, May 10, 1990

Time	Session	Topic		Speaker(s)
			Group	**Rapporteurs**
9:00 am	3c	**Presentations of Findings by the Working Groups**	1	Mr. Lahlou, Morocco
			2	Mr. Abouki, Congo
				Mr. Mangnoungou, Congo
			3	Mrs. Kabamba Bilonda, Zaire
			4	Mr. Balisi Khupe, Botswana
			5	Mr. Peter Sackey, Ghana
10:30 am		Coffee Break		
11:00 am	3c	Discussions		
12:30 pm		Lunch		
2:30 pm	4	**Chairman's Assessment of Strategies for the 1990s**		Mr. A. Mengesha, Deputy Director, WISI, ADB
		Presentation and Adoption of Conference Statements		
4:00 pm		Coffee Break		
4:30 pm		**Closing Ceremony**		Mr. T. Gedamu, Vice President, ADB

FROM THOUGHT TO ACTION

Mr. G. Avika

Vice President, Region I
African Development Bank

Mr. President, Delegates, Ladies and Gentlemen:

In the name of the President of the African Development Bank (ADB) Group, I have the pleasure of welcoming you for the second part of this regional consultation. The representatives of regional member states, of non-governmental organizations, and of bi- and multi-lateral support agencies in the water supply and sanitation (WSS) sector have worked together over the last three days and have issued some recommendations on the development of the sector in rural areas.

During the two days of the Conference that begins today, we propose to enlarge the dialogue somewhat. First of all, we wish to expand the realm of our considerations to include the sector as a whole, because as you know, many of the problems found in rural and urban areas are shared or linked. Thus, beyond the rural world, we must look at the sector in its entirety and include in it peri-urban and urban areas, whether these be large cities or smaller urban centers. Indeed, although the cities have benefited in the past from a disproportionate attention vis-a-vis the rural areas, we must acknowledge that with the Continent's population growth and urban explosion, WSS problems in urban areas will continue to dominate. Secondly, we want to express our hope that by the close of the debate which begins today, and by drawing on the main lessons of the Decade just ended, we will be able to agree on the major aspects of a strategy for attaining sector objectives.

Let us acknowledge without indulgences that despite the considerable efforts made by all the partners involved in the development of the sector, the goals of the Decade were not attained. Even if occasionally results were spectacular, we must admit that supply services cannot generally be qualified as lasting or equitable. Demography, the rural exodus and the economic crisis--sometimes amplified by drought--clearly contributed to reducing the desired increases in the rate of coverage--and these are factors that we absolutely could not control. On the other hand, we could have exercised more influence on controllable factors: numerous countries did not develop plans for the Decade or developed inadequate ones; some did not implement their plans or implemented them too late; and too few understood the importance of putting in place mechanisms for coordinating the efforts of the Decade.

The 1990s have begun in a recessionary climate and measures of economic readjustment are the order of the day in many countries. It is easy to foresee that the means at the disposal of the governments--and donor agencies--to provide water and sanitation at subsidized rates will be considerably diminished. However, this should not be a reason for pessimism. As your debate these last few days has shown, the experience accumulated during the Decade has provided rich lessons. Thus we note:

- appropriate technologies are emerging
- various institutional models have been successfully implemented in certain countries
- the notion of cost recovery is slowly replacing that of free service
- partners, whether within each country or at the level of international cooperation, have acknowledged the mutual advantages of an improved coordination of their efforts

In this vein, I would like to note that it is in the interest of the institutions and sector professionals to assemble themselves in national associations and associations at the level of the Continent in order to exchange experiences and communicate suggestions to the authorities. We are pleased to have among us the Union of African Water Suppliers, and I would like to make an appeal for its reinforcement and its expansion to the entire Continent.

It is on this acute awareness of all the aspects of the problem that we must focus in order to devise a strategy to guide our actions during the next decade. The objectives of our efforts remain the same: to supply appropriate and durable services to the greatest number of people at the lowest possible cost. Each country's goals and implementation schedule must be realistically established, and, more than previously,

the criteria of durability must receive the greatest attention.

As is the case with other donor agencies, ADB intends to continue in its efforts in contributing to the development of WSS services, which are recognized as being basic human needs. The needs of the sector will continue to grow and the allocation of resources to any given projects or programs must therefore be subjected to precise criteria, defined in light of the lessons learned from past experiences. To this end, ADB has developed a *Sector Policy Document* on WSS which will be presented to you. This Document reflects the aspects that ADB considers paramount in the implementation of action plans which should enable the sector objectives to be fulfilled in a lasting way.

We need a strategy in order to implement this sectoral policy, and ADB submits its *Strategy Document* for your consideration. We believe that the Strategy we are proposing follows the lines of your discussions of the last three days.

Without wanting to preempt the discussion which will begin this afternoon, allow me to emphasize one point. Among the actors involved--external support agencies and national institutions--it is clearly the responsibility of each country to both map out the framework of and determine the national priorities for the development of the sector. Thus each country must designate a leader among its sector institutions and must give it the authority necessary for initiating the coordination of sector development--within the Administration as well as with donor agencies.

In the course of discussions you will see that the ideas which form the basis for our initiative are not in themselves new, for they are increasingly accepted and are derived from experience. What is proposed is a process for implementing a concerted action by the government for mobilizing all of the available resources and all of the passive energies in order to attain the sector objectives.

It is with these words that I wish you much success in the Conference.

OPENING REMARKS

Professor Adebayo Adedeji

United Nations Under-Secretary General
and
Executive Secretary of Economic Commission for Africa
(delivered on his behalf by Mr. F. Hoque)

Honorable Minister, Your Excellencies, Ladies and Gentlemen:

It gives me much pleasure to send you compliments on the occasion of this important conference on African water supply and sanitation (WSS).

WSS services provide two of the most basic needs of any society. Next only to the air we breathe, water is perhaps the most important natural element for human survival on this planet. Yet this indispensable natural element can sometimes be mankind's worst enemy. Too little or too much of it can cause disasters for many communities in many places. Contaminated water and water-borne diseases are known to have caused epidemics killing hundreds and thousands of people in many countries throughout history.

In Africa, the water situation has always been crucial. By and large, almost all African countries have problems providing safe and adequate drinking water to 100 percent of their population. The problem is more acute in the rural areas, where the population is scattered over relatively large areas. In the case of suitable sanitation facilities, the situation is even more dismal, especially in the rural areas.

It is true that during the International Drinking Water Supply and Sanitation Decade (IDWSSD), the African countries made some progress in this sector, especially in the urban water supply sector. Between 1981 and 1988, 40 million additional people in the urban areas of the member states have been provided with safe drinking water. During the same period, 52 million additional urban dwellers were provided with good sanitation facilities. In the rural areas, 87 million additional people have been provided with safe and adequate drinking water. However, the number of additional people in the rural areas provided with suitable sanitation facilities is much lower.

Nevertheless, the overall situation is far from satisfactory when we look at the current statistics--at the end of the Decade--compared to what they were at its beginning. This is especially true for the rural sector. For example, the percentage of rural population provided with safe and adequate drinking water in Africa has increased from 22 percent in 1981 to only 26 percent in 1988, and it is expected to reach up to only 27 percent by the end of 1990. In the case of suitable sanitation facilities for the rural population in Africa, the situation has actually gotten worse. The percentage of rural population in African developing countries with suitable sanitation facilities has decreased from 20 percent in 1981 to 17 percent at the end of 1988, and it is likely to decrease further--to 16 percent--by the end of 1990.

These statistics reveal that much remains to be done in these sectors, especially in the rural areas. They also testify to the importance and timeliness of your conference which, I believe, will put particular emphasis on the rural situation in setting sectoral policies and strategies for the 1990s.

Your Excellencies, Ladies and Gentlemen:

The United Nations Economic Commission for Africa (ECA) has been involved in assisting member states in implementing their national activities within the framework of IDWSSD.

- As early as August 1980, preparatory to the beginning of the Decade activities, the Commission organized a regional meeting of the member states in order to identify problems and to assess the sectoral needs. The member states participating at this meeting also provided information on their national targets for the Decade in terms of WSS coverage, manpower and training needs, investment and institutional requirements.

- Then, in 1981 and 1982, the Commission fielded official missions to the Sudan, Tanzania and the Niger and prepared case studies on the approaches to the problems of rural water supply in these countries.

- In 1984, the Commission undertook a study to determine the rate of implementation of activities in various member states which would be required for them to achieve the targets they had set for themselves previously. This study also pinpointed the various problems that the countries were facing during the early part of the Decade in implementing their national sectoral activities.

- In 1986, ECA in collaboration with the United Nations Educational, Scientific and Cultural Organization (UNESCO), organized yet another regional meeting on socioeconomic and policy aspects of water resources management in Africa, in which the training and research for water supply development in Africa was highlighted.

- In 1987, the Commission prepared a review on the progress in the implementation of the *Mar del Plata Action Plan*, which emphasized issues like acceleration of WSS programs and coordination of external support in the sector.

- In 1989, towards the end of the Decade, the Commission again prepared a detailed study on the economic aspects of WSS in Africa, with particular reference to rural areas. In the same year, the Commission also prepared a comprehensive report on the general water situation in Africa, in which the Decade activities and other relevant aspects were critically analyzed.

Your Excellencies, Ladies and Gentlemen:

These are but some of the activities of ECA within the framework of IDWSSD, and I have taken the liberty of noting them here only to indicate the Commission's involvement in assisting member states in the implementation of Decade activities.

I would like to inform this conference, particularly the representatives of the member states present here, that the Commission remains committed and stands ready to assist member country governments in providing all of their population with good quality water and suitable sanitation services, so basic and essential for decent human survival.

Ladies and Gentlemen:

This conference, where experts from regional and non-regional countries, as well as those from international organizations have gathered together, has a very noble objective: to chart policies and strategies for providing African populations--especially those in rural areas--with basic services that people in most developed countries take for granted.

It is my sincere hope that the conference can provide some practical and realistic recommendations, which when implemented will make significant improvement in this sector in the coming decade and beyond. I wish you all success in your conference deliberations. Thank you.

WELCOMING STATEMENT

His Excellency Bamba Vamoussa

Minister of Public Works, Transportation,
Construction and Urbanism
Côte d'Ivoire

Your Excellencies Mr. Ambassadors, Mr. Vice President of the African Development Bank, Mr. Representative of the Economic Commission for Africa, Honorable Representatives of International Institutions, Delegates, Ladies and Gentlemen:

We have followed with great interest the unfolding of the first phase of your high-level meeting, during which you have carried out a thorough, detailed diagnosis of the results of the water Decade decreed by the United Nations for the period 1980 to 1990.

The strengths and weaknesses you have revealed clearly constitute a valuable base--a starting point for future actions--because they will help better identify the orientations best adapted to the needs of populations in rural Africa. However, as the Vice President mentioned, we must now enlarge the discussion to include the urban areas as well.

By and large, the countries of our Continent have laid out numerous projects both in urban and rural water supply, intended to improve the well-being of those populations whose arms remain the greatest resource for our countries where agriculture continues to be the driving force in the process of social and economic development.

In this conjunction, Côte d'Ivoire has modestly tried to implement mechanisms aimed at achieving the objectives defined by the United Nations Conference held in Mar del Plata.

As early as 1973 to 1975, the Ivoirien Government established the first national program of man-powered water supply. At that time, there were only 38 urban and semi-urban centers served with drinking water in the entire country, which, in addition to the approximately 1,000 wells in rural areas, accounted for an overall coverage of 25 percent of the population.

By 1985, almost 112 cities and 71 large villages had hydraulic installations for the production and distribution of drinking water, as well as more than 9,000 wells and boreholes equipped with man-powered pumps. This corresponds to a coverage of approximately 50 percent of the population.

Finally, in 1990, at the end of the International Drinking Water Supply and Sanitation Decade (IDWSSD), our country has 240 centers for the production of potable water, which supply 400 urban and rural areas. To this figure we must add the 13,420 wells and boreholes which serve 8,200 villages. Approximately 95 million cubic meters of water is produced for 225,000 subscribers. In 1990, the overall coverage has risen to nearly 85 percent. The ambition of Côte d'Ivoire is to further improve upon these results and upon the quality of services in drinking water supply so that by the end of the 1990s, drinking water will be accessible to each Ivoirien.

However, progress was less obvious in sanitation, both in urban and rural areas. It is estimated that only 50 percent of the population is connected to a sewerage system in a city like Abidjan. Only 25 to 30 percent of the urban population in the remainder of the country has access to satisfactory sanitation.

These results, encouraging in total, have been possible thanks to the structure implemented in the middle of the 1970s. Since this time, the approach followed in the water supply and sanitation (WSS) sector was based on the principle of a financial self-equilibrium. According to this principle, the sector must finance itself, with the least possible intervention of the State budget in its investments. Another characteristic of the policy of the Government of Côte d'Ivoire is the deliberate choice of an evening-out of the sale price for each of the

brackets of water consumption. This involves establishing a unique price per cubic meter of water sold throughout the country, regardless of the production costs in the various production and distribution centers.

On the institutional level, two national funds were created: a National Fund for Hydraulics (NFH) and a National Fund for Sanitation (NFS). They were merged in 1988 to become the National Fund for Water (NFW), and are responsible for collecting financial resources from taxes on drinking water distributed and a tax on drainage based on property tax. NFW is also responsible for the debt service on loans for investments in man-powered hydraulics, sanitation and drainage.

Details of our country's new water policy will be presented to you during the program of the Conference. Developed countries and external financial institutions have contributed in a substantive way, sometimes even in a decisive manner, to all the progress recorded for African countries. And, we take this opportunity to express to them our profound gratitude and our encouragement. Regarding IDWSSD, the record shows that the results are varied. Despite the flattering results of our country which I have just stated, it seems to us basic that notable changes will contribute to make WSS sector in Africa more dynamic.

This is why I would now like to share with you some ideas which could help consolidate our experiences and correct the current weaknesses of our various systems.

General Policy

It is important to keep populations in their regions of origin by trying to improve on their living conditions, in which WSS serivces constitute a non-negligible vector on equal terms with housing and health. To this end, the richest regions within each country could support those less rich by a system of nationally averaged tariffs.

Institutions

In order to control the diversity of investment sources and actions by external support agencies, it would be advantageous to favor the creation of management institutions for external credit and for cost recovery by clients.

This arrangement would more efficiently stimulate the general economy of WSS sector. Furthermore, the creation of an inter-ministerial committee responsible for the technical and financial assessment of sector development programs would be an asset for a better adapted modulation of efforts between rural and urban zones.

Mechanisms

Based on the experience of our country in village water supply, we noticed that it is highly desirable to adhere to a project implementation which can be broken down in the following stages:

- the sensitization of populations on the components and objectives of projects
- the designation by village communities of persons in charge of the project, responsible to follow up on its implementation and to understand its mechanisms
- the implementation of the projects
- training for maintenance
- maintenance and operation of the projects by the villagers themselves with their own financing

We believe that in this way project beneficiaries will feel more committed to taking care of the property placed at their disposal. We must teach our populations "how to fish," that is, how to be responsible for themselves.

Technical Solutions

In village water supply, even though pumps are an unavoidable step in the first phase of implementation, very soon thereafter (depending on the size of the population), it is more economical to put in place an intermediary water supply system with fountains supplied from a water tower.

The concept of better-adapted pumping systems with simplified maintenance represents a challenge which our technicians and experts will try to meet.

Regarding sanitation, four techniques deserve to be used according to the needs of the population and the available means of investment:

- For individual sanitation, improved latrines in which the nuisances of traditional latrines are eliminated are appropriate.
- Sanitation by oxidation ponds is suitable for small communities (schools, hospitals, and hotel, housing and industrial complexes, etc.). I believe that this sanitation system could be the system of the future, because the basic investment and operation costs are in many respects lower than those of other systems. This implies a redefinition of the organization of the infrastructure in order to achieve a more harmonious integration in the urban fabric, both now and in the future.
- Sanitation by septic tanks or by cesspools is a third option.
- Sanitation by sewer is the most comprehensive system but requires rather heavy investments.

It goes without saying that given the current means at the disposal of African countries, investments in sanitation will be governed by a concern for an improved standard of living at the least possible cost.

Thus, in rural areas, priority must be given firstly to hygiene, by activities of sensitization such as the collection of household waste, and secondly to the construction of improved latrines under the guidance and supervision of Government technicians.

And so this Conference, which brings together high-level technicians, is asked to respond to this very delicate question: "How can water be efficiently managed in its entire cycle, both in the city and in the country?" The Document submitted by ADB for your consideration is a very valuable contribution to the debate.

In wishing you much success in your work, I declare open the Conference on the strategy in African WSS for the 1990s.

ADB's WATER SECTOR POLICY DOCUMENT

Mr. Bachir Hadjadji
Division Chief, CEPR
African Development Bank

Delegates, Ladies and Gentlemen:

During the last 10 years, the African Development Bank (ADB) made 77 loans for an amount of approximately US$980 million which represents 7 percent of the ADB portfolio. The total cost of the financed projects is US$1.66 billion; thus, on the average, ADB contributed 56 percent of the total cost of these projects.

A detailed examination of loan operations indicates that ADB has favored urban areas to a greater extent than rural areas, for the latter received only 11 percent of the total amount of the loans. In urban areas, investments for water supply have been favored more than those for sanitation, with the latter receiving only 15 percent of the total amount of the loans. While ADB financed both water supply projects and sewerage projects, it rarely mixed them.

ADB intervened equally in capital cities and in secondary cities. This was probably due to the pressure exerted by the urbanization trend and the lack of investments in secondary cities. During the last 20 years of activities in the water supply and sanitation (WSS) sector, ADB has acquired an expertise from discussing sector issues with regional members. It has also acquired experience in collaborating with other multi- and bi-lateral sector institutions.

In 1987 and 1988, ADB developed a document on WSS sector policy which it intends to promote. After two years of internal discussion, this document was been endorsed by the Bank's executive board. The policy document identifies three objectives. First, in order to facilitate the decision-making process within ADB, it requests that a framework to study programs and projects be submitted to ADB for financing. Next, it proposes to offer a platform to establish a dialogue with member states on the desired composition of the projects ADB would like to finance. Finally, it strives to coordinate the activities of ADB with other financial support agencies working in the sector.

Without wishing to discuss this document in detail, I would like to present some of its basic characteristics. As far as ADB is concerned, the WSS sector contributes to economic and social development by improving living standards and public health and by promoting community organization. For ADB, the sector includes water, sanitation, sewerage, solid waste removal as well as rainwater drainage. All of these are linked in as much as whenever running water is introduced, one has to take care of its evacuation.

The document acknowledges the diversity of situations in various zones--rural and peri-urban, tropical and sahelian, and those with ground water or surface water sources. It also acknowledges that there exist diversified technologies. The document favors low-cost technologies which provide a better means to attain the objective of providing service to the maximum of people.

The document encourages the setting of realistic goals regarding the provision of new services. It presents two possible approaches: (i) to invest in order to increase the availability of water; and (ii) to manage demand in such a way as to satisfy the most urgent needs. The poorest segments of the population cannot afford the costs resulting from providing water supply services, and rather than imposing on them a costly solution (which is not appropriate given their lack of financial resources), it would be wise to create the necessary framework to enable the communities themselves to decide what they want. Their decisions will therefore be based on what they can afford according to the level, the quantity and the comfort of technology they desire--whether for water or sanitation--all the while respecting their sociocultural environment.

In peri-urban and urban areas, the role of women is of primary concern; the ADB policy document recommends that education, hygiene and community organization programs be an integral part of WSS projects in urban and peri-urban areas. Because needs are vitally important and resources are limited,

criteria for selection must be defined and priorities must be established. ADB is convinced that without a sector strategy, programs will only consist of a list of unlinked projects which lack the estimates of the necessary human, financial and institutional resources. Without such a strategy, resource mobilization--whether internal or external--is uncertain. ADB believes that member states must formulate their own development sector strategy and establish long-term priorities based on an evaluation of their needs at the national level. ADB recommends that linkages be established between the WSS sector and other sectors such as education and health. Once member states have prepared detailed strategies, ADB is ready to assist them financially to elaborate these development plans.

Another important aspect needs to be considered: the present condition of public enterprises. The sphere of activity within these institutions varies from one country to the next. Sometimes these public enterprises are called upon to provide water to all urban centers in the country and other times they service only one urban center. The situation of many of these enterprises is worrisome, partly because of their financial and managerial autonomy, and partly because of the unwillingness of the centralized government agency to raise the tariffs on which they depend.

A study conducted internally by ADB shows that more than 90 percent of the loans made by ADB included financial contingencies either for tariff increases or for the reimbursement of arrears by the administration. This study also demonstrates that these conditions were only partially or minimally followed. Furthermore, ADB feels that the status of these enterprises, which are dependent on the government's budget, is incompatible with the nature of their activities and is not conducive to attracting competent high-level staff willing to serve the enterprise. ADB believes that the long-term viability of these enterprises is more important than the transfer of resources or the loans they receive. Indeed, external resources represent only marginal contributions compared to the overall efforts countries must make to finance increasing sector investments. ADB asks that countries adopt a rational cost recovery policy, and tariffs which will allow the poorest populations to obtain a minimum amount of service at a low cost while other consumers (from the administration and the private sector) pay the full price for the service.

ADB gives priority to investments for rehabilitation over investments for new projects. It also requires from the recipients of loans for rehabilitation an analysis of the reasons for the degradation of the installation or the downfall of the institution in order to assure that the necessary changes are made.

ADB feels that all possible interventions in the sector by private enterprises have not yet been tested, and that these interventions may be as wide ranging as the variety of problems in the sector. As is witnessed in many countries, the lifting of constraints--which weigh heavily on the private sector--and the judicious use of services are part of an efficient approach aimed at increasing the performance of the sector.

Ten years after the declaration of the International Drinking Water Supply and Sanitation Decade, a large segment of the African population remains without potable water and sanitation facilities. Investments in rural areas are still low. Urban systems are in need of rehabilitation, institutional strengthening and expansion to accommodate high rates of urbanization and population.

ADB is convinced that its policy document for WSS sector intervention offers an appropriate framework for sector development in its member states. One of the positive elements of the Decade has been the growing awareness by the international community of the need for a better coordination among aid institutions and for increased support to define sector policy and sector priorities, which must ultimately remain the prerogative of the countries themselves. In this respect and cognizant of those needs, ADB would like to play a more active role than it has in the past and it would like to do so with the collaboration of other institutions.

Finally, while ESAs and donor agencies have often had the opportunity to meet and consult each other, this has not always been the case among decision makers from member states. Therefore, ADB suggests that this problem be eliminated during the next decade through some mode of regional or sub-regional meetings, the content and the frequency of which remain to be determined. Thank you for your attention.

PRESENTATION OF MR. ALEXANDER ROTIVAL
Chairman
Collaborative Council

Distinguished Delegates, Ladies and Gentlemen:

I submit that it is time we think in terms of establishing a framework for global cooperation beyond the Decade. The framework should have two partners: the developing countries and the external support agencies (ESAs), where the senior partners would be the developing countries. Mr. Brown, Chairman of the Council of Economic Advisers, Chairman and Governor of the Central Bank of Jamaica, previously my boss, the Associate Administrator of the United Nations Development Programme (UNDP), and still Chairman of the Agency Steering Committee for the IDWSSD, at a recent meeting late last year, expanded I think some extremely interesting points on how we collectively--the interested partners--could organize ourselves in the 90s. He submitted that you needed three fora: (i) a forum for ESAs to reflect not only coordination but our mutual cooperation, particularly on the harmonization of the support to the developing countries (the United Nations (UN) system--I think we all realize with some humility--needs to coordinate itself better on an internal basis); (ii) the UN system should continue in some form the inter-agency committee on water and sanitation that was constituted at the beginning of the Decade in 1981; and (iii) most important of all, that the developing countries themselves, the most interested actors in this joint-venture should have a forum on their own--which is submitted among other options--to be a rejuvenated natural resources committee of UN.

I believe the important point is that we need a framework to maximize the meager resources that are available from both the nations' governments and from the ESA community. As you know, the Collaborative Council is in the process of self-evaluation. Two distinguished consultants whom many of you have met, Mr. Frih and Mr. Cosgrove, are reviewing the impact or lack of impact of the ESA collaboration among themselves in terms of the future. And, if they are here today, it is because the most important part of the evaluation is to get your--you members of the developing countries--your perspective on how well or poorly the ESA community has in fact supported your efforts and what is required in the future.

The Collaborative Council has recognized that discussion without the participation of developing countries is an absurdity. At our last meeting in Sophia Antipolis, France, in late November-early December 1989, four out of five of the principal theme papers were prepared by and discussions were lead by senior colleagues from developing countries, several of whom are here. I assure you this is really a chemical reaction in terms of a partnership, a true partnership in terms of trying to define issues for the 90s between senior sector colleagues from the developing countries and from the ESAs. Whatever happens in the future, I feel that it is necessary to strengthen the participation of the sector specialists from developing countries in the deliberations of a council or whatever it may be. When I say strengthen, I mean that there must be a critical mass, a dialogue between the developing countries' specialists in the one hand and the ESAs in the other. I believe that a prestigious organization, a sister organization like UAWS, should participate in the deliberation wherever this body may be.

Interactions between developing countries and ESAs should not be limited to periodic gatherings, no matter how important they may be on a global level, on a regional level or on a sub-regional level. I have a good piece of news in that context. Last week the International Development Research Center of Canada (IDRC) communicated to me their agreement to become global coordinator for a network on applied research. This network--or networks because there will be a series of networks--on important issues for the 90s would be constituted principally by developing countries research institutions with the support of institutions in the industrialized countries. I think that this is a positive development and an indication of the importance that was attached by the ESA community to give you the leadership role. It is felt that there should be global consultation, perhaps every five years--one as you know in 1990,

another in 1995 and also in the year 2000. UNDP is sponsoring a Global Consultation in New Delhi--Safe Water and Sanitation for the Year 2000--and I think it is important--and it was raised in the discussion of this Workshop--that the delegations from developing countries should consist not only of senior sector specialists but also of policymakers from institutions, from ministries which hold the purse strings--Treasury, Finance, etc.--to clearly get the message across to those who are in position to make policy decisions in the allocation of resources vis-a-vis the sector. It is hoped that at the Global Consultation ESAs will also be represented not just by their senior sector specialists but by those who make the decisions in terms of the allocation of resources and support. You have received a document on the Global Consultation. I would like to make just one quick point on the issue of Africa transmitting its message: a clear consensus on the problems, priorities and strategies for the 90s is essential. This is one of the objectives of this Conference. As was suggested by the Executive Secretary for the Global Consultation, I hope that it will be possible to appoint a spokesperson to deliver such message at New Delhi in September 1990.

I agree with the remarks that have been made by my colleague from the African Development Bank (ADB) that in the 90s it is necessary to organize regional consultations for the critical mass, but for them to be sufficiently small so that common experiences can be discussed. One of them which is under discussion and which the Collaborative Council is hoping to organize due to the specificity of the problems relates to the Magreb. Hopefully in 1991 such a consultation will take place.

Finally, as I look at the room and I see ADB, World Bank (WB) and UNDP, ESAs and you the delegates, I submit that it is time to translate the framework in something operational. I would like to see this meeting lead into a commitment for a concerted program of cooperation. I think it is extraordinarily positive that we have ADB and WB, as well as UNDP, working hand-in-hand to support you in terms of the realization of your objectives with respect to the sector. I would attach an enormous importance to a message of this kind in a form that you feel would be appropriate because of the final statement.

I regret the fact that the Third Africa Meeting on Guinea Worm in Yamoussoukro did not receive a hearing today. There were some very important statements made--and it has been circulated. Guinea Worm disease is the one formal indicators of the success of the Decade. I would hope that you would feel that you, the country delegates, particularly those who represent the 17 endemic countries in Africa, would make a plea in the final statement of this meeting and that priority be given to villages which have been affected by Guinea Worm.

It would be impossible for me not to conclude by personally thanking you the delegates and WB, but also particularly those ESAs who have participated actively in the financing of your participation at this meeting. I mention in particular of the Commonwealth Council, DANIDA, NORAD, The Swiss Development Corporation, the Kuwait Fund, FINNIDA, France, GTZ, the Netherlands, SIDA Sweden, USAID, UNICEF, WHO, and UNDP. Thank you Mr. Chairman.

PRESENTATION OF MR. M.F. DJERRARI
President, Union of African Water Suppliers

Mr. Chairman, Your Excellency, Ladies and Gentlemen:

The Union of African Water Suppliers (UAWS), in whose name I have the honor of addressing you, is a non-profit and non-political organization. Its objective is to promote various means of exchange among companies and services in the fields of water distribution and production as well as sanitation services in Africa.

UAWS is comprised of 22 African companies or groups of companies as well as some 20 associate members with diverse activities in the water and sanitation sector. Our association was created in 1980. Its headquarters and its administrative secretariat are in Abidjan at SODECI, and its scientific and technical council is arbitrated by the *Société Nationale d'Exploitation des Eaux du Senegal* in Dakar. UAWS has held 5 international conferences which have provided a regular forum for some 300 to 500 participants from 40 countries. During the conferences, the participants study technical and economic issues pertinent to the sector. These international conferences also provide an opportunity to present material and technologies used in Africa.

UAWS was created at the start of the International Drinking Water Supply and Sanitation Decade (IDWSSD) in 1980; it is thus natural to evaluate its role during this past Decade. First of all, we need to emphasize that in our view--and in the view of previous orator in the Conference--the objectives of IDWSSD were undoubtedly too ambitious. Given the economic crisis on the Continent during the Decade, they have not been fulfilled. At the end of IDWSSD, UAWS proposes to join in this new water supply and sanitation (WSS) decade in order to begin the 21st century under better conditions.

Our association could be an African center for expertise and exchange of experiences among its members as well as between its members and international organizations in the WSS sector. As such, it could facilitate the exchange of information, of experience and of expertise as well as the exchange of experts between African companies.

Finally, UAWS is ready to offer its support for reflecting on issues of general interest and for any study or research program in the drinking water supply and sanitation fields. UAWS has not been invited to meetings held in the context of IDWSSD, however some of its members have contributed regularly to international gatherings in the sector. This is why some of us have participated in the discussions of the external support agencies' (ESAs) Collaborative Council, particularly in the one held in Sophia Antipolis in December 1989.

In view of the present meeting in Abidjan and the forthcoming meeting in New Delhi next September, the 5th Congress of the UAWS, held last February in Abidjan, decided to hold a meeting of all executive directors of companies for water distribution and sanitation in order to assess our role during the IDWSSD and our perspectives for the future. This meeting was held in Lomé on March 20-22, 1990, thanks to the financial assistance of the Government of France and the collaboration of some international institutions such as the World Bank, the Caisse Centrale de Cooperation Economique, and UAWS associate members such as CIEH, Cefigre, etc.

I will now share with you the main recommendations which came out of the Lomé meeting. These recommendations, which are part of report written during the meeting, concern the following three areas: (i) the management of public services--up to now we have talked very much about projects and perhaps less about management; (ii) investments and the financing of investments; and (iii) objectives and strategies.

In the area of management of public services, UAWS members who met in Lomé identified the following factors for improving the management of the sector:

- An adequate institutional framework, clearly defining the autonomy of the management of the sector, the respective roles of the water entities and the government agencies on which they depend, all the while assuming the necessary coordination at the national level.

- A tariff structure allowing the most suitable cost recovery and ensuring the financial autonomy of the WSS sector while observing a certain

rigorousness in the technical, financial and commercial management of water entities. UAWS promotes the systematic involvement of African water entities and consulting firms in the formulation and definition of development projects. This allows these projects not only to be better suited in terms of size and choice of technologies, but to mobilize human resources committed to meet the management objectives of the projects.

- A promotion of industries to enhance African raw materials in order to ensure the priority of a local supply system for the sector.

Concerning financing and investments, the search for technical solutions adapted to the specificities of the African environment is of paramount importance. It must be encouraged through careful thinking, studies and experiments with the collaboration of external support agencies (ESAs) and the results must be disseminated through local professional associations and North-South cooperation channels.

A more rational urban space allocation may play an important role in limiting costs, thus a coordination for urban planning and infrastructure development is necessary. A first priority on expenditure for maintenance and rehabilitation of equipment should allow a savings on new investments to be realized. A stringent approach to satisfy real credit-worthy demand with the ability to pay by the users is a must to improve performance.

Finally, an increase in sector financing must come from several sources including the following primary categories: (i) new subscribers through their contributions as individuals, as first establishments, etc.; (ii) managers of water companies through self-financing from tariffs; (iii) public or private national financing; (iv) international financing through giving a greater priority to the WSS sector for the amount lent and for the conditions; and finally, (v) while the UAWS members are aware that governments' financial resources will be limited for the next decade, they ask however that governments grant the sector preferential fiscal treatment and appropriate import duties in view of the social character of the activity.

Given the experiences of IDWSSD, UAWS members acknowledge that the approach of the WSS sector, in terms of objective and strategy, must deal within a wider context, integrating environmental, population, health and standard of living issues. Nevertheless, the objectives for the next decade must be focussed on providing WSS services to the greatest number of people while taking into consideration the health and productivity of the population and the quality of the environment.

To formulate these objectives, national government authorities will have to make the necessary institutional arrangements: cost recovery and the dissemination of technologies better suited to local conditions whether these be natural, human or financial. Similarly, an improvement in the technical management of the services, in the planning and supervision of projects and in the level of community participation--and particularly of women for water supply projects--are indispensable. A regional cooperation must be sought among countries in similar situations. Additionally, an international cooperation must be promoted to improve both the exchange of information (on experiences and appropriate technologies) and the coordination and sensibilization of all African countries.

Finally, I wish to emphasize that during the next decade we will face new and greater challenges, among which are a demographic explosion in African cities, the rapidly growing squatter areas and informal housing settlements in peri-urban areas, the increasing technical and economic difficulties which are pollution related or which result from an insufficient mastering of rain and waste water, and an increasing lack of water resources. All of these challenges will have to be met with limited financial resources. At our Lomé meeting, we deemed it necessary to make some comments, to give an opinion and to make some recommendations which could enrich present thinking.

We also believe that UAWS has an obligation to contribute to the development of the WSS sector in Africa. UAWS hopes to obtain the understanding and acceptance of non-African partners, whose innovative ideas on the sector would benefit from an analysis by our organization in the area of training. UAWS will reach its objective if the Abidjan regional consultation accepts the knowledge and advice given in our document and puts it in practice in the interest of the African countries.

I would like to send the same call that I sent in February 1990, inviting all WSS companies in Africa to join forces with UAWS, so we may work together for the establishment of this sector in Africa. Thank you for your attention.

THE UNDP-WORLD BANK WATER SUPPLY AND SANITATION PROGRAM: AN UPDATE

Mr. David Grey
Acting Program Manager,
UNDP/WB Water and Sanitation Program

Distinguished Delegates, Ladies and Gentlemen:

It is a privilege for me to have the opportunity to speak to you today. I have just a few minutes and I am going to talk about the United Nations Development Programme (UNDP)/World Bank (WB) Water and Sanitation Program; its objectives and organization; the issues that we see facing Africa today; and the role we believe we can play in assisting the governments of the continent to meet the needs for water supply and sanitation in the 1990s.

The joint UNDP/WB Water and Sanitation Program is a worldwide effort of developing countries and external support agencies (ESAs) to tackle the problems of water and sanitation for poor people. The Program is active in 40 countries, 21 of which are in Sub-Saharan Africa. The overall objective of the Program is to assist countries to build the capacity to deliver sustainable water supply and sanitation (WSS) services to low-income people, primarily using low-cost and community-based approaches. There are no blueprints for sustainability and there are no easy answers. Dealing with poverty in all corners of the world has proven to be extremely difficult. However, in over ten years of work in different parts of the world, the Program has developed a strategy with a toolbox of activities to assist governments in their efforts.

In describing this strategy, let me take the example of Ghana, a country well represented by distinguished delegates at this meeting. We have a strong team in Ghana--of Ghanaian national staff. We have two national project managers, and they and their teams are undertaking a wide range of work in collaboration with the Government. The Program is assisting in sector policy and planning work, both in the rural WSS sector and in the urban sanitation sector. We are working with the Government in demonstrating community management of rural WSS and determining solutions for dealing with urban sanitation for the poor. We are also working with the University of Science and Technology in Kumasi in establishing a training network center, which will train national professionals in low-cost WSS. The Program is working with the private sector, particularly in the production of pumps and sanitary hardware. We are undertaking research of various kinds--in particular some innovative work on willingness to pay for sanitation. All this work is done in collaboration with a wide range of ESAs. The long-term goal of all these activities is to lead to large-scale investment in water and sanitation for Ghana's urban and rural poor.

The Program has global-, regional- and country-level structures. There is a small group in Washington which manages the Program and here in Africa there are two regional teams. These teams are called Regional Water and Sanitation Groups (RWSGs or GREAs in French). Many of you will know staff from the teams. In Africa, there is a West African Regional Group located in Abidjan, and an East African Regional Group in Nairobi. Staff come from WB, from bilateral organizations, from other UN Agencies such as UNICEF, WHO, and the PROWWESS project. The two RWSG managers, Mr. Alain Locussol from the Abidjan Office and Mr. John Blaxall from the Nairobi Office, are attending this meeting.

In addition, the Program has supported the establishment of three international training network (ITN) centers in Africa. There is one ITN center in Ouagadougou. Mr. S. Toure, the director of the center, is also here at the meeting. The center is called CREPA and is a part of CIEH. The second ITN center is at the African Medical Research Foundation in Nairobi, Kenya, and the third ITN center is at the University of Zimbabwe, in Harare. All three ITN centers have regional and sub-regional responsibilities for training in low-cost WSS. This network of regional teams of RWSGs and ITN centers is in place and is actually working with many of you. The network is multi-disciplinary, multi-national and multi-agency financed. It is an instrument for country-level collaboration and action.

Let us take a quick look at the issues that have arisen. Over recent years, the Program has focussed its efforts in Africa on supporting governments dealing with the problems of rural WSS--the subject of the workshop earlier this week. It will continue its efforts in the 90s, putting a strong focus on rural poverty and on community-level capacity building. There are, however, dramatic emerging problems which Africa will face in the future, and is already facing today. For example, over the next 15 years, the urban population of Sub-Saharan Africa will double and in another 15 years it will double again. There will be 500 million people living in cities--four times the present figure. Over the same period, the rural population will increase by 50 percent. This has dramatic implications. In the major cities of Asia and America, the problems of the urban environment are overwhelming, and we will do well to learn from their experience and prepare to face the time-bomb of urbanization in Africa.

We see two main challenges that we in the WSS sector must face. First, the problem of urban environmental sanitation. Rapid urban growth is creating a time-bomb: the rapid accumulation of waste and polluted water form major health hazards. What can be done with these mountains of waste? Much of this urban waste will be in informal settlements, not in the formal settlements in the center of the city, but on the margins of the city. So it is the poor who suffer most from the disposal of human waste directly, as well as from the lack of disposal of solid waste, which piles up in the streets of slum areas. We must identify ways to deal with this garbage mountain, such as emphasizing recycling, both recycling of solid waste and waste water reuse for irrigation on the margins of cities. We must also understand better the demand for sanitation, and develop ways in which we can--in an adaptive way--match sanitation technologies (including on-site facilities and intermediate and conventional sewerage) to affordability.

A second emerging problem on the African Continent--which is expanding fast in many countries which do not yet see it--is the problem of water resources. Over the next 25 years, many countries will see absolute scarcity, and the experience of the Middle East has shown that water resource scarcity is both a major constraint on growth and a source of conflict. Essentially there are two basic problems. Scarcity is increasing the costs of expanding supply, and inadequate or inappropriate water resources management policies are also leading to increases in cost.

Finally, we have a couple of initiatives that we are trying to get underway in the next few months. For many years the Program has worked closely with countries in Africa, and many of our staff come from the Region. We want to strengthen this partnership further and broaden the ownership of the Program. We propose to establish an advisory council of leading policymakers from the Region for each of the RWSGs, to advise on directions and strategies and to review plans in progress. We believe that in strengthening this ownership, the Program can become more relevant and more effective.

The second initiative is to strengthen human resources development activities. There are activities already in hand--such as the three ITN centers I have described. One of the initiatives that we are proposing to launch is a greatly enhanced effort in technical cooperation between developing countries (TCDC), interchanging mid-level and lower-level staff between countries and projects. For example, if a country in East Africa wants to launch a solar pumping program, what better way than to learn from Mali, a country where considerable experience has been gained over the last ten years, and what better way than to learn from Malian technicians? Similarly, if a country in West Africa wants to launch or extend a sanitation program, what better way than to learn from our colleagues from Zimbabwe, whose Program was so eloquently described on Monday by the delegate from the Zimbabwean Government? There is a wealth of experience within Africa and the Program is planning to launch a substantive effort to assist in the exchange of that experience. Your views on this issue would be greatly appreciated, either to myself or to my two colleagues in Abidjan and Nairobi.

The challenges of the 90s are with us and we in the Program look forward to working with you in grappling with these challenges in the coming years. Thank you very much.

Presentations were then made by pre-selected countries and ESAs as follows:

Ghana	- Mr. E.K.Y. Dovlo
Lesotho	- Mr. L. Pelepele
Madagascar	- Mr. F. Rabemananbola
Morocco	- Mr. A. Lahlou
Zaire	- Mr. Tshiongo, Mr. T. Watumba
Kuwait Fund	- Mr. T.A. Dabbagh

Their full statements are set out in Volume II of this Proceedings.

INTRODUCTION TO GUIDELINES FOR TRE DEVELOPMENT OF COUNTRY STRATEGIES FOR THE 1990s

Mr. A. Mengesha
Deputy Director, WISI
African Development Bank

Ladies and Gentlemen:

You have worked hard for three days in the Rural Water Supply Workshop, and have developed a comprehensive array of conclusions and recommendations for bringing sustainable water supply and sanitation (WSS) services to the rural populations of Africa. One of the major accomplishments of the International Drinking Water Supply and Sanitation Decade (IDWSSD) has been the way that governments and external support agencies (ESAs) have worked together and developed a consensus to the approaches needed to achieve sustainable services. In the Workshop, you have demonstrated a determination and an ability to turn these agreements into policies and activities which will help all African countries combat the formidable constraints they continue to face.

Now, at this time, we ask you to broaden the horizon of your discussions. For the next two days, we seek your help in providing Africa with a Strategy for the 1990s in WSS for all areas--urban and semi-urban as well as rural. We have already noted in the Workshop that urbanization and the problems of peri-urban areas present governments with formidable challenges, on top of the rural challenges you have already been addressing.

The document which will form the basis of your discussions from now on seeks to provide the countries of Africa with the means to devise their own sector development strategies, within a framework that reflects all the lessons we have learned in the last Decade. It has been immensely encouraging to us during the last three days to hear the working groups reaching such remarkably close agreement on the approaches needed to bring renewed and accelerated efforts in the 1990s, and to hear the principles which we have tried to build into the Strategy Document be endorsed by representatives of all countries and the ESAs present.

I should explain that we in the African Development Bank (ADB) put a lot of effort in the final years of the Decade into ensuring that our own policy for sector investment reflected, as closely as possible, the approaches which have proven to be successful. We have been continually learning, and believe it is necessary that any policy--and strategies for implementing it--be flexible enough to respond to changing circumstances. We believe our policy is fully consistent with the present thinking. This should mean that ADB is well equipped both to structure its investments in the sector in a way which will help countries undertake the many support activities we believe to be necessary, as well as to provide support for the installation of new WSS facilities.

The Strategy Document has been prepared for you to discuss and to advise us on how it can be strengthened and modified to represent a consistent approach for all of Africa. There are two parallel purposes:

- When we finish our discussions, we shall have the basis of a document which any African country can adapt to its own special circumstances, confident that the sector approaches, the institutional changes and the basic sector objectives are the most appropriate and will be supported by the donor community.

- At the same time--and this is very important--we have a splendid opportunity through this consultation to demonstrate to the world that African countries have a determination and an ability to attack the enormous problems that they face in a spirit of collaboration and total commitment. The outcome of this consultation will be an important part of Africa's voice in the Global Conference in New Delhi. Let us make sure that the message is both loud and convincing.

As you will see from your schedule, the rest of this afternoon is devoted to discussions in working groups. You have gotten to know each other well in the recent days, and we would propose that the composition of the working groups remains the same, with the same excellent chairmen. A facilitator will be assigned to each group to provide further background information if you need it, or to help structure the discussions to complete the analysis of the document in the time available. We will then have time tomorrow, in the plenary session, to compare notes and to reach a consensus on *Strategies for the 1990s*.

The discussion document is not a lengthy one, and I do not intend to go through it now. Most of you have read it already, and I believe you will be able to go into discussions without any detailed introduction of the document.

What I would say is that we are very encouraged that the approaches incorporated in the Strategy appear to us to be consistent with the major new approaches that you emphasized in the Workshop. It is clear that the lessons we have learned about community responsibility, about sustainability and about the viability of institutions are a fundamental part of our common strategy.

We at ADB fully support the Workshop's major conclusion: the emphasis should change from that of governments as providers of all services, to that of increasing involvement of community organizations, the private sector and non-governmental organizations (NGOs) in the implementation and management of WSS sector. Let us be clear: this puts a heavy and crucial responsibility on governments to build up the capacity of these organizations at all levels, and to equip them to accomplish their tasks. And governments must intensify their promotion efforts to motivate and sensitize communities and provide prompt and effective support for community initiatives. I hope that you will help us to ensure that we find the mechanisms at the national and community level to apply these concepts in these situations. Combining our desires for restructuring, integrated approaches, women's involvement, effective demand analysis, appropriate technologies and service levels, sustainability and resource organization--combining all these things into effective national strategies--is no small challenge.

When you discuss the Strategy, you will see that the fundamental part of the process of strategy development is for each country to develop an Issues Paper which addresses the major topics. We hope that the list is comprehensive. We are confident that you will be able to help us refine it.

In the proposed Strategy formulation, we address the key issues of *effective demand*, of *rehabilitation*, of *credit and repayment mechanisms* and many more, and we emphasize the need for continual exchange of experience at national and regional levels, so that sector decisionmakers can learn from the experience of elsewhere in order to improve their own sector performance.

You have already demonstrated that with your own wealth of experience, you can produce solid and convincing recommendations for achieving progress in WSS in rural areas. Now, please help us to give Africa the voice it needs in the world forum, and to promote the powerful case for increased resource allocations to the sector in our Region.

My message goes equally to country participants and to those from ESAs. We need all of your input in helping us to come up with a convincing document. Please see to it. Thank you Ladies and Gentlemen.

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At this point, discussions were continued in the 5 Working Groups. Each group submitted its detailed comments as shown in the 5 Working Group Reports at Annex 6 through 10. The comments were discussed in plenary and then incorporated as far as possible by the 5 Working Group Chairmen who reconvened in Abidjan in August 1990. The finalised "guidelines" appear on the next and following pages.

CHAIRMAN'S ASSESSMENT OF STRATEGIES FOR THE 1990s

Mr. A. Mengesha
Deputy Director, WISI
African Development Bank

Ladies and Gentlemen:

I will be very brief in my reflections on the discussions we have had on the *Strategy Document*. Let me first of all state that I am heartened by the outcome of our deliberations of the past two days. I am heartened because I have the distinct impression that we are speaking the same language. We have all recognized the need to develop a sound strategy for the development of the water supply and sanitation (WSS) sector if access to these services is not only to keep abreast with population increase, but to accelerate to the point where we can provide water and sanitation for all.

The lessons we have learned in the past two days also show that while a country's strategy paper needs to take into account its specific situation, there is no disagreement in our thinking of what elements should constitute our overall strategies for the 1990s. I believe that what appear to be divergences in our discussions in the working groups and in the plenary sessions are simply an indication of concern by various delegates which reflect the specificities of their country's experiences.

The question of privatization, for instance, has been repeatedly raised. We have all recognized that governments should, in the years ahead, act more as promoters than providers of WSS services. Yet, we have not all agreed on outright privatization, because in our different countries such a step may not be practical at the present time. There seems to be a consensus, however, for an intermediate stage of creating parastatal institutions and partially private- or mixed-capital institutions.

On the question of financial resource mobilization, I think we have all agreed that with the foreseeable economic climate, the major portion of our investment for the sector's needs has to be generated internally. Thus, we all agree that WSS services must be paid for. Some of us are concerned about the capability of certain strata of our population to pay for such services; others confidently believe that through a mechanism of subsidies to the poor by the rich revenues for all services can and should be collected.

Similarly, in the concern we all share that WSS services should reach all populations, some have suggested that associating solid waste disposal and storm water drainage with this sector would divert both our attention and our resources. Yet, I think we have all agreed that the sector is best served if it is seen within the context of the parallel development of associated sectors such as hygiene education and human resource development.

In my opinion, another consensus that has been reached is the importance of the role played by the external support agencies (ESAs), bilateral donors and non-governmental organizations (NGOs). At the same time, some are concerned that these organizations should play an active role without unduly influencing government policy.

In brief, the reflection of the chair is that there is a general consensus among the participants present on the broad outline for the guidelines for the preparation of strategies presented to us. The chair also, however, acknowledges the various remarks made by the five working groups, and to the extent possible and applicable, these remarks will be incorporated in the revised *Strategy Document* to be prepared by the African Development Bank.

In conclusion, I would like to stress that the *Strategy Document* is a framework for collaboration for development between governments and communities, ESAs, NGOs, bilateral donors and all those who desire accelerated development of the sector. The last thing the *Strategy Document* should be is a document of confrontation between the government and its people, between the haves and have-nots, between donors and recipients, and between lenders and borrowers. Thank you Ladies and Gentlemen.

CLOSING REMARKS

Mr. Babacar N'Diaye
President
African Development Bank

(delivered on his behalf by Mr. Gedamu)

Your Excellencies, Distinguished Guests, Ladies and Gentlemen:

We have come to the end of a very busy week. It is obviously premature to assess the results of your deliberations, but I am sure they will constitute a milestone and a point of reference for Africa's water investment in the decade ahead.

I should first of all like to congratulate you on the way in which you have organized your discussions, which has made it possible for member countries to air their views. I should also like to congratulate the organizers of the meeting for the very high quality of the documentation.

During the first three days, you discussed the strategy to be marked out in the water supply and sanitation (WSS) sector in rural areas, on the basis of the findings from and experience gained by African countries, the specialized agencies of the United Nations, and regional development finance institutions. Yesterday and today, you had the opportunity to take stock of the achievements, shortcomings, and lessons of the Water Supply and Sanitation Decade which has just passed. These discussions were intended to identify ways and means of carrying forward the effort to provide good drinking water and improved sewerage facilities to African populations.

The critical question you have been required to address--namely, how to serve the greatest number of mostly low-income populations in countries with limited resources--is not simple, for the problems are both sensitive and complex. They are sensitive because they directly affect the lives and health of human beings, and complex because they must be seen in the context of the entire spectrum of economic and social activities. Because the resources are limited, hard choices and decisions are involved.

You have discussed these issues from the vantage point of your respective experiences, and they are reflected in your findings and conclusions. I note in particular that there is a general consensus that the *Strategy Document* presented by the African Development Bank (ADB) and the Collaborative Council provides a good basis for the African position at the Global Conference which is to take place in New Delhi in September 1990.

Equally important are the recommendations that each country should develop its own strategies and policies for the WSS sector, and that there is need to establish a mechanism to ensure collaborative efforts and a regular exchange of experiences. In this regard, I would like to say that ADB is prepared to explore with you the feasibility of creating a Regional Committee to guide and monitor development activities in the sector.

These recommendations constitute, for all the partners involved in the development of the WSS sector, a valuable asset to which we must periodically refer.

In conclusion, I should once again like to congratulate the organizers of this Conference, on the choice of topics, and to thank them for their very active participation. I would also like to thank delegates of the support agencies for contributing finance to the realization of this Conference, and for having come here to listen to the views expressed by country representatives. And, I would like as well to sincerely thank all of you representing countries and institutions for accepting you invitation to attend this meeting, which, as I said before, has given us a very good basis for the work in the decade ahead. Finally, I would like to thank you all for your kind attention, and to wish you *bon voyage* to your respective homes.

PART III

SODECI

WATER DISTRIBUTION COMPANY OF COTE D'IVOIRE

The following paper was presented in plenary by Mr. Zadi Kessy, President of SODECI and his management team.

SODECI
Société de Distribution d'Eau de Côte d'Ivoire

I. ACTIVITIES, STRUCTURE AND FUNCTIONS

Background

Since 1960, the Government of Côte d'Ivoire has entrusted the management of urban public water supply and distribution to a specialized company: SODECI (Water Distribution Company of Côte d'Ivoire). **SODECI is a private company.**

Although the initial institutional relationship between the Government and SODECI was defined through a **leasing agreement**, in 1987 this agreement was modified to a **concessionary contract**. The rights and obligations of both parties are clearly defined under this contract. The Government agency that entered into contract with SODECI is the Ministry of Public Works.

Legal Status

SODECI is a private limited company with a capital of 2 billion francs CFA. It was created in 1960 by the Société d'Amenagement Urbain et Rural (SAUR; Company for Urban and Rural Infrastructure), a subsidiary of BOUYGES, S.A., which had obtained a contract for the rehabilitation of networks of the city of Abidjan in 1959.

SODECI's capital is held as follows:

Private Ivoirien Investors	45%
Government of Cote d'Ivoire	3%
Common Investment Fund[1]	5%
SAUR, S.A. and Private French Investors	47%

Scope and Volume of Activities

The bulk of SODECI's activities consist of producing and distributing potable water in urban and semi-urban areas. Village water supply in rural areas is managed directly by the villages.

Additionally, SODECI has created a separate company to manufacture pipes and hydraulic equipment. This venture, however, is currentlyinsignificant due to the present economic recession in Côte d'Ivoire.

As of September 30, 1989, SODECI's turnover was 17 billion Francs CFA without taxes and 26,3 billion francs CFA with taxes (including surcharges).

Activity	Percentage of Turnover
Services:	
• Production and Supply of Water	67
• Sewerage	6
Works (including network connections)	13
Other	14

II. WATER SUPPLY

As of September 30, 1989, SODECI's performance can be described with the following figures:

Water Produced	100 million cubic meters
Water Billed	85 million cubic meters
Number of Subscribers	225,000
Coverage	370 cities and large villages

Contractual Obligations

SODECI has the exclusive contract for the:

- exploitation of ground water resources
- production and distribution of potable water for the entire Country, excluding rural water supply
- activities related to the exploitation and management of networks
- maintenance and repair of works of all sorts
- replacement of works
- new works for adapting, reinforcing, or extending existing facilities (when their cost exceeds 80 million francs CFA, SODECI introduces an invitation to tender)

For its operating costs, SODECI is paid directly (and at its own risk) by the subscribers.

[1]Reserved for SODECI's agents.

Water is billed by cubic meter. Tariffs are established according to brackets of consumption. In addition to its fees, SODECI collects:

- a surcharge tax for the Government of Côte d'Ivoire, which allows the reimbursement of loans that were made in the past
- a fixed amount per cubic meter of water billed which goes into a Development Fund that was established to finance:
    - connections to low-income areas
    - replacement works
    - extension works (new centers, new networks, etc.)

Financial decisions concerning the utilization of funds available in the Development Fund are made by the Ministry of Works.

The average price of water is 263 francs CFA per cubic meter. The portion retained by SODECI is approximately 50 percent of the amount billed.

Water supply service is subjected to a Value Added Tax (VAT).

Operation of a Public Service

SODECI provides a public service. The conditions for administrating this service to the subscribers are defined in "Regulations of Concessionary Service."

Control of SODECI

SODECI is controlled by the Agency for Water for management and operations, and by DCGTX (Agency for the Management and Control of Construction of Public Works) for the research and implementation of construction works.

III. SEWERAGE

Sewerage in Abidjan is still in an embryonic state. It consists of rain- and used-water collectors (united and separated networks) and of a few sewerage treatment plants. Most of the affluents are disposed of in the environment. Studies for new infrastructure projects are currently being undertaken.

Within the Country, there are a few sewerage treatment plants connected to sewerage networks.

SODECI is the Government's partner and is responsible for the operation and maintenance of most of the sewerage networks and treatment plants in the Country.

Activities in these areas are performed under two types of contractual arrangements:

(i) Services contracted at the end of 1988 for a duration of 3 years between the Government of Côte d'Ivoire (represented by the Ministry of Public Works) and a merger company SODECI/SAURAFRIQUE. This contract is for the maintenance and operation of networks for the city of Abidjan.

(ii) Several service contracts between SODECI and private companies or between SODECI and public or parastatal entities.

Abidjan's Market

The scope of activities includes:

- general supervision of sewerage and drainage networks
- cleaning out and maintenance of networks
- management, operation and maintenance of other works such as pumping, filtration, sand-removal and sewerage-treatment stations

Service rules and regulations have been established and apply to users of Abidjan's market.

Financial Arrangements

- A flat annual rate of 855 million francs CFA (excluding tax)
- An invoice for a set unit price quantifies the value of each activity
- Financing is usually borne by the drainage tax, whose collection is the responsibility of the Government.

All the activities are controlled by the Government's Agency for Water, which benefits from the assistance from DCGTX.

IV. ORGANIZATION OF SODECI

Although SODECI is a private company, it is de facto a public service company.

The objectives of its means and methods of operation are:

- to create activities
- to constantly improve its production performance
- to improve the quality of its relations with the public

In order to achieve its objectives, SODECI observes three principles: (i) it has a very decentralized structure; (ii) it makes broad use of computer technology; and (iii) it believes in the dynamic management of human resources.

Decentralized Structure

Ten regional branches depend on SODECI's headquarters located in Abidjan. Two of them are located in Abidjan, and the remaining eight are dispersed throughout the country.

The basic unit is the **production center**, whose size and organization varies according to the number of subscribers it serves.

Responsibilities are also very decentralized. For example, each center is earnestly committed to formulating and complying with its own budget. Thus, there is a true management by objectives, whereby each center enters into an actual contract with SODECI's headquarters.

Broad Use of Computer Technology

- The entire management of the subscriber's accounts is computerized, including billing and payments.
- SODECI's management of the budget is computerized, as are those of the regional centers which extensively utilize micro-computers.
- All accounting is computerized.

Furthermore, SODECI has at its disposal analytical programs adapted to its needs, which allow it to periodically measure its progress towards the attainment of its objectives.

Dynamic Management of Human Resources

SODECI employs 330 agents, 99 percent of whom are African.

SODECI's main characteristics in the management of its human resources are:

- participation of its agents in the Company's objectives, with bonuses awarded in accordance to each agent's performance
- an established mode of communication among agents of the same hieratic level, and between agents and senior management
- an adapted communication policy, including informal contacts, scheduled meetings, seminars, meetings for the exchange of information between different administrative and operational structures, sensitization meetings, etc. Senior management is ardently involved in the formation of Company policies by being attentive to practical questions
- a very active training policy
- progressive and diversified Company benefits. In addition to his salary, each agent:
- has a health policy which covers 80 percent of his expenses
- benefits from savings realized by the Social Benefit Fund to which the Company contributes substantially
- is a Company stock holder though the Mutual Fund

- is given a tuition allowance for each of his children attending school
- has access to the real estate market thanks to the preferred conditions for loans offered by the Company
- may subscribe to a fund for low-interest loans

Personnel is represented by elected delegates and through four entities: (i) the Agents Union; (ii) the Athletic Association; (iii) the Association of Supervisory Staff; and (iv) the Union of Professional Africans.

V. PRODUCTIVITY: A CONSTANT OBJECTIVE

The figures given below demonstrate in practical terms SODECI's permanent concern for improving productivity.

Water Billed	85%
Payment for water by private subscribers	98%

Productivity Ratios

- 1,500 subscribers per meter man
- 8 connections per day per plumber

	1979	1989
Turnover per agent in millions francs CFA	7.62	12.96
Number of Subscribers per agent	80.70	169.49
Cubic meters of water sold per agent, in thousands	45.41	64.00

SODECI'S Spirit

The image of SODECI, a private company in the service of the public, must constantly be improved. This results from a Company spirit, which favors the development of strong values unique to SODECI and its activities, including: discipline, training, commitment, strictness, solidarity, discretion, an enterprising spirit, open-mindedness, self-confidence and justice.

Each agent must consider himself a true professional and must be proud to belong to SODECI.

The respect of these values has enabled SODECI:

- to be the first private water supply company in Africa
- to make a difference
- to be considered an efficient and effective model

SUMMARY OF DISCUSSION

The utmost interest given by the audience to the presentation on SODECI is best indicated by the two and a half hour question and answer period that followed. Although the main points of the discussion are summarized below, for further information on SODECI's management, performance, and training activities, interested readers are encouraged to write directly to SODECI (B.P. 1843, Abidjan 01, Cote d'Ivoire).

After being thanked for his presentation and for his contribution to the promotion of the water sector in Africa in his capacity of President-Founder of the Union of African Water Suppliers (UAWS), Mr. Zadi Kessy replied that he had the highest esteem in AUWD new President to carry the torch after him and that he would continue to bring his support to the organization for which he felt very committed.

On a question on African partnership, Mr. Zadi Kessy indicated that in addition to the personal relationships already established among the managers of African water supply entities, this partnership is meaningful only when there is an effective transfer of knowledge and expertise among African experts. He further stated that, for the present, the partnership must be triangular and include the assistance of developed countries.

On the price of water to the consumer, Mr. Zadi Kessy confirmed that in 1987, SODECI reduced the price of water by 15 percent and this lost of income had to be compensated by a reduction of operating costs and expenditures. To manage it some drastic measures had to be taken, among them: a) vehicles were amortized over a period of five years instead of three; b) fuel consumption was reduced significantly; and c) 160 staff positions were abolished. SODECI's staff worked relentlessly to improve the financial performance of the Company. At the end of the fiscal year SODECI managed to make 250 million Francs CFA profits which allowed it to re-hire 67 persons. SODECI continued its expansion and hard work by taking actions on reducing its expenditures, and by the end of 1989 SODECI realized 500 million Francs CFA of profits. In the process of reducing its expenditures SODECI improved its internal management which lead to the realisation of substantial benefits.

One discussant asked how SODECI managed to have 99 percent of the private sector pay its water bill within a reasonable amount of time--an unprecedented success in Africa. Mr. Zady Kessy explained that the private sector had 45 days to pay for their water bills - a time period during which employees usually receive two pay checks. He attributes the success of the billing collection to women. He believes that in African Societies women have less difficulties than men to collect money, and for that particular reason all of SODECI's bill collectors are women. When a man comes to pay his water bill, he will not argue with a woman. If women are educated, properly dressed, the man will pay. That is his secret.

On the subject of his management style, Mr. Zady Kessy said that good managers must pave the way for their departure; they must select carefully their collaborators, trust them and make them responsible for their own actions in such a way they feel committed. It is also imperative that a good manager keeps in touch with all employees to develop the company's spirit. There are regularly scheduled senior management meetings at SODECI as well as regularly scheduled meetings within each service at headquarter and each distribution center. This is the only way for people to know about the company, its performance and its problems. He indicated that he can leave for one month, and the company will continue because he has entrusted his management team with responsibilities; they can sign checks, they accept the responsibility to manage; they know their work and they are highly capable to perform their

work without him; on this basis he can truly say that he is not indispensable for the running of SODECI. Mr. Kessy is convinced that it is not the position that makes the man but the man that makes the position; he knows that the day he leaves SODECI one of his managers will be there to succeed him with the full knowledge of the company's operations.

Mr. Zadi Kessy gave some clarification to a question on how the management by objectives worked for SODECI. He explained that goals are set every year for the company and these goals are translated into yearly objectives for each department, production center, etc. The objectives by department or production center are negotiated and agreed upon with each manager; they are quantifiable and the bonus/reward system for employees is based on the attainment of these objectives. He also indicated that it is on the basis of these objectives that individual budgets are set for each department or production center.

On the subject of SODECI's own training institute, Mr. Zadi Kessy indicated that they do receive a large number of trainees from several African countries. Training is however an expensive activity; therefore, water distributors interested in using SODECI training facilities and attending its program, should secure the financing from support agencies. On that basis, SODECI is ready to help other African water distributors.

The World Bank and the African Development Bank wish to express their gratitude to Mr. Marcel Zadi Kessy, President and Executive Director of SODECI and his management team not only for their outstanding presentation but also for the support the Company has provided in the organization of the workshop and conference.

PART IV

ANNEXES

WORKSHOP REPORT OF WORKING GROUP 1

Introduction

Group 1 wishes to congratulate the African Development Bank, the World Bank and the United Nations Development Programme for their fortuitous initiative in organizing this Workshop, and for the pertinent Position Papers presented on the sector in Africa. It also salutes the three presenters for their efforts in giving a synthetic view and for the interest they showed to better facilitate the discussion.

Group 1 was comprised of countries from the Maghreb and from the Sahel. It wishes to underscore their differences regarding the three topics, particularly with respect to the characteristics of rural areas and the achievements made during the International Drinking Water Supply and Sanitation Decade (IDWSSD). They emphasized the three following points:

- the Maghreb has an organization and a technological level different that those described herein
- the rate of coverage in the countries represented in Group 1 exceeds the average of 30 percent mentioned in the report
- the level of intervention by the external support agencies is less significant in the Maghreb countries

While stressing the close linkages between drinkable water supply and sanitation, Group 1 notes that sanitation was the poor parent of IDWSSD, and it recommends that sanitation receive special attention over the next decade.

I. Institutional and Sectoral Issues

Given the insufficiencies in sector planning, the dependence of the sector on external sources for financing and various supplies, the elevated costs of consultant services and the weakness of the results, Group 1 recommends the following as a major objective: beneficiary communities should be financially responsible for water supply and sanitation.

With this objective in mind, participants agreed that of the three possible approaches--supply, supply/promotion, and promotion--it is the last which gives the authorities a role in promotion/coordination that can best respond to the situation in their countries, the following observations notwithstanding:

- this approach must also be considered an objective to be followed by everyone
- each country must be able to adapt it to its situation

The main conditions for the success of such an approach are:

- the decentralization of the responsibilities for supply
- the emergence of local operators, public or private, formal or informal

II. Resource Mobilization

While recognizing the principle of charging for water at cost, the participants recommend that this principle be modulated in consideration of the African countries' stage of development and the limited means of rural populations.

A consensus therefore emerged around the following points regarding cost recovery:

- Although communities will be asked to increase their participation, the bulk of the initial investment during the 90s, will be subsidized by national budgets, by evening-out tariffs and by external support.
- Operating costs must be the responsibility of the beneficiary populations, and cost recovery could be facilitated by:
- enhancing hydraulic infrastructure by the grafting of other income-generating economic activities to provide additional resources

- creating rural financial systems of the "caisse de credit mutuel" type
- developing an informal private sector

A better use of subsidies calls for:

- their efficient utilization for operations
- an improvement of the functioning of services
- a cutting down of operating costs in the financing of works
- a reduction of costs of works, particularly of drilling
- a pluri-annual programming of activities

Particular effort must be made for the mobilization of resources and for cost recovery with regards to sanitation.

As a result, Group 1 ask that States and financial agencies support the development of the sanitation sector in the decade of the 1990s, especially through reinforcing the dissemination of low-cost technologies such as those of CREPA in Ouagadougou.

WORKSHOP REPORT OF WORKING GROUP 2

Introduction

During the Workshop on the policy for the water supply and sanitation (WSS) sector in rural Africa--organized by the World Bank, the African Development Bank (ADB) and external support agencies (ESAs), and held in Abidjan, May 7-9, 1990--the delegates from the 10 African countries of Group 2 considered the following topics:

I. Institutional Issues
II. Financial Resource Mobilization
III. Rethinking Sector Management

During their discussions, Group 2 expressed approval of the position papers on the above topics. However, some important observations were noted, including:

- communities benefitting from drinking water points are often neither sensitized nor organized
- sensitization and involvement of these communities is a prerequisite for the implementation of any water supply project

These remarks are true both for Sahelien areas, where the problem is caused by the scarcity of resources, and for wooded areas, where the quality of the water is questionable.

I. Institutional Issues

Generally speaking, the role assigned to each of the actors depends on the nature and importance of the activity. The role of the supplier must be returned to the beneficiary communities who will in turn need to call on the private sector, ESAs and non-governmental organizations. However, the necessity of encouraging and protecting local artisans (as indispensable agents to ensure the durability of rural equipment) should be emphasized.

The role of the beneficiaries will consist of participating in the development and implementation of projects, and in the operation of the works placed at their disposal.

The role of coordination which belongs to the State, is perceived as follows:

- all intervention in the sector must be submitted for the approval of the promoter (coordinating structure)
- the needs of the communities must be communicated to the coordinating structure
- the coordinating structure must be informed of resource mobilization (financial and hydraulic)

In the most simple case, where sector activities are handled by a single department, the coordination must be assured by the supervising department.

In the case where actors are from various ministries, it is recommended that a National Water Committee--with a permanent secretariat placed under the authority of one of the ministries involved--be created or reactivated.

II. Financial Resource Mobilization

Grants and other financial resources of the sector must be allocated to the various stages of the project--involvement, sensitization and training (before, during and after project implementation). After implementation, they must be allocated to the follow-up and maintenance of the works.

Given the low level of income of rural populations, which is aggravated by the current economic situation, it would be desirable for financing to be integrated as much as possible with income-generating micro-projects.

The participation of the rural community will essentially consist of:

- supplying local materials for construction
- the possible contribution of man power

- financial participation, in certain cases
- the responsibility of the management of the works, above all

III. Rethinking Sector Management

Group 2 recommends that (i) in the future, following the example of ADB (which took some concrete actions to strengthen the capabilities of local, regional and African experts), other ESAs should give priority to existing local expertise for technical assistance; and (ii) regarding the selection of methodologies, each project should systematically include a substantial training component both for the beneficiaries as well as for the national technicians and experts. This would cut down the need for expensive foreign technical assistance which impedes the development of local expertise.

To guarantee the durability of existing works, the training and organization of village committees for management and maintenance of works must be emphasized. Their follow-up under the coordination of the promoter must also be stressed.

In most African countries at present, the State plays the part of a "supplier/promoter" in national programs for rural WSS. In the 1990s, the aim will be to progressively discharge the government of its role as supplier of services, and to favor the other actors in the sector. This will allow the State to be uniquely dedicated to the role of promoter and to assume the following tasks:

- control, follow-up and evaluation
- planning/budgeting
- coordination
- sensitization and training

Regarding legal aspects, Group 2 notes that although the communities are generally responsible for supplying services, they are not yet sufficiently structured to enter into contracts directly with ESAs. Therefore, authorities from various countries will have to strengthen the managerial capabilities of these communities.

Recommendations

To avoid a recurrence of the failures of the last Decade, it would be advantageous:

- to perform institutional studies by country in order to find solutions appropriate for each country

- to widely disseminate to governments and ESAs the recommendations emanating from this Workshop and other similar activities

To that end, Group 2 recommends:

- a wide dissemination of the conclusions and recommendations of the Workshop by its organizers to our governments and other ESAs

- a true adherence of our States to these conclusions and recommendations

- an effective implementation of the conclusions and recommendations in programs tailor-made for each country's situation

WORKSHOP REPORT OF WORKING GROUP 3

Introduction

The fruitful discussions of Group 3 were based on presentations of the following topics:

I. Institutional Issues
II. Financial Resource Mobilization
III. Rethinking Sector Management

Given the complementary nature of these topics, Group 3 decided that they should be treated in a global and integrated way, and thus the conclusions are presented in a single document.

During the discussions it became clear that the main theme could be restated as follows: "How does one implement durable water supply and sanitation (WSS) systems for all in rural areas?"

"Rural areas" is defined as (i) villages or a series of villages; (ii) whose inhabitants' predominant activities are agriculture and cattle-raising; and (iii) where WSS can only be achieved through simple systems which must be managed by the community itself.

Principles Observed

The discussions on the reformulated theme lead to the following general principles, which were unanimously endorsed by the participants:

- Water and sanitation are two components of the same problem and therefore can not be dealt with separately. Indeed, all water for biological or industrial use becomes, after consumption, liquid waste whose drainage poses a sanitation problem.

- The great number of actors involved, each having a dynamic role to play, generates a complexity which is expressed at various levels and for various interventions (see Table I, II and III).

- Each actor's responsibility is progressive in time and space: the disengagement of control from the State to the beneficiary communities must be progressive and must take into consideration the specificities of each country. It must be noted that this disengagement only involves the activities for which the communities could acquire and assume their autonomy.

- The understanding that payments for amortization is an essential condition for the durability of equipment: amortization allows an increased cash-flow to the communities, and thus diminishes their need for external assistance for the renovation and extension of works or for the implementation of new investments.

- Donor agencies should not tie their aid to conditions which are not consistent with the priorities established by the beneficiary countries. Indeed, tied aid demotivates governments because it causes an unbalanced development in the countries.

- WSS activities in rural areas do not constitute an end in themselves, but are seen as being part of an integrated rural development. Thus, for optimal results, these activities must be conceived in a framework of integrated development projects, taking into consideration the priorities of the beneficiary community.

Conclusions and Recommendations

It would be appreciated if, during the preparation of conferences such as this one, the participating countries could be involved in the development of the working documents. Additionally, the documents should be made available prior to the conference in order to facilitate the effective participation of the delegates.

An observance of the principles put forward by Group 3 implies a deep political commitment. This commitment can only be obtained to the extent that the technicians who have participated in this Workshop manage to convince the political authorities in their respective countries that these proposisitions are well founded.

A better coordination of donor agencies in the selection of their interventions is desireable. Various actors intervene in the initial equipment, in the management, and in the renewal or extension of rural water installations. These actors, be they public or private, formal or informal, have responsibilities which vary according to the type of operation and the time of its implementation.

- This is particularly true in the case of the initial equipment activities, which involve an assessment of the demand, an identification of resources (water, financial, technical, etc.), the selection of a technological option, the development of a financing policy, the enforcement of laws and regulations, and the mobilization and training of the population. The role of national actors (ministries of all sorts, national water societies, etc.) is very essential.

- At the local level, the community and its actors also have a role to play. They must make their demand explicit, train those responsible for the water points, and contribute either financially or in kind to project implementation.

- Once the first works are realized, the role at the local level will become very essential, but, also with specific responsibilities at the regional level (creation of a inventory of spare parts, progressive formation of teams capable of undertaking more important repairs, etc.)

- When the time comes for renewing or expanding installations, the local level should normally have a more predominant role in the selection of technologies and in the necessary financing.

For the development of rural water supply, the following must be taken into consideration:

- *Functions of promotion or initiation*--the training of the population, the identification of needs and resources, the development of appropriate legislation, etc.--these functions are the responsibility of the authorities who act in the public interest and who must know how to subordinate the particular interests of this or that private actor.

- *Works, Actions*--the works must be done by private operators, whether formal or informal, regardless of the nature of the task. When private operators do not exist, the public authority may temporarily substitute itself, but it must create conditions enabling private operators to take over. In other words, it must create a market for rural water supply.

- *Foreigners*--donor agencies, non-governmental organizations, private companies, etc.--can play a role in this process of promotion or incitement by lending their know-how and demonstrating the practices of elsewhere. They can also be responsible for the implementation of the works when there are no public or private operators.

In conclusion, let us not forget that these suggestions and principles evolve with time, and they are dependent upon the specificities of each country and each region.

TABLE I: Levels of Actors and their Roles

	ACTORS		
OPERATIONS	National	Regional	Local
First Equipment	3		1
Operations and Maintenance	0	2	3
Rehabilitation and Extension	2	2	2

TABLE II: Actors

FUNCTIONS	ACTORS		
	NATIONAL		FOREIGN
	Public	Private	
Promotion (Initiation)	1	0	1
Action	0	1	1

TABLE III: Roles and Actors Involved in the Rural Water Supply and Sanitation Sector

POST	ACTORS							
	Gov't	Region	Local Auth.	Comm-unities	Formal Priv. Sec.	Informal Priv. Sec.	Donor Agencies	Foreign Actors
1 Regulation	3	1	1					
2 Planning	3	2		2				
3 Resource Mobiliz.	3	1	2	2			2	1
4 Creation of Rural Mkt.	3						1	
5 Industrialization	3				2			
6 Select. of Technology	3			3				
7 Training	3	2	2		3		2	2
8 Coordination	3	2	2				2	2
9 Control	3	2	2				2	2
10 Project Ident./Formul.	3	1	1	3				
11 Initial Infrastructure	3	1	1	2				
12 Implement. of Wks.	1	1	1	3	3	2		2
13 Maintenance	1			3		3		
14 Rehabilitation	2	1	1	3				
15 Renewal	2			3				
16 Operation			1	3		2		

3 - maximum 2 - average 1 - minimum

Comments:

- Actors should complement one another.
- We recognize the non-negligible role played by the informal sector, which in the future should be better directed by the authorities--through training activities and the choice of appropriate investments.
- Coordinating structures for all activities and actors involved in the WSS sector should be created or reinforced in order to achieve a better use of investments. Women's associations--regardless of their structure or their level of involvement--must be integrated in these coordinating structures.

WORKSHOP REPORT OF WORKING GROUP 4

I. Institutional Issues

The first session was presented by Mr. K. Khotle of the African Development Bank. Mr. Khotle presented salient points, such as that on average less than 30 percent of the rural population in Africa has access to safe water supply. He clarified the definitions of "rural community" and "demand" as used in the context of this workshop. He also identified the various functions and classified the activities undertaken in the rural water supply and sanitation (RWSS) sector, namely: regulatory, planning, capital finance, outreach, delivery, and management. These functions were identified as either "promotion" or "provision." Mr. Khotle grouped the African water supply situation into three categories: (i) self provision for the poor, dispersed, unorganized; (ii) community provision for the better organized; and (iii) utility provision for the urban.

Mr. Khotle identified six distinct institutional issues relating to African RWSS: (i) highly centralized government but low incentives; (ii) weak local government and bodies; (iii) a wide range of government institutions and little coordination; (iv) weak private sector often excluded from services; (v) seriously constrained local manufacture; and (vi) distortion aggravated by external grant financing.

The last point Mr. Khotle touched upon was the three possible approaches within the provision and promotion spectrum: "provision," "provision/promotion," and "promotion." He concluded that the "promotion" approach is favored because it gives communities the greatest involvement and the most initiatives.

Discussion

The discussion focused on the following two topics:

- What are the possible roles of the public sector, the private sector and the beneficiaries themselves in the provision and management of RWSS?
- Should governments shift their emphasis from provision to that of promotion? What are the operational implications?

A long discussion followed, and some of the participants presented the experiences in various countries. It became clear that in most countries the central government provides for the communities, but the latter have no role in that provision. Therefore: (i) the local government structures, i.e., communities, should be strengthened and there should be a switch to promotion; (ii) the switch from the central government as provider to the community determining its needs should be accompanied by institutional infrastructure, i.e., the availability of funds for rural areas; and (iii) because a change from provider to promoter requires political will, politicians should be brought into play (especially since in the present structure most governments are obligated to provide services for the remaining 70 percent not covered).

Conclusions and Recommendations

Group 4 agreed in principle that there is a need for governments to shift from provision to promotion, and that community institutions should be strengthened. Group 4 recommended that this shift be taken cautiously and go hand-in-hand with the following:

- As politicians play a major role, they should be brought into the picture earlier about this approach, either through an international forum or in their countries.
- The change from the present system to the proposed approach should be gradual over the coming decade. This change should take into consideration affordability and equity for the beneficiary communities.
- The implications and operation factors should be studied, perhaps through case studies from different countries, before making recommendation to their respective governments.

II. Financial Resource Mobilization

This topic was presented by Mr. Harvey A. Garn from the World Bank. In his presentation, he mentioned three options to be considered, namely: (i) to continue present financial strategies; (ii) to increase the level of share of subsidy for the sector; or (iii) to increase the share of costs borne by users.

He then examined the following criteria used to assess these options: (i) the effects of distribution, derived from the responsibility for payment and access to service; and (ii) the effectiveness of the utilization of funds.

Mr. Garn also considered the macroeconomic background, defining the main features as: (i) a generally large debt to export and debt to gross national product ratio; (ii) a reduced per capita income; (iii) investment levels that increase less than population growth; and (iv) a rising per capita cost of service provision.

He then expanded on the three options mentioned above, on past practices, on demand/willingness to pay, on institutional arrangements, on charging structures, and on levels and options for capital cost financing.

Mr. Garn's conclusions were as follows: (i) current financial strategies are unsatisfactory; (ii) increasing the subsidies alone is not an adequate solution; (iii) cost recovery from users has advantages, but mechanisms and conditions must be appropriate to this end; and (iv) full cost recovery from users is not yet possible, and thus subsidies are still required.

Discussion

A long discussion ensued from the floor, which can be summarized as follows:

- Which services should receive subsidies? Will starting to charge now be acceptable by users who have been receiving free services?
- It is difficult to collect charges from the consumers/users, especially from consumers using public utilities. This problem is worsened when the users are aware that the money is going to the central government rather than remaining in the area.
- Group 4 generally agreed that a good approach may be to leave the collection of charges for services rendered with the communities.
- In order to reduce costs (and hence charges) to poor people, the providing of services should be adapted to low-cost technologies.

Conclusions and Recommendations

Group 4 concluded the discussion with the following recommendations:

- There is a need to start charging the users some fee for cost recovery.
- Capital costs should be borne by the central government and the operation and maintenance should be wholly or partially charged to the consumers on a gradual basis until full recovery is achieved.
- Effective demand or willingness to pay should be demonstrated by the user community through a token contribution for services.

WORKSHOP REPORT OF WORKING GROUP 5

I. Institutional Issues

In his presentation of the above stated paper, Mr. David Grey of the World Bank highlighted the fundamental institutional problems that have been observed during the International Drinking Water Supply and Sanitation Decade. He also emphasized the lack of sound institutional strategies in the rural water supply and sanitation (RWSS) sector and the need to address this situation by considering the following questions, upon which the subsequent discussion of Group 5 was focused:

- the possible roles of the public sector, the private sector and the beneficiaries in the provision and management of RWSS

- the shift of emphasis by governments from provision to promotion and the operational implications of such a shift

In discussing these two principal issues, particular attention was paid to the re-orientation of the governments' role from provider to promoter, even though in some countries the role of government as promoter has been recognized in the form of coordination, animation/sensitization, public education and community participation. In spite of a consensus to redefine the governments' role as promoter, Group 5 acknowledged the difference between community participation and community management, and recognized that comprehensive community management would be difficult to realize in the short- and medium-term. Rather, gradual efforts should be made to transfer the responsibilities to community management.

Conclusions and Recommendations

One the primary roles of the government within the development process of RWSS should be capacity building at all levels of society, including the public and private sectors, non-governmental organizations (NGOs) and the rural community. Capacity building should create an enabling environment within which the demand for services could be met efficiently and effectively by appropriate institutions.

Central governments should seek efficient ways of facilitating sustainable provision of services for rural communities. In so doing, Group 5 agreed that the perception of the government as the provider of these services should be gradually phased out, and service provision by other actors such as local authorities, the private sector, NGOs and the communities themselves should be promoted and facilitated instead.

This promotion/facilitation role of governments should include, among other aspects:

- providing financial resources
- ensuring a sound regulatory and policy framework
- planning, designing and standardizing
- educating communities to enable them to make decisions and manage services
- supporting appropriate affordable technologies
- strengthening the capacity of the informal and formal private sectors
- coordinating sector activities

Given the socioeconomic situation in many countries, central governments may need to participate as a provider of services to the rural communities in the short- and medium-term, while decentralization and local capacity building occurs. Both the time frame and nature of the shift will vary from one country to another depending upon the political, economic and environmental conditions.

As a final conclusion, Group 5 strongly encouraged the development of an institutional framework to guarantee sustainability.

II. Financial Resource Mobilization

This paper was presented by Mr. Mbanefo of the World Bank, who invited Group 5 to consider the following points as highlights for discussion:

- How can cost recovery be made feasible?
- How can subsidies be better utilized?
- How can the financial performance of the responsible organizations be improved?

- How can the performance and role of the financial intermediates be strengthened?

- Should development ideas and initiatives come from local communities to central government, rather than the other way around?

Conclusions and Recommendations

In considering the above points, Group 5 discussed in detail the issue of total cost recovery, which was defined as the total capital cost plus operation and maintenance costs for services. Since water is a basic need of rural communities who are typically very poor, Group 5 concluded that the concept of cost-sharing--that is, less than full cost recovery--is more acceptable, both politically and morally, than total cost recovery. Governments should facilitate the provision of RWSS services by assuming the major proportion of capital cost, whilst the beneficiaries would assume the full operation and maintenance costs and also contribute to the capital cost in cash or in kind.

Regarding subsidies, Group 5 expressed concern over the common practice of the indiscriminate use of subsidies. However, Group 5 recognized the need for subsidizing capital cost and major rehabilitation, as well as support services such as training and extension.

In view of the limited coverage of RWSS in Africa and its high costs in comparison to elsewhere, Group 5 recognized the need to both (i) reduce costs through improving the financial performance of sector organizations and adopting appropriate technologies; and (ii) raise additional financial resources at different levels within the country as well as externally.

Banks and other financial intermediaries should be involved and contacted in community mobilization and sensitization efforts of governments and sector development agencies. Banks should be encouraged to lend to artisans, pump and spare-part manufacturers, and other business entities working in RWSS. Governments could consider requiring banks to contribute a fixed percentage of their profits as grants, perhaps on some matching terms as government grants, in order to promote development of the RWSS sector.

Group 5 considered that beneficiaries should be encouraged to develop initiatives and ideas on RWSS development programs rather than being directed by central governments at all times.

III. Rethinking Sector Management

In his presentation, Mr. Laubjerg of DANIDA focused the attention of Group 5 on the five following issues:

- documented policies and strategies
- mechanisms for internal and external coordination
- control of external support agencies (ESAs)
- the role of ESAs in developing sector framework
- the role of governments in initiating sector planning

Conclusions and Recommendations

Group 5 firmly endorsed the need for governments to take strong initiatives in developing and enforcing sound sector policies and legislation in order to improve the use of scarce resources. Group 5 recognized that few countries currently have such a policy framework.

Within a sector policy framework, national sector institutions and ESAs can provide coordinated support. In this regard, donors should limit or remove conditionalities, as their support would be defined within a sound national policy framework.

It was recognized that effective coordination can be jeopardized by ESAs who are not willing to conform to expressed policies and strategies.

Special coordinating mechanisms for the sector have been established by some countries, but governments are reluctant to dictate conditions to ESAs for fear of loosing sector support. On the other hand, some ESAs tend to withdraw their support if sector development does not lead to effective utilization of facilities on a sustained basis

due to lack of adherence to expressed government sector policies and strategies.

A well-documented framework can serve as an effective tool for internal and external coordination of sector development through the normal government machinery. Adaptive planning and monitoring can best be done at a decentralized level.

ESAs in Group 5 welcomed firm control by governments of sector policies, and volunteered support in the preparation of sector development frameworks. However, concern was expressed by Group 5 that such support not jeopardize the overall responsibility and authority of government in the area of sector management.

CONFERENCE REPORT OF WORKING GROUP 1

Chairman: Mr. Cardoso, Secretary of State for Natural Resources of Guinea Bissau
Rapporteur: Mr. Lahlou, Finance Manager, National Drinking Water Office of Morocco

Introduction

Group 1 reviewed the objectives and strategies of the water supply and sanitation (WSS) sector beyond the International Drinking Water Supply and Sanitation Decade (IDWSSD) and agreed upon the following observations and recommendations.

Observations and Recommendations

Group 1 noted that African countries are currently facing challenges in the field of WSS which they will still be confronting during the next decade. The sector must not only make up for being behind schedule, it must also address the increasing demand resulting from the demographic pressure caused by natural population growth and urban drift. This challenge is all the more important because water is a limited resource of increasingly acute scarcity, and because this crucial and necessary resource faces mounting risks of contamination and pollution. These problems are aggravated both by the financial severity some countries are forced to adopt and by the natural disasters (draughts, desertification, etc.) that effect resources as well as economies.

In spite of these problems, and because the provision of WSS services--at least with reciprocal interaction--is the essential element for improving the health and hygiene conditions of the populations and for combatting water-related diseases (especially Dracunculiasis) Group 1 recommends as an objective the provision of adequate WSS for all by the year 2000.

In this context, Group 1 considers that the documents presented by African Development Bank (ADB) and the Union of African Water Suppliers (UAWS) serve as a valid basis for the definition of WSS strategies for the years beyond IDWSSD. These documents, which complement one another on certain points, should also take into account the Workshop report presented by Group 1.

Furthermore, Group 1 stresses the importance of the following points:

- The provision of potable water and sanitation services must be a global approach--not a partial, sectorial, technical or technological one. This approach must encompass all aspects of the sector, including environmental factors with a direct or indirect impact on the quality or the quantity of water appropriate for human consumption.
- All measures that favor the preservation and the protection of water resources should be taken.
- Project planning and implementation should be based on effective demand and on covering needs for a period determined by economic activities.
- Special attention should be paid to sanitation, and cost recovery should be strongly encouraged, as should related training and extension activities.
- Attention should also be paid to the drinking water supply in rural and peri-urban areas.
- An adequate legal and institutional environment for the promotion of community participation at every cycle of a project should be created.
- Such an environment should also promote the participation of women in every cycle.
- Sensitization, the relaying of information, and the training of the population should be promoted, using all appropriate means (mass media, health education, etc.).
- The necessary training--at all levels--should be dispensed to ensure the success of projects and of cost-saving measures.
- Local skills should be developed.

- Cost reduction should be sought, especially through the use of appropriate technologies; to that end, applied research should be developed and encouraged through the involvement of universities and research institutions.

- Drinking water and waste water standards, with reference to the standards of the World Health Organization, should be adopted and adjusted to national realities and possibilities.

- The establishment of structures for quality control and for the implementation of standards (monitoring and supervision laboratories) should be encouraged.

- Country-specific objectives, implementation strategies, programs and actions are deemed necessary.

- It is important to aim at the best country-level coordination possible, involving all actors concerned.

- The promotion of both regional cooperation (among countries with similar characteristics) and international cooperation is vital.

- The implementation of an institutional framework showing clearly the respective responsibilities of the governments and the public- or private-sector institutions is essential.

Finally, Group 1 deems it necessary to: (i) present the recommendations of this meeting to the New Delhi Conference; and (ii) entrust a committee of African individuals and institutions (such as ADB and UAWS) with the follow-up on the implementation of the recommendations for the next decade.

CONFERENCE REPORT OF WORKING GROUP 2

Chairman: Mr. Nenonene, Chief, National Sanitation Service of Togo
Rapporteur: Mr. Abouki of Congo
Co-Rapporteur: Mr. Mangnoungou, Chief, Research Division, SNDE of Congo

Group 2 met to review the *Strategies for the 1990s* proposed by the African Development Bank. Mr. Zongo briefly presented the document, after which the discussion focussed on the following topics:

- 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?
- What amendments should be made to the document for it to be effectively used?

Regarding the first point, Group 2 unanimously accepted the need for new strategies for the water supply and sanitation sector in the 1990s. In this respect, the document considers the following concerns expressed during the Workshop:

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

With respect to the second point, Group 2 deems it necessary to modify the proposed Document (see Specific Comments below).

Group 2 also considered the subsidiary topics, and wishes to record the following:

Regarding point 3 (effective demand as a basis for investments and long-term sustainability through user payments): although agreeing in principle, Group 2 stresses the necessity for a distinction between urban and peri-urban or rural areas:

- In urban areas, national solidarity requires that the water rate be based on cross-subsidization, so that rich areas support the poorer ones.
- In peri-urban 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 observations were made:

- In the simple case where one department controls all sector activities, coordination should rest within that department.
- In the case where several ministries are involved, a National Water Committee, with a permanent secretariat under one of the ministries, should be created or reactivated.

Finally, regarding point 6, Group 2 unanimously considered that the proposed procedure should not be regarded as a bureaucratic exercise, given the fact that its implementation calls for the participation of all sector actors--namely, the beneficiaries, the government, the external support agencies and the non-governmental organizations. The awareness of the various actors must be heightened to obtain both their support and their effective participation at the various stages. In the action plan, the roles of the various actors should be well defined, and regular evaluations should be planned.

Specific Comments

Among the "sector objectives," and under that of improvement of health and of human productivity, special mention should be made of the eradication of water-related diseases, especially *Dracunculiasis* in the countries where it is endemic.

Under "policies," the sentence on resource allocation and cost recovery should be reformulated as follows: Resource allocation and cost recovery lead to financial self-sufficiency of the sector, and ultimately to the principle of user payment for services.

In para 16, Group 2 acknowledged that a better efficiency can also be reached through program-contracts between the government and parastatal organizations, ensuring the financial and managerial autonomy of the latter. Privatization should only be contemplated when these intermediary solutions 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 effective demand and to user ability to pay is required for an improved design and a more adequate specification of equipment."

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

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 supervisory authorities and parastatal organizations.

CONFERENCE REPORT OF WORKING GROUP 3

Chairman: Prof. Kadima Mwamva, General Secretary, CNAEA, Zaire
Rapporteur: Mrs. Kabamba Bilonda, CNAEA, Zaire

The document *Strategies for the 1990s*, presented by the African Development Bank (ADB) and submitted to the scrutiny of Group 3, has been analyzed point by point with great care.

The lively debates, reflective of the unique interest of Group 3 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 recommendations of the Workshop on Rural Water Supply and Sanitation, Group 3 agreed on the modifications presented herein (see **Specific Comments** below).

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

Recommendations

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

Given that the goals of the International Drinking Water Supply and Sanitation Decade (IDWSSD) have not been reached, it should be extended by ten years in order to maintain national and international attention. One way to accomplish this is to implement task forces at the regional and continental levels, charged to monitor the progress of sector development.

Finally, Group 3 unanimously endorsed the conclusions of the General Managers Meeting of the Union of African Water Suppliers (UAWS), held in Lomé on March 20-22, 1990.

We cannot conclude 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 supply 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 and support of national as well as foreign actors, and through the optimal development of South-South and North-South partnerships, to reach the objectives defined by each of our governments, based on the experience gathered during IDWSSD.

Specific Comments

Summary, para 9: delete "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* develop a strategy . . .".

Para 8, last item: "Provision of basic services, to the extent possible, to the greatest number of people." Add two items: (i) alleviation of the water supply burden; and (ii) protection of the environment, and particularly of water resources.

Para 9, add two items: (i) promotion of and support to sector-related local enterprises; and (ii) promotion of partnerships.

Para 10: "...The steps consist of: (i) General points on the sector; (ii) Constraints; (iii) . . .".

Para 11, new title: "General Points on the Sector."

Para 12, new title: "Constraints." "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 of facilities*."

Para 32 (29): "*Where appropriate*, community management of . . . facilities is required to achieve . . . sustainability"; "Privatization . . . of the water supply and sanitation activities . . . must be encouraged."

Para 47 (44), add the following sentence: "This system should be made available to each government through ESA support."

CONFERENCE REPORT OF WORKING GROUP 4

Chairman: Mr. Sandile Ceko, Principal Secretary, Ministry of Natural Resources and Energy of Swaziland
Rapporteur: Mr. Balisi Khupe, Deputy Director, Department of Water Affairs of Botswana

Group 4 met to discuss the document, *Strategies for the 1990s*, prepared by the African Development Bank (ADB) for this Sector Conference.

Mr. Mhango presented an outline of the document, briefly addressing the various phases for strategy formulation. He cautioned Group 4 that the privatization process should be treated carefully in most African countries and, that if change is required, the process should be gradual.

In considering strategies for the coming decade, peri-urban settlements near towns/cities should also be included since they are problematic and have no water supply and sanitation (WSS) facilities.

Discussion

The discussion that followed ensued from the group sessions of the Workshop, and similar feelings were expressed.

The general points which arose from the discussion are as follows:

- Existing systems should be reviewed for different countries and should be consolidated before new schemes are brought in.
- Most African countries have plans and strategies, and these should be reviewed for the coming decade. If these strategies exist, then the external support agencies (ESAs) and/or non-governmental organizations (NGOs) can analyze them before deciding whether or not they can fund projects and become collaborators/partners.
- Recipient governments have the right to shop around for funds rather than be subjected to the tied aid offered 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 do not have to be paid back.
- Strong democratic structures should be established at the community level before communities are given the full responsibility of running the system.
- Strategies and development plans should be integrated, i.e., all the sector strategies and development plans needed by the community should be simultaneously realized.

Group 4 decided that its final recommendations would be based on the 10 points suggested in the summary of the above-mentioned document prepared by ADB. Group 4 adopted some of the points as they stand and others with corrections and additions, as follows:

- Each country should formulate a sector development strategy, defining, inter alia, sector objectives, institutional responsibility and authority, and policies for resource allocation and cost recovery (at governmental request, ESAs may advise on the formulation of this strategy).
- All participants in sector development, both ESAs and country organizations, should be governed by this development strategy. ESAs should increase collaborative and complementary activities to enhance sector effectiveness.

- Investments should be based on effective demand and long-term sustainability by the users (through payment or through 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 realized that this strategy is attainable under good conditions, but in times of disaster, governments should intervene and play the role of provider.]

- The sector's access to capital markets and private savings should be promoted through the creation of appropriate financial intermediaries. [Group 4 feels there should be further elaboration on/expansion of the approach by ADB, since setting up financial institutions in different countries could be a difficult task.

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

- 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.

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

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

- To accelerate service to the underserved, investment priority should be to provide the maximum number of people with at least basic services before upgrading the service standards of those already receiving adequate service.

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

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

Group 4 believes that the lead agency, i.e., ADB, should present the Region's formulated strategies to the New Delhi Conference.

CONFERENCE REPORT OF WORKING GROUP 5

Chairman: Mr. Birru Ittisa, General Manaager, Water Supply and Sewerage Authority of Ethiopia
Rapporteur: Mr. Peter Sackey, Director of Rural Water Development of Ghana

Mr. Tomaro gave a brief introduction to *Strategies for the 1990s* and suggested that it be used as a guideline for developing countries to prepare their own strategies for the 1990s. He advised the participants that they should not assume the position of engineers and others working on water supply and sanitation (WSS) projects but rather that of policy- and decision-makers. After briefly reviewing the Document and the discussion topics, Group 5 chose to examine and formulate recommendations relevant to the suggested topics.

Topics 1 and 2: It was proposed that *Strategies for the 1990s* was generally in accord with the conclusions reached during the Workshop, with the following exceptions:

- The important role of non-governmental organizations (NGOs)/private voluntary organizations in institutional development should be acknowledged.
- A paragraph emphasizing the need for government action, enabling communities to implement income-generating activities, should be added.
- A shift in the role of government from promoter to provider of services needs to be incorporated.
- Regarding paragraph 9 of the summary (which calls for the inclusion of rainwater drainage and solid-waste disposal in the sector), the implication is one of policy formation rather than implementation.

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: To increase access to capital, it was proposed that: (i) communities be encouraged to form credit unions; (ii) external support agencies (ESAs)--including NGOs--consider providing grants, low-interest loans, revolving funds or guarantees to communities; and (iii) governments encourage the formation of rural banks to facilitate lending to communities for sector projects. This recommendation is in accord with the position taken by Group 5 during the Workshop.

Topic 5: Group 5 endorsed the primary role of governments in setting policies and determining priorities in the sector, and therefore encouraged the formation of a national body that would take the lead in policy formulation and the coordination of activities in the sector. These bodies would benefit from access to an information center on sector activities within the country and other African countries. Furthermore, it was suggested that collaborative meetings of African governments and ESAs take place on a regular basis, and that regional-level meetings be organized by ADB with assistance as necessary from the rural WSS offices of the World Bank/United Nations Development Programme in Abidjan and Nairobi. In addition, countries should continue to play a more important role in the activities of the Collaborative Council.

Topic 6: Group 5 concluded that the steps for securing the development, approval and implementation of sector plans and programs are appropriate. Since these steps are interconnected, ESAs should be involved at each stage, even though ownership of the plans resides with the government. To reduce the time and cost associated with the development of documents, local consultants familiar with national conditions should participate. The participants also noted that ESA financing for these activities would be considered and, at times, welcomed.

As a final comment, Group 5 expressed its gratitude to the chairman and asked the rapporteur to express his appreciation to all the organizers who made this Conference possible.

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