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DISCUSSION DRAFT

GUIDELINES FOR THE DEVELOPMENT OF WATER AND SANITATION
SECTOR STRATEGY AND ACTION PLANS FOR LOW-INCOME GROUPS

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UNDP/World Bank Water and Sanitation Program
The World Bank
Washington, D.C.

2025-0964-79511

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ISBN 7951
202.5 8960



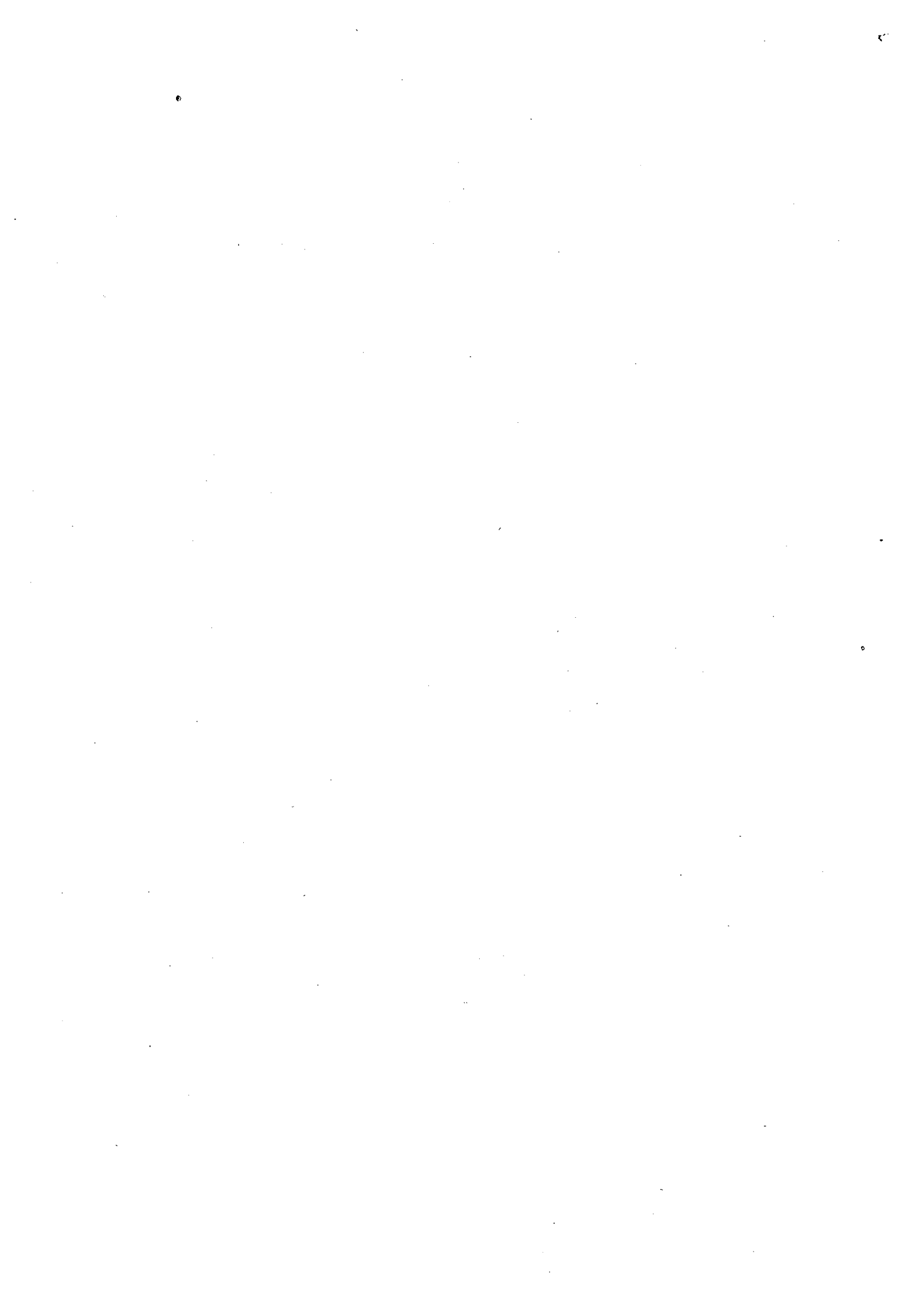
PREFACE

These draft guidelines have been prepared to summarize existing information and approaches to sector work for the field staff of the UNDP/World Bank Water Decade Program. They may well be of interest to developing countries and supporting donors in the formulation of water and sanitation sector development strategies, and could form the basis for formulating general guidelines that could be used in the collaborative framework of countries and donors.

To this end, the paper should be viewed as a draft for discussion, to which we would appreciate feedback, particularly on individual country and donor recommendations and requirements in sector analysis.

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EXECUTIVE SUMMARY

Governments, and supporting aid agencies, can only effectively develop a sector if they do so within the framework of a development strategy and coordinated plan of action. This paper proposes a methodology that can readily be used by developing countries and their supporting donor community to optimize resources and ensure complementarity in project design.

The World Bank, which pioneered sector analysis in water supply and sanitation, has changed its approach over the years. Initially, sector studies focussed on proposed loans and provided a descriptive report on the sector in which the loan was proposed. Subsequently, sector studies were developed as a tool of use to the country itself by providing an analysis of sectoral needs. More recently the sector work undertaken by the UNDP/World Bank Water Decade Program has become more of a framework for a collaborative effort between countries and donors. Other agencies, particularly those working on a small scale, because of lack of resources, have not usually carried out extensive sector analysis and have designed ad hoc projects in the absence of an overall development strategy, whereas some agencies have supported the preparation of prescriptive centralized plans that have not been fully adopted or adhered to.

In the context of a continuing collaborative framework between governments and donors, there is a need to rationalize the process of sector work (ie. the development of a sector development strategy and plan of action) for a country and to make the results available, so that the data and information can be utilized by government and donor to build complementarity into projects.

A more adaptive approach to sector work is recommended, particularly in countries where water supply and sanitation services are poor. Rather than the "top-down" planning of strategy and programs which has characterized some development efforts in the past, a "building up" process is proposed. This process has four stages: initially a position statement is prepared which determines the level of sector development in the country. Next, the position statement is used to define the critical issues of the sector. In the third stage a development strategy is formulated to address these issues based on studies and experience gained in other countries. This development strategy is then translated into an action plan in the final stage, which would have a series of complimentary activities.

1. BACKGROUND AND OBJECTIVES

1.1 Sector Work Objectives¹

There is considerable variation in the use of terminology to describe "sector work."² It is a generic term used to describe activities leading to the formulation and adoption of sound policies and strategies, and to the development and planning of (national) sector plans and investment programs, which will result in sustainable improvements in service levels.

This document is concerned specifically with the water supply and sanitation sector. In the past, large investments have been made in projects that were designed in an ad hoc manner in response to real or perceived needs. These projects usually focussed on the provision of water supply and/or sanitation facilities in an effort to raise service coverage levels. In the absence of meaningful improvement of the infrastructure to support these facilities, and with the lack of education of users to properly operate and maintain them, many projects have failed to deliver sustainable improvements.

A second major deficiency has been that projects have been prepared and implemented in isolation--as "one-off" initiatives of limited duration. These projects are typically characterized by high overhead costs (often resulting from technical assistance carried out by donor country consulting firms), limited understanding of the lessons and experience gained from other projects, lack of continuity to derive future benefit from the experience gained during implementation of the project, and the adoption of technologies and delivery mechanisms which are not well suited to sector development.

The problems described above could often be avoided if projects were formulated, planned and implemented within the framework of a clear sector development strategy.

The purpose of sector work is to, first, collect available information about the sector, then to analyze that data to determine the needs of the sector and the possible solutions to those needs, and finally to develop a strategy and action plan to implement those solutions. This sequence is shown diagrammatically in Figure 1 and described in more detail in Chapter 2. A "sector study," therefore, is a generic term used to describe the above steps. While directed toward future actions, it does not usually include an investment program other than for pilot and demonstration projects. Rather, it includes all of the prerequisites for the development of sustainable national programs.

In developing a strategy for sector development, it is useful to consider the broader picture of national development and the development process itself. Proposals must be within the realistic bounds of available resources and consistent with political priorities. It should be recognized,

¹ References to the Bibliography cite first its section (A, B, etc.), then author/date.

² See Glossary of Terms (Annex 1).



Figure 1. SEQUENCE OF SECTOR DEVELOPMENT ACTIVITIES

however, that all of this information is not always available and assumptions will have to be made about a number of issues.

1.2 Guideline Objectives

These guidelines have been prepared to summarize available information for the field staff of the UNDP/World Bank Water and Sanitation Program and to assist agencies working in the water and sanitation sector either to carry out sector work or to make use of sector studies prepared by others. They are also intended to stimulate thinking about the process of sector development and to promote a more flexible and adaptive approach.

The guidelines include the following:

- (i) a brief review of past and present approaches to sector development with a view to deriving lessons which can improve future efforts by the UNDP/World Bank Water and Sanitation Program, and by other agencies interested in adopting a similar approach;
- (ii) a consideration of the information requirements of different agencies so that future sector work by one agency can be utilized by others;
- (iii) a discussion of some of the issues of sector development presently being debated;
- (iv) guidelines for the process of undertaking sector work;
- (v) information and references including sample terms of reference for some studies.

1.3 Sector Work by the World Bank

The World Bank has led the way in developing the sector work concept over the last two decades. The earliest sector work carried out by the Bank was typically directed at supporting a proposed lending operation by providing information and data about the sector to be supported by the loan.

The detailed guidelines prepared in 1973 (B: World Bank 1973) for sector work in the water supply and waste disposal sector adopted a modified approach. Information gathering was still emphasized but the target for sector studies was decision makers at the national and local level. The involvement of both appropriate officials and sector specialists in the country in question was stressed. Sector work became a continual process for building up knowledge so that decisions in the sector would improve as a result.

After several years of use, the need was felt to complement the original guidelines in three important aspects. First, it was found that the guidelines did not sufficiently focus attention on determining the real priorities in each country's situation but provided only a checklist of

information required. As a result, sector studies tended to be long and unstructured. The second matter reflected the Bank's increasing attention to population strata and particularly the urban and rural poor. Investment strategies could not be devised to benefit these groups without identifying their current access to public services and how financial and other assistance could reach them. The third aspect was to put sector reporting requirements on a more rational footing by restructuring the report presentation. Sector reports now comprise a short summary, a main report significantly shorter than in the past, and several detailed annexes. The main report consists of a descriptive part and an analytical part and clearly focuses on identifying principal problems and constraints and the steps needed to advance development.

As the executing agency for the UNDP Water and Sanitation Decade projects, the World Bank Regional Groups (particularly the Group in East Africa) have slightly modified the approach for the preparation and implementation of a framework for water supply and sanitation sector development in that region. This approach reflects the need for rapid initial development of a sectoral framework in a number of countries and the requirements of other donors. It also recognizes that funding will come from a variety of multilateral and bilateral agencies in addition to the World Bank. Four steps are involved comprising preparation of:

- (i) a position statement which reviews the status of the sector;
- (ii) a sector issues statement;
- (iii) a sector development strategy; and
- (iv) an action plan leading to the development of an investment program.

Although all four steps could form part of a sector study, they can also form independent studies. More typically, the preparation of the position and issues statements is concurrent; and the strategy and action plan may also be prepared together. It should be noted that sector development may be at different stages in particular countries where investment programs have already been launched. Sector strategies must be tailor made.

1.4 Sector Work by Other Institutions

Activities by other institutions in the water supply and sanitation sector have been characterized by increasing collaboration. One such effort was launched in 1971 as a Cooperative Programme (CP) between the World Health Organization and the World Bank. It remained in effect until 1984 when it was replaced by a program-based, rather than institution-based, collaboration. Under this collaborative agreement, joint sector studies remain as one of the most significant achievements. They yielded detailed planning options and project proposals, and identified resource constraints. Bilateral agencies based their project support on priorities highlighted by the studies. A fairly rigid format was followed with the purpose of ensuring uniformity of treatment of water supply and sanitation in different countries.

The International Drinking Water Supply and Sanitation Decade 1981-90 provided a common set of ideals within which governments could set targets and the international donor community could provide resources, know-how and better coordination of their aid programs.

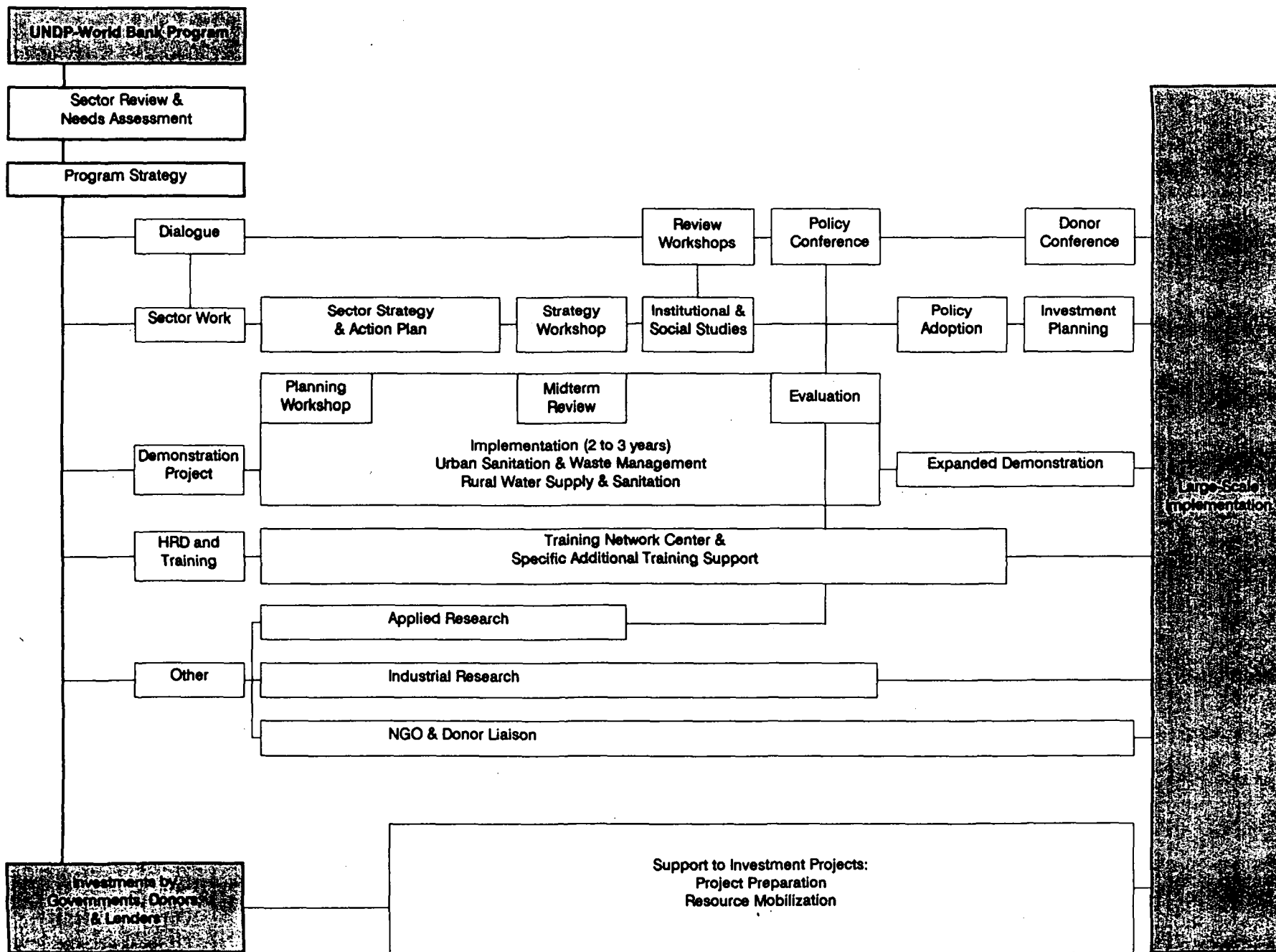
From 1978 until 1987, the UNDP and the World Bank carried out a Water and Sanitation Program, as a Decade-supporting activity, to develop the technologies and delivery systems needed to promote the extension of these services to low-income communities.

Finally, at the International Drinking Water Supply and Sanitation Consultation held in Interlaken, Switzerland, in October 1987, a call was made for a framework for collaboration of agencies through the year 2000. The aim was "to help developing countries prepare sector strategies and programs that utilize the experience, research, and development from the IDWSSD in large-scale projects."

This paper supports that aim. The experiences of the UNDP/World Bank Program provided the basis for a strategy for the remainder of the decade and beyond (B: World Bank 1988). The Program emphasizes a strategy to be applied to a number of primary focus countries. This sector development strategy, which is based on a number of parallel and complementary streams of activities, is shown in Figure 2.

Other agencies have carried out sector studies and Annex 4 provides reviews of the documents surveyed which describe those agencies' procedures and requirements. Most of the information requirements are common, and there is clearly a risk for overlap and duplication by agencies active in the same country, or alternatively, for conflict in the manner in which external support agencies design and carry out sector work. There is much benefit to be gained from collaboration in the execution of sector work, or, at a minimum, agreement on the approaches to sector work, if governments are to have a sound basis on which to attract investment finance for sector development.

Figure 2. PROGRAM STRATEGY FOR PRIMARY FOCUS COUNTRIES



SCOPE OF WORK

ZAIRE: National Rural Water/Sanitation Planning

Background

Since September 1984, WASH has assisted USAID and the government of Zaire in formulating a strategy for developing a national rural water and sanitation plan. This has included an initial assessment visit in September 1984, a policy and strategy formulation session in January 1985 and a national seminar to formally review and approve a policy and strategy document in May, 1985. These WASH assignments are documented in WASH Field Reports Nos. 135, 142 and 150 respectively.

Following the national seminar, a request for WASH assistance in the next planning step from CNAEA, the National Action Committee for the Water Decade, was made to USAID and a cable sent to S&T/H on November 1, 1985 (Kinsha 18367).

The specific assignment calls for a two-person team to make visits to Zaire to assist a seven member Zairian team in designing and preparing a national rural water supply and sanitation plan. Specifically, the team will be expected to carry out the following:

1. Phase I

- a. Refine the terms of reference for the activity
- b. Assist in determining what data need to be collected
- c. Determine the types of analysis that will be necessary after the data is collected
- d. Assist the Zairian team members to clarify their roles and responsibilities in the data collection process.
- e. Assist in identifying analytic variables for a national rural water supply and sanitation plan
- f. Assist in developing a planning model applicable to Zaire
- g. Assist in formulating an outline for the plan.
- h. Assist in developing a questionnaire for data collection for the plan.
- i. Orient the Zairians in data collection techniques and methods.
- j. Assist in developing a timetable for data collection and analysis.
- k. Assist in running a series of working meetings with the Zairian team to deal with the above points.

1. Prepare a report for USAID describing the above process and making necessary recommendations for Phase II.
2. Phase II - March/April 1986
 - m. Assist in the analysis of the data.
 - n. Assist in the preparation of the plan.
 - o. Prepare a WASH report for USAID describing the planning process and outcomes and including any recommendations for future assignments and/or follow-on activities.

ACT 219

SCOPE OF WORK
(Phase II)

Zaire: National Rural Water and Sanitation Planning

Background

This work constitutes Phase II of assistance to the National Water and Sanitation Committee (CNAEA) of Zaire for the development of a rural water and sanitation plan. Phase I for WASH occurred in January - February 1986 and involved a two-week working session in Kinshasa on plan formulation and the preparation of a report to the USAID Mission. Phase II includes a return visit to Kinshasa by the WASH consultants to assist the CNAEA in the review and revision of the draft plan. The two WASH consultants will be expected to carry out the following:

1. Review the draft plan prepared by the CNAEA, with particular attention to:
 - (a) plan priorities, programming criteria, and the selection of Priority Action zones;
 - (b) the capacity of individual organizations to achieve targets;
 - (c) coverage and support programs in light of national goals; and
 - (d) budget projections in light of anticipated resources.
2. Advise on methods of strengthening any deficiencies which may exist in the plan.
3. Advise on the final drafting of the text of the plan.
4. Prepare a WASH report for USAID describing the planning process and outcomes and including recommendations for future USAID actions in Zaire.

Detailed Scope of Work
(PHASE I ONLY)

A two-person team will spend approximately two weeks in Swaziland in the following activities:

1. Through interviews, document reviews and visits to the field, gain an understanding of the current status of WSS projects in Swaziland.
2. Analyze the WSS planning process as it now exists and recommend changes if necessary.
3. Outline a process for developing national WSS objectives.
4. Work with the National Action Committee to develop these objectives.
5. Recommend steps toward achieving these objectives.
6. Define the next step in the process, including mutual responsibilities of WASH, USAID/Mbabane and GOS.

SCOPE OF WORK

ACT 170 - PHASE II

Background

See ACT 170 - Phase I Report

Terms of Reference for Key Planning Activities

Policies and Strategies Session

The formulation of national policies and strategies should be carried out by the technical subgroup under the general direction of the NAG. It is recommended that the organization and operation of the overall session be guided by the following:

1. The NAG instructs the chairman of the technical subgroup to organize a working session in which national policies and strategies for water supply and sanitation can be formulated. In general, policies can be defined as what the government wants to achieve, and strategies can be viewed as how the government intends to achieve it.
2. The chairman of the technical subgroup organizes the working session in the following manner:
 - o Participating governmental institutions Governmental agencies represented on the technical subgroup of the NAG.
 - o Institutional representatives Senior-level officials knowledgeable in water supply and sanitation matters and capable of representing their institutions in policy matters.
 - o Size of working group Twelve officials (maximum)
 - o Meeting dates Phase I (six weeks in November-December 1985): governmental agencies send policy information to the NAG.

Phase II (1 week in January 1986): members of technical subgroup visit governmental agencies to discuss policy matters.

Phase III (2 weeks in January 1986): technical subgroup reviews information and drafts national policies and strategies.
 - o Number and duration of working sessions To be determined on the basis of information collected during Phase I and the availability of technical

subgroup members.

o Technical assistance requirements

Technical advisors in water and sanitation engineering and policy planning are needed (See Section 6.5.1)

3. During Phase I, the Chairman of the NAG requests each governmental agency having interests in water supply and sanitation to provide the following policy information by December 15, 1985.
 - a. What are the official policies of the institution in the water supply and sanitation sector?
 - b. What are the current water supply and sanitation activities of the institution?
 - c. How is the institution organized to carry out these activities? (Identify strengths and weaknesses.)
4. The chairman of the technical subgroup receives the foregoing information by December 31, 1985.
5. The chairman of the technical subgroup arranges logistical support for the intensive policy session: meeting room, secretarial assistance, supplies, and so forth.
6. The technical subgroup meets as often as necessary over a three-week period (during February 1986) to formulate national policies and strategies for the water and sanitation sector.

The recommended format for this three-week period:

Week 1: Day 1

Orientation of technical subgroup. Chairman gives working assignments to subgroup members.

Day 2-5

Subgroup members visit key governmental institutions to discuss their policies, strategies, and organization.

Week 2:

The technical subgroup meets as needed to:

1. Assemble available information on national and ministerial policies and strategies for water and sanitation (for example, decrees, official statements, internal guidelines, and so forth).
2. Review, compare, and discuss the assembled information.
3. Prepare provisional policies and strategies.

Week 3:

The technical subgroup reviews the

provisional policies and strategies with all relevant governmental ministries and prepares a draft report for the NAG. The technical subgroup also begins the planning for the national seminar to be held in April 1986.

7. The NAG reviews and approves the recommended policies and strategies and the preliminary plan for the national seminar submitted by the technical subgroup.

SCOPE OF WORK

Swaziland: Decade Planning Phase III National Sanitation and Action Plan

I. Background

A. National Seminar on policies and Strategies

The new policies and strategies for water and sanitation should be presented and thoroughly explained at a national seminar of government officials and representatives of the donor community. Government officials should attend as full participants with the opportunity to comment and discuss the new policies, while donor representatives should be limited to the role of observers. It is recommended that the national seminar be organized in the following manner:

1. The NAG instructs the chairman of the technical subgroup to organize a national seminar on the new policies and strategies. (Preliminary plans for the seminar will have been prepared by the technical subgroup during the policies and strategies meeting).
2. The chairman of the technical subgroup appoints a subcommittee to design the seminar, to make logistical arrangements, and to prepare informational materials for the participants. Six weeks should be allowed for seminar preparation (1 March - 15 April 1986).
3. The seminar should have the following format:

- | | |
|---|---|
| o Participating governmental institutions | All governmental agencies involved in the water and sanitation sector. |
| o Institutional representatives | Senior officials involved in policy, planning, technical design, management, or construction. |
| o Donor representatives | United Nations' organizations, NGOs, and principal bilateral agencies (as observers). |
| o Size of seminar | Fifty to 100 participants. |
| o Seminar dates | One week's duration in April 1986. |
| o Technical assistance requirements | One seminar facilitator |
| o Goals of Seminar | 1. To promote a general understanding of new policies and strategies. |

2. To encourage donor support for new policies and strategies.
3. To assemble background information for the short-term action plan.

B. Short-term Action Plan

The national seminar should be followed immediately by the preparation of a short-term action plan for the period 1987 through 1988. Information collected for and presented at the national seminar should form the basis for the plan. At the least, the short-term action plan should include all water supply and sanitation activities anticipated by government and nongovernmental organizations over the plan period. The plan also should indicate institutional responsibilities, coverage targets, and estimated budgets, it is recommended that the plan be developed in the following manner:

1. At the conclusion of the national seminar, the chairman of the technical subgroup convenes a meeting of the subgroup to prepare the short-term action plan.
2. The chairman assigns various planning tasks to members of the technical subgroup.

3. The planning session takes the following form:

- | | |
|---|--|
| o Participating governmental institutions | Governmental agencies represented on technical subgroup of the NAG. |
| o Institutional representatives | Senior-level officials knowledgeable about planning water supply and sanitation activities. |
| o Size of planning group. | As needed. |
| o Session dates | One week in May 1986. |
| o Plan period | Two years (1 April 1986 - 31 March 1988). |
| o Plan outline | <ol style="list-style-type: none">1. National goals and strategies2. Institutional responsibilities3. Immediate water and sanitation needs4. Existing and anticipated water and sanitation programs5. Schedule of Activities6. Assistance requirements7. Estimated budgets |

o Technical assistance requirements

One water and sanitation planner.

II. Specific Scope of Work

A. Consultant for Designing and Implementing a National Seminar

1. The consultant will spend approximately three weeks in Swaziland working closely with the NAG and technical subgroup in preparing and presenting a national seminar on water supply and sanitation policies and strategies.

2. The consultant should be a seminar planning specialist with the following expertise:

Extensive experience in planning and presenting workshops, seminars, and conferences in developing countries and in training small group discussion leaders for such seminars. Demonstrated capability of working closely with senior host country officials.

3. The consultant shall assist the technical subgroup and a seminar co-facilitator counterpart in:

a. Defining the overall goal and specific objectives of the seminar.

b. Preparing a seminar design which addresses the questions of who, what, when, where, and how the seminar will be implemented.

c. Training small group discussion leaders in group discussion techniques.

d. Implementing the seminar.

e. Preparing a report to be left with the technical subgroup that describes the seminar planning, design, and schedule and lists recommendations for future seminars.

B. Consultant for Preparing a Short-term Action Plan

1. The consultant will spend approximately two weeks in Swaziland attending the national seminar and working closely with the NAG and technical subgroup in preparing a short-term action plan for water supply and sanitation following the national seminar.

2. The consultant should be a water/sanitation planner with the following expertise:

Extensive experience in planning water supply and sanitation activities, preferably in Africa. He/she must have had experience in program planning at the national level and have demonstrated capability to work closely with senior host government officials.

3. The consultant shall assist the technical subgroup in:

- a. Defining what are short-term action plans
- b. Designing a schedule for developing the action plans
- c. Preparing the action plans
- d. Preparing a report to be left with the technical subgroup, which describes the process of developing the plans, lists the plans, and makes recommendations for future planning activities.

Study of Potential Application for Wastewater
Reclamation and Reuse in EMENA Countries

Terms of Reference for Phase I - Desk Review

Introduction

1. For the water scarce countries of the Middle East and North Africa, along with extensive zones of southern European countries, the reuse of reclaimed wastewater represents a water resources management policy of particular importance to the region. The principle of reclaimed wastewater reuse has been accepted by many of the countries in the region but few of the countries have implemented sound policies and guidelines regarding: cost recovery; effluent quality, including its surveillance and environmental health impact; technologies for treatment and irrigation; operation and maintenance and crop choice and control. A considerable amount of research and study has already been completed, both on a global and regional basis, on wastewater reuse but to date there has been no comprehensive state of the art review that would enable the countries of the region to define strategies with respect to the reuse of reclaimed wastewater.

Objectives

2. (a) Overall Study. These TOR cover the work of consultant to prepare the Phase I review that forms part of an overall study that will provide the basic country level information required to develop a strategy on municipal and industrial wastewater reclamation and reuse (reference attached Initiating Memorandum of April 29, 1988).

The study will provide information on legal, technological, environmental, social economic and financial, institutional and policy issues which would need to be addressed by the strategy. It will also give an overview of current country policies, existing and planned wastewater reclamation and reuse projects, the potential for reuse projections, identify issues and define the need for Bank assistance for future wastewater reclamation and reuse projects.

- (b) Present Study. The objective of the first phase is to carry out a desk review of existing reports and other documentation, completed with interviews of Bank staff to collect as much information as possible. Coupled with this, other data will be sought from regional data sources so that a report can be prepared that evaluates and summarizes the available information and which:
- (i) identifies potential cooperation between institutions to implement the second phase;

- (ii) identifies the issues in the reclamation and reuse of wastewater in EMENA region countries;
- (iii) develops a first approach to a reclamation and reuse strategy;
- (iv) defines countries where additional studies should be held; and
- (v) prepares questionnaires for additional information.

Work Schedule and Reports

3. In line with the above objectives, the consultants will visit the Bank's headquarters in Washington, D.C., for a period of about four weeks, starting about June 27, 1988, in order to carry out the above tasks. At the end of the period, they should have completed a draft of their findings and submit it to the Division Chief, EMTIN. In addition to the presentation of their major findings, the consultants should present a tentative time schedule and TOR for the Second Phase review to complete the overall study. Bank staff comments will then be forwarded to the consultants in due course and the Bank will reimburse about two days input of each consultant's time in his home office to complete the report.

DRAFT TERMS OF REFERENCE

STRENGTHENING HUMAN RESOURCES DEVELOPMENT STRATEGY FOR THE WATER AND SANITATION SECTOR IN BANGLADESH

Following the discussions between the UNDP/World Bank Decade Program and the Danish International Development Agency (DANIDA) in July and August, 1988 and in consultation with the Government of Bangladesh (GOB) and other external support agencies, a mission is planned in Bangladesh to assess the HRD situation in water supply and sanitation for the low-income urban and rural population where affordability and effectiveness of investment can be enhanced with stronger local community participation and health and hygiene education. It will recommend a strategy for strengthening the internal capacity of sector and educational institutions to carry out training and other HRD activities on low-cost water supply, sanitation and waste management in collaboration with external support agencies. The mission will contribute towards defining the scope and strategy for the continued activities of the UNDP/World Bank Decade Program in Bangladesh on Human Resources Development (HRD).

1. OBJECTIVES

- a. Development Objectives. Supporting the goals of the International Drinking Water Supply and Sanitation Decade (IDWSSD), this mission seeks to contribute to the promotion of needed improvements in both the effectiveness of water supply and sanitation investments and the extension of service coverage, particularly to low-income groups in rural and urban fringe areas of Bangladesh. Sanitation will include solid waste management.
- b. Immediate Objectives. The mission has three immediate objectives:
 - (1) to review existing assessments and sector studies with emphasis on the training and development needs of sectoral institutions involved in planning and implementing water supply and sanitation projects for low-income urban and rural communities;
 - (2) to recommend strategies to strengthen the capacity and linkages among local training and education institutions to implement HRD interventions, including health and hygiene education and information dissemination; and,
 - (3) to explore areas of cooperation among local authorities and external support agencies in the field of Human Resources Development (HRD).

2. OUTPUTS

- a. Output 1: Training and Development Needs Assessment.
 - (1) The mission will identify key sector issues and focus on those

relevant to HRD in low-cost water supply and sanitation. It will review and report on:

- (a) GOB policies, plans, programs and strategies for meeting the water supply, sanitation and waste disposal needs of the low-income urban and rural population; the perceptions of key decision makers and practicing engineers towards low-cost technologies and approaches.
 - (b) Major Bangladeshi experiences on the use of low-cost technologies and approaches in water and sanitation projects from which valuable lessons can be drawn;
 - (c) The effectiveness of the government agencies in reaching the communities.
- (2) The mission will analyze current policies and practices in the sector and its impact on the management and development of human resources. In particular, the mission will analyze:
- (a) The estimated personnel complement needed by the sector distributed by agency, functional area, job category and location. Projections, if available, should also be analyzed.
 - (b) The existing planning instruments of agencies, such as organizational and staffing charts; personnel policies and practices (recruitment and selection, pay and benefits, career development, performance evaluation, etc.).
- (3) The training demand should start with the study of the performance of the sector agencies and their future programs. Some current performance deficiencies may be due to absence of or inadequate HRD support. Some agencies may express interest in receiving training assistance. The nature of the felt training needs and its implications should be described. The mission will analyze information on present and planned training activities. It should be emphasized that the mission seeks to strengthen institutional capacity to implement systematic training and development activities, not implement specific training programs.
- b. Output 2: Assessment of Institutional Capacity for Training and Development.
- (1) The mission will review the current training opportunities and resources, in the agencies' own training schools, in formal educational institutions, and informal training activities (on-the-job training). Their relevance to the demand should be analyzed, and their shortcomings and the bottlenecks identified. Cooperation between and among the sector agencies and formal educational institutions should be assessed.

c. Output 3: Development Strategy Recommendation.

- (1) Based on the training needs and capacity assessment, the mission will identify issues related to HRD and make recommendations to be submitted to the GOB. The strategy should address the HRD needs of the sector by building up the training capacity of Bangladeshi sector agencies and formal educational institutions. The mission should assess the feasibility of establishing a network center at the Bangladesh University for Engineering Technology to be affiliated with UNDP/World Bank Project INT/86/027: International Training Network for Water and Waste Management (ITN).
- (2) The participation of local counterparts is most crucial during the strategy formulation. Local counterparts should play an active role at this stage so that maximum cooperation and agreement can be achieved during implementation.
- (3) Among others, the strategy issues to be addressed include:
 - (a) how to strengthen HRD linkages and co-operation among BUET, the sector agencies (particularly LGEB, DPHE, and the WASAs), other education institutions and NGOs;
 - (b) how the health and hygiene education efforts nationwide can be effectively augmented by the network center;
 - (c) how to strengthen the software orientation of BUET, being primarily a technical university;
 - (d) how to coordinate and monitor the preparation and use of appropriate training materials which are being developed or are available with various agencies.
- (4) The mission should also discuss HRD support with other United Nations agencies (UNDP, UNICEF, WHO), and make recommendations for constructive and effective collaboration. The strategy should be consistent and support the integrated Health and Hygiene Education, Water Supply and Sanitation approach promoted by UNICEF and other donors.
- (5) The strategy should be integrated within the overall UNDP/Bank Decade regional (South Asia) and country framework envisaged for Bangladesh and should advise on areas of sector support by the Program's Regional Water and Sanitation Resource Group (RWSG).

3. Partial list of institutions and agencies to be consulted.

- a. Department of Public Health Engineering
- b. Local Government Engineering Bureau
- c. Ministry of Local Government, Rural Development and Cooperatives
- d. External Resources Department, Ministry of Planning
- e. Dhaka Water Supply Authority
- f. Chittagong Water Supply Authority

- g. Bangladesh University for Engineering Technology
- h. UNDP/World Bank Project Team (RAS/86/160 and INT/87/013)
- i. Netherlands Mission
- j. DANIDA Mission
- k. UNDP Resident Mission
- l. UNICEF Representative
- m. WHO Country Office
- n. World Bank Resident Mission
- o. NGO Forum
- p. Bangladesh Institute of Technology

4. Implementation Notes

- a. The mission is expected to last for about 4 - 6 weeks in the fourth quarter of 1988.
- b. Indicative Schedule
 - (1) Draft Terms of Reference is circulated for comments, August.
 - (2) TOR is finalized, September. Comments expected by mid-September.
 - (3) A proposal is formally submitted to DANIDA for consideration by end of September.
 - (4) Consultant/s selection to be done by DANIDA in October.
 - (5) Mission will be conducted in November.
 - (6) Report Preparation and Submission to GOB.
- c. Findings and conclusions may, upon clearance by GOB, be presented and discussed during a trainers' workshop planned in late January, 1989.
- d. Prior to implementation, data shall be collected by the UNDP/Bank Project Team located in Dhaka. Technical and administrative support will be arranged by the Decade Team.



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**LEGISLATION STUDY FOR REORGANIZATION OF THE
WATER AND SANITATION SECTOR IN ZAMBIA**

TERMS OF REFERENCE

Objectives

The objective of this study is to prepare the legislative framework necessary for the reorganization of the water and sanitation sector in Zambia and to draft new legislation or revisions and amendments to existing legislation, as necessary.

Scope of Work

In achieving the above objective the consultant will be required but not necessarily be limited to the following:

- (a) review the existing legislation on the basis of which the various existing institutions in the sector are operating;
- (b) review the organizational proposals and operational procedures being developed by other consultants for the reorganization of the sector;
- (c) identify consequential changes in existing legislation or drafts under consideration; and
- (d) draft all necessary amendments to existing legislation or prepare drafts of new statutory instruments to effect the transfer of powers, functions and responsibilities from existing organizations to the ZWRA and ZWASCO.

TARIFF STUDY

Objectives

The objectives of the study are to:

- (a) develop and analyse alternative tariff strategies as a basis for implementing a policy of increasing financial self-sufficiency for the sector;
- (b) analyse and recommend satisfactory levels of cost recovery which ensures regular supply of water at rates affordable to the poor; and
- (c) integrate the tariff system with the accounting system.

Scope of Work

In achieving these objectives the consultant will be required but not necessarily be limited to the following:

- (a) identify all costs associated with the provision of water supply (and where appropriate, sewerage) services and establish tariff levels on the basis of marginal costs;
- (b) investigate the application of alternative tariff structures including progressive tariffs and different tariffs for different regions;
- (c) analyse the socio-economic environment to determine the ability and willingness to pay of different consumers groups in different regions;
- (d) establish the current levels of Government subsidies to the sector;
- (e) develop and recommend practical tariff strategies including an implementation strategy; and
- (f) recommend procedures for subsequent tariff adjustments.

ASSET VALUATION STUDY

Objectives

The objectives of this study are to:

- (a) establish an opening balance sheet for ZWASCO;
- (b) develop a system to achieve an equitable balance between existing organisations in their equity contributions to ZWASCO; and
- (c) establish a system of recording assets and depreciation.

Scope of Work

In achieving these objectives the consultant will be required but not necessarily be limited to the following:

- (a) establish a value of the fixed assets owned by the existing sector organisations as at December 31, 1989 based on upto date engineering data and unit cost estimates;
- (b) establish asset lives used to calculate depreciation for the various categories of assets;
- (c) establish the estimated net book values of all assets;
- (d) establish a methodology for assessing and recording on an annual basis the value of all assets and depreciation.

- (iii) incorporation of all subsidiary accounting systems (i.e. debtors, creditors, loans, debts) kept in any department;
- (iv) provision of regular financial reports and statements for senior officers and management;
- (v) preparation of all budgets and subsequent enforcement of approved budgets;
- (d) develop systems for ZWASCO and ZWRA to meet the following internal audit systems:
 - (i) all payments including contract settlements are authorised lawfully and correctly;
 - (ii) all incomes due are properly recovered and recorded;
 - (iii) all funds are properly invested;
 - (iv) all cash inventories are accounted for;
- (e) develop systems for ZWASCO and ZWRA for financial control by:
 - (i) outlining and recommending a code of internal financial regulations;
 - (ii) assisting in establishing efficiency audits;
- (f) develop systems for ZWASCO and ZWRA to meet the following procurement functions:
 - (i) purchasing practices, preparation of specifications, evaluation of tenders and record keeping;
 - (ii) warehousing and store practices and control;
 - (iii) standard procedures and documentation for procurement, inventory and equipment management systems.

FINANCIAL SYSTEMS STUDY

Objectives

The objectives of this study are to:

- (a) determine the current financial status of the water and sanitation sector; and
- (b) develop financial management, accounting and management information systems for ZWASCO and, to the extent required, for ZWRA.

Scope of Work

In achieving the above objectives the consultant will be required but not necessarily be limited to the following:

- (a) carry out a detailed assessment of the existing financial status of the water and sanitation sector including capital investments, recurrent costs and revenue collection;
- (b) develop systems for ZWASCO and ZWRA to meet the following treasury functions:
 - (i) efficient and prompt assessment, demand, collection and enforcement of all charges, fees and other revenues due;
 - (ii) payment (after due checking and certification) of all liabilities (including salaries);
 - (iii) correct recording and efficient management of all liquid assets (cash, bonds, inventories);
 - (iv) permitting assessment on the adequacy for financing of all expenditures;
- (c) develop systems for ZWASCO and ZWRA to meet the following accounting functions:
 - (i) efficient accounting systems for income and expenditures and assets and liabilities;
 - (ii) comprehensive records of all assets including their depreciation;

Tentative Staffing Plan and Timing^{1/}

Skill Category

| | <u>M A N M O N T H S</u> | | |
|---|--------------------------|----------|-----------|
| | Phase I | Phase II | Phase III |
| 1. Project Manager (Engineer/Management Specialist) | 2 | 5 | 3 |
| 2. Public Administration/ Organization Specialist | 2 | 3 | |
| 3. Financial Analyst/Account Specialist | 2 | 5 | 3 |
| 4. Accounting System/Computer Specialist | | 5 | 3 |
| 5. Engineer (Operation and Maintenance Specialist) | | 2 | 3 |

2 12 = 30

^{1/} Both the skill categories and the time to be spent by them is indicative. This is to be reviewed by the consultant and modified as found appropriate.

Staffing and Timing

15. A tentative staffing plan and the time expected to be spent by each specialist in each phase of this study is in Attachment II - Annex 4. The Consultant is expected to review them and suggest any modification based on its proposal.

16. The list of existing studies and reports to which the consultant should refer to are:

Organization charts and functional guides WSSA

Organization charts and staffing plans, WSSA

Water supply & Sewerage Authority Establishment
Proclamation No.219 of 1981

National Water Resources Commission Establishment
Proclamation No. 217 of 1981

Ethiopian Water Works Construction Authority Establishment
Proclamation No. 190/1980.

IMPLEMENTATION OF THE STUDY

10. The consultant will be directly accountable to the General Manager of WSSA and would work with counter-parts from the organization & Methods and Training Services, WSSA
11. For review of matters related to Phase 1 an inter-agency steering committee would be established. For review of matters related to Phase 2 a steering committee would be established in the WSSA.
12. The following time schedule is proposed for the implementation of the study:
- (i) Phase 1 would be completed within 2 months after signing of the consultant agreement; review and approval by the inter-agency steering committee within one month. To avoid any interruption the consultant will proceed with Phase 2 while the review is taking place;
 - (ii) Phase 2 would be completed 5 months after approval of phase 1; review and approval by the WSSA steering committee within one month; and
 - (iii) Phase 3 would commence after approval of Phase 2 with scope of work to be decided upon accordingly.
13. The consultant should submit the following reports:
- (i) interim report covering Phase 1,
 - (ii) for Phase 2 progress reports covering items under para 6,
 - (iii) final report and manuals covering Phase 1 and 2; this report is to be completed one month after approval of phase 2;
 - (iv) for phase 3 monthly progress reports to be based on targets as indentified.
14. The following services are to be provided by WSSA to the consultants:
- (i) provision of office space furniture and secretarial staff;
 - (ii) provision of the following equipment;
 - 1 Car and 2 Micro-computers/wWord Processors
 - (iii) available maps, surveys, reports and copies of previous studies on related subject matter. Upon completion of their duties the consultant shall return such documents to WSSA.

construction projects including the establishment of guidelines for provisional and final acceptance of completed projects.

H. Field Operations and Maintenance

1. Examine in detail WSSA's field practices associated with the installation, operation and maintenance of utility distribution and collection systems.
 2. Assess adequacy of treatment plant operations and maintenance levels.
 3. Develop and later initiate the implementation of operation management system, maintenance management system, and construction system for source development, treatment, distribution network and related works.
7. Based on studies in the above areas the Consultant would be expected to prepare the following manuals:
- Manual for Organization Set-up and Staffing Plan
 - Personnel Management Manual (including position, classification, pay plans etc.)
 - Financial Management Manual
 - Equipment and Supplies Management Manual
 - Procurement Manual
 - Operational and Maintenance Manual (Field)
 - Construction Manual
 - Project Study and Design manual (Project Preparation Manual)
8. In addition the consultant is expected to produce:
- Man-power Development and Training Plan (Item B)
 - Tariff Study (Item D).

Phase 3

9. This phase would cover the implementation of proposals made and training of selected WSSA Staff in the use of the various manuals prepared under Phase 2. The extent of Phase 3 will be decided at the conclusion of Phase 2. Thus for phase 3 the consultant contract is proposed to include, as a contingency, provisions for:

- Organizational/Management expert;
- financial management and accounting expert;
- accounting system/computer specialist, and
- operational and maintenance expert.

- 3 -

2. Identify the management information needs, develop and initiate the implementation of new systems and procedures for long range financial planning, budgeting, accounting, financial evaluation and reporting.

D. Revenue Management

1. Review and examine the various existing sources of WSSA revenues in light of adequacy and reliability.
2. Review WSSA's financial structure, assess its adequacy and recommend measure for strengthening.
3. Examine the level and structure of the existing tariff, and the criteria employed in their determination.
4. Forecast the long range financial needs of WSSA and recommend relative contribution of various sources in the light of WSSA's financial structure.
5. Develop criteria for various tariff structures, and recommend the most appropriate tariff structure for the realization of the long range objectives of WSSA.

E. Supplies, Procurement and Equipment

1. Examine purchasing practices, preparation of specifications, evaluation of tenders and record keeping.
2. Review warehousing and stores-practices including inventory, issuance, distribution and controlling.
3. Develop and later implement standard procedures and documentation for procurement, and inventory and equipment management systems.

F. Pre-Construction Studies

1. Review existing project preparation, studies, design and document preparation practices.
2. Develop and later initiate the implementation of standardized project study and design management systems (pre-construction management systems).

G. Construction Control Activities Study

1. Devise methods of reporting to top management of the Authority the performances of construction firms with a view to maintaining close follow-up of the ongoing construction projects and finding out their weaknesses and strengths for prompt management action.
2. Develop methods and procedures for the efficient and effective inspection and quality control of work-in-progress of water supply and sewerage

5. **Regarding WSSA:**

- (i) an overall review of functions, duties and responsibilities at national, regional, district and municipal/village levels with preparation of proposals for improvements;
- (ii) review of existing organizational framework with analysis and preparation of alternative organizational structures (to cover all activities) at different levels. This should also take into account feasible options on decentralization;

Phase 2

6. Phase 2 refers only to WSSA and the task of the consultant shall include the following:

A. Organization Structure

1. Examine the internal organization and staffing patterns;
2. Assess work flows and analyze management processes used in the allocation of human, physical and financial resources;
3. Review and analyze the level of employee productivity and suggest means to improve them; and
4. Based on conclusions reached (See under 5 (ii)) prepare a detailed organizational structure for the WSSA Head Quarter, Regional and Provincial Offices containing detail down to the level of units; and develop the systems required and later initiate the implementation of the same.

B. Personnel Management

1. Determine duties, responsibilities and qualification requirements for all positions of the Authority identified under the Organizational structure.
2. Establish position titles and prepare relevant job descriptions.
3. Work out a manpower development plan, identify training needs and outline a training programme for the Authority.

C. Financial Management and Accounting System

1. Review existing financial policy and management pertaining to the following activities: long range financial planning, budget preparation, property and cost accounting, financial evaluation, financial control, audit and reporting.

ETHIOPIA
Water Supply and Sewerage Authority (WSSA)
Terms of Reference for Organization and Management Study for WSSA

1. The Consultant shall review the existing situation within WSSA and its relationship with all other authorities concerned with the water supply and sewerage sector and develop and initiate the implementation of organization and management systems for all activities of WSSA required to enable WSSA to fulfill its ascribed duties.

2. The study is proposed to be executed in three phases which are further elaborated in the following paras. The major objectives under these phases are:

- (i) under Phase 1 sufficient background data should be prepared and analysed to enable the Government to make decisions on proposed sector development and organizational development for WSSA;
- (ii) under Phase 2, based on decisions reached under Phase 1, appropriate systems for the operation of WSSA should be developed including the preparation of necessary manuals; and
- (iii) under Phase 3 systems and manuals prepared and agreed under Phase 2 should be implemented.

SCOPE OF WORK

3. The scope of work should include but not necessarily be limited to the activities outlined below.

Phase 1

4. An overall review of inter-relationship between concerned sector organizations, the relevant legal framework and proposals for improvement in the following areas:

- (i) investment planning and approval;
- (ii) investment financing, budget allocations, flow of funds, and lending terms and conditions;
- (iii) water sources development;
- (iv) division of responsibility between project implementation, construction management and works operation and maintenance; and
- (v) procedures on procurement of equipment and supplies and contracting for civil works.

**PREPARATION OF GUIDELINES AND MANUAL
FOR OPERATIONS AND MAINTENANCE**

TERMS OF REFERENCE

Objectives

The objectives of the study are to improve the efficiency and effectiveness of current operational and maintenance standards by developing standardised methods and guidelines for the operation and maintenance of water supply and sanitation facilities.

Scope of Work

In achieving these objectives the PIU will be required but necessarily be limited to the following:

- (a) examine in detail the current field practices associated with the installation, operation and maintenance of water supply and sanitation facilities;
- (b) assess the adequacy of operation and maintenance levels and identify in detail the causes of any inadequacies in terms of manpower and financial resources;
- (c) develop systems of construction management, operation management, and maintenance management for the various types of ZWASCO operations;
- (d) prepare manuals for management of construction, operation, and maintenance for various types of ZWASCO operations;
- (e) identify in detail the levels of resources necessary for proper operation and maintenance;
- (f) integrate the systems developed into the overall organization of ZWASCO; and
- (g) determine any additional needs for technical assistance for implementing the necessary improvements.

A critical component in working toward the development of a water and sanitation sector strategic plan is the data collection and analysis work which is often done by consultants or groups of experts assembled by the development institution. In this annex we have assembled some typical Terms of Reference (TOR) for studies relevant to the development of the water and sanitation sector strategy described in these guidelines.

The TORs in this annex were selected based on the quality of the reports produced based on them, however it is important to stress that there is not necessarily a direct correlation between the TOR and the quality of the resultant product, which obviously depends on many factors such as the ability of the consultants, national Government counterparts, budgetary resources, time, availability of data, structure of the consultant contract and how well the contract was supervised.

Annex
starting
page no.

Title of Terms of Reference

| | |
|----|---|
| 2 | Zambia, Preparation of Guidelines and Manual for Operations and Maintenance |
| 3 | Ethiopia, Organization and Management Study for WSSA |
| 10 | Zambia, Financial Systems Study |
| 12 | Zambia, Asset Valuation Study |
| 13 | Zambia, Tariff Study |
| 14 | Zambia, Legislation Study for Reorganization of the Water and Sanitation Sector |
| 15 | Zaire, National Rural Water/Sanitation Planning (WASH - Scope of Work phase I and II, activity 219) |
| 18 | Swaziland, Key Planning Activities (WASH scope of work phase I, II and III, activity 170) |
| 26 | EMENA, Wastewater Reclamation and Reuse in EMENA Countries, Phase I (desk review) |
| 28 | Bangladesh, Strengthening Human Resources in Development Strategy for the Water and Sanitation Sector in Bangladesh |

reviews Grover's 1981 guidelines which were proposed to the World Bank for a water and sanitation project identification report. The chapter also reviews the 1981 WHO document on their Project and Programme Information System.

Another review is of the 1980 guidelines proposed for USAID's Near East Bureau, for preparation of a Project Identification Document. The document proposes the following four stages: (1) familiarization with water/sanitation officials and donor activities; (2) communication with host country government agencies to determine water and sanitation plans, resources, and target areas; (3) visits to field offices, target areas, current projects, to assess level of need, government and consumer commitment, donor investments, and sector organization; and (4) a review of project alternatives, using the USAID "Logical Framework." Two checksheets are provided with these guidelines, but no recommended analytical procedure is provided.

III. Non-Governmental Organizations (NGOs)

A. CARE

[From "Multi-Year Plan, Part I: Statement of Socio-Economic Status; Part II: Statement of Mission Strategy (or Focus, Problems and Priorities)."]

This report comprises guidelines for a multi-year plan, a document to be prepared by CARE field missions (not specifically for any one sector of activity).

Part I is an overview of the socioeconomic and political setting in the country, followed by a needs assessment of basic human problems confronting the poorest segment of the population. Comparisons should be made with other countries of the region, and trends in major development indices should be identified and discussed. Socioeconomic conditions should include information on: health, nutrition, education, agriculture, employment, infrastructure in rural and urban poor areas, habitat and environmental conditions and also statistical indicators (such as life expectancy, nutritional status, population growth, literacy rate, rate of inflation, strength of currency, land ownership ratios, percentage of population with access to safe water, etc.).

Part II is a statement of mission strategy (or "focus, problems, and priorities"). Priority needs or problems are established, and CARE's approach to the problems given.

and guidelines for future water supply work in rural areas are discussed in this paper.

D. Kreditanstalt für Wiederaufbau/Federal Ministry for Economic Co-Operation, Federal Republic of Germany (KfW/BMZ)

[From "Water Supply and Sanitation Projects in Developing: 'Sector Paper'--Guidelines for the Planning and Implementation of Bilateral Cooperation Projects of the Federal Republic of Germany in the Drinking Water and Sanitation Sector," German Federal Ministry for Economic Cooperation, Bonn, May 22, 1984.]

The significance of the sector in the development process, the difficulty of attaining Decade targets and necessary adaptation of those targets are covered in this publication. It also lists criteria for project selection and design.

D. Sarsis Development Cooperation (SDC)

[From "Water Supply and Sanitation Projects in Developing Countries: 'Sector Paper'--Guidelines for the Planning and Implementation of Bilateral Cooperation Projects of the Swiss Development Cooperation in the Drinking Water Supply and Sanitation Sector," Swiss Federal Department of Foreign Affairs, Berne, January 1987.]

As did the German paper, this work discusses the sector's significance in development, the problems in achieving Decade targets and resulting adaptation of those targets; it also gives criteria for project selection, planning and design.

*

[From "Guide-lines for the Preparation, the Execution and the Evaluation of Drinking Water Supply and Sanitation Projects in Developing Countries" ("Blue Paper"), Swiss Federal Department of Foreign Affairs, Berne, January 1987.]

These guidelines include conclusions of a study of all SDC wss projects; it was revised and discussed in detail by the AGUASAN group in Switzerland. Important facts to be considered in the preparation, execution and evaluation of water and sanitation projects are summarized.

E. U.S. Agency for International Development/Water and Sanitation for Health Project (USAID/WASH)

[From Social and Economic Preconditions for Water Supply and Sanitation Programs, WASH Technical Report No. 10, November 1981.]

The WASH report discusses social and economic preconditions that influence the outcome of programs setting up community water and sanitation projects. It proposes a five-step model for program formulation and project identification: problem identification, socioeconomic status, level of technology, support conditions, and benefit potential. Each step is to be reviewed before proceeding to the next category.

Chapter 3, "Literature Review of Preconditions for Successful Programs,"

B. Danish International Development Agency DANIDA)

[From "Project Guidelines: Appraisal, Planning," Copenhagen, March 1985.]

DANIDA's guidelines cover the background, purpose, approach, and standard outline for an appraisal mission report. They also discuss project implementation planning, its purpose, the planning process, and the plan of operation.

The appraisal report outline calls for the following **general sector background** information:

- the sector's significance in the national plan;
- development policies affecting the sector and the project;
- links to other sectors and projects affecting the implementation and continued operation of the project; and
- other external support to sector.

Sector-specific background for all projects should include organizational issues, existing and planned capacities compared with demand projects, and needs and the rehabilitation potential for existing capacities. It should also list the technological options for construction activities and equipment; the availability and cost of inputs, local and foreign; manpower needs, availability and development requirements; and the maintenance and service situation as well as the operational conditions.

For projects that are directly productive, background should cover the branch's structure and ownership pattern, production costs and production methods. The market situation should be explained, including the organization of marketing and distribution. Pricing, import/export, and competition from other products should also be mentioned.

Under social and physical infrastructure projects DANIDA lists desirable and realistic service levels; policies concerning tariffs and charges; and existence and enforcement of laws concerning proper use of public facilities.

Background information for the project area should contain population and living conditions; natural conditions; resources, development potential and constraints; and administration.

Information to be included under "project proposal" and "project analysis" touches on other important issues such as manpower development, institutional analysis, and both socioeconomic and environmental analyses of project impacts. This would imply some assessment of the overall situation before the project proposal.

C. Swedish International Development Authority (SIDA)

[From "Water Strategy: Water Supply Programmes for Rural Areas," Stockholm, January 1987.]

SIDA's strategy in this field (target groups and goals), past experience,

with low socioeconomic development and lacking in resources for program planning and implementation.

*

[From IDWSSD: Project and programme information system, Division of Environmental Health, Geneva, April 1983 revision.]

This paper presents the main guidelines for using project data sheets in the identification of projects for external funding. Project data sheets are one-to-two page summaries of the project, its objective, responsible agency, institutional support, duration, estimated cost, tentative financing plan, financial strategy, expected outputs and benefits, and so forth.

(Note that these project data sheets have been used in sector studies to propose specific studies as well as actual "projects," thereby constituting an action plan of sorts. Example: March 1982 WHO/UNDP Pakistan: water supply and sanitation sector study.)

II. BILATERALS

A. Canadian International Development (CIDA)

[From "Water, Sanitation and Development: Water and Sanitation Sector Development Issues Paper," July 1988.]

This paper discusses sector challenges, Canadian resources, CIDA's experience in the sector, lessons learned, and gives CIDA's six objectives and 24 strategies.

*

[From Eau et assainissement: Considerations strategiques de developpement de l'ACDI, Direction generale des services professionnels, Mai 1988 (French only).]

Overall sector problems are discussed, as well as sector links with Canadian development philosophy and with other sectors. The paper also addresses Canadian resources in the sector, current projects, activities of the main international donors in the sector, lessons to be learned, and CIDA's objectives and strategies.

Included among lessons learned from past experience is the importance of demonstration, consolidation, and expansion. A successful example of this approach is CIDA's rural water supply work in Malawi.

Their work in Cote d'Ivoire led to the conclusion that the planning process should be shortened, so that villagers' needs can be addressed as they are expressed.

D. World Health Organization (WHO)

[From "Proposed Methodology for Carrying Out Rapid Assessments," memorandum from Director of EHE, Geneva, June 29, 1977.]

In this memorandum, rapid assessments are intended as assessments of each country program.

Annex I comprises a blank form requiring data on: (1) community water supply (service levels for rural and urban); (2) excreta disposal (technologies and service levels for rural and urban); (3) and (4) investments (internal and external) made in the sector; and (5) estimated per capita costs for each subsector.

Annex II is a guide for discussion with governments. It includes information on (1) urban/rural population (2) institutions involved in the sector; (3) policy and planning aspects; (4) general evaluation of ongoing and planned programs and projects; (5) constraints to sector development (financial and other: limited water resources, human resources problem, institutional and legal framework, condition of existing facilities, etc.); and (6) suggestions for international collaboration.

Annex III is an analysis of ongoing programs (including market survey, industry survey, planning/programming survey, sector prospects).

*

[From "Data Requirements and Information Transfer," in final report of Working Group on Pre-Investment Planning for Water Supply and Sewerage Development, Vol. II, Manila, 10-15 Oct. 1977, WHO/WPRO staff paper.]

This WHO report discusses the need to compile, classify and analyze relevant data that will serve as the basis for sector planning, as well as an evaluation of achieved progress, impact and performance. The following major categories of data classification are suggested:

- general information (demographic, geographical, health, social, historical, cultural)
- economic and financial information
- technological information (including design criteria and unit costs)
- institutional and administrative information (including legal and policy information, and manpower information).

*

[From "Issues Emerging from Sector Digests," GWS/78.12, dated 6/11/78.]

This paper distinguishes between three different types of situations and suggests a different approach to each situation. Included are (1) countries with high absorptive capacity and program capabilities--their major constraint is funding; (2) countries with adequate financial resources but with serious deficiencies in absorptive capacity and program capabilities; and (3) countries

system). Also important are the national financial resources available to the sector (a pricing policy if it exists, and scales of charges and other dues where appropriate). Recent development in these areas should also be mentioned.

Scope for development in the sector. This should include its potential (resources, incomes, institutional capacity, etc.), as well as the current conditions (physical, socioeconomic and institutional realities).

Action decided upon inside and outside the sector. Mention should be made of the measures for which the government is responsible; current or future provision of resources from foreign aid; and the correlation and scheduling involved in implementation of that action.

B. African Development Bank (ADB)

[From "Water Supply and Sanitation Sector Paper," second draft, November 20, 1986 (1988 revision available).]

An overview is given of the water/sanitation sector in Africa, including constraints, resources, issues, recommendations for Bank Group policy and strategies. The ADB sees sector analyses as part of the strategy for addressing most of the issues identified. Based on these issues, sector policies and strategies have been determined for the following areas:

- institutional development and technical assistance;
- human resource development;
- project identification;
- project preparation;
- cost recovery;
- privatization;
- community participation and appropriate technology;
- sanitation and hygiene education;
- monitoring and evaluation;
- intra-sectoral co-operation; and
- inter-agency co-operation;

C. Inter-American Development Bank (IDB)

[From Operational Policies Manual OP-745: "Social Infrastructure Sector, Basic Environmental Sanitation," October 1984.]

The manual defines the objectives of IDB's interventions (financial assistance and technical cooperation) in the basic environmental sanitation sector. It also lists fields of activity for Bank financing and technical assistance, and gives basic criteria for Bank assistance. The fundamental criterion is given as the need to have available the benefits derived from basic environmental sanitation.

ANNEX 3. Brief Reviews of Sector Development Guidelines Used by Some Development Agencies

I. MULTILATERALS

A. Commission of the European Committees (EEC)

[From "Water and Development," Sectoral Note, pp. 3-4, and "Drinking Water Supply and Sanitation in the Urban/Rural Environment," pp. 1-3, Layout No. 14, VIII/527/79 - Rev. 2, 15.11.1985.]

EEC identifies certain basic guidelines common to both urban and rural projects or programs. The first is a **national water policy**, one based on reliable information regarding water resources and on a realistic evaluation of needs. This also requires a fair appraisal of the ability to maintain installations and the potential for wide-scale involvement, both physical and financial, of users and national authorities (political, technical, administrative). Policy should be consistent with those of other sectors, and sector actions should conform with EEC development policy and with other interventions.

Another step is the **objective evaluation of the existing situation** is considered vital. This should include water resources, needs to be met, installations, socioeconomic conditions in the area concerned, units that might take over responsibility for the maintenance of installations, and units that might be set up.

Finally, from the beginning of the project/program planning stage, every factor (human, technical, socioeconomic and financial) must be taken into account that might promote the project's success.

*

The following information is required in EEC project/program proposals.

The sector's position in the national plan, as well as the sector's role in the national economy. The latter involves sector impact on economy and town and country planning, and a summary of the main data on health, measures adopted, and their cost.

A description of the sector. This would include the country's policy on water resource use and environmental health, and data on water resources and their management. The sector description would also list the distribution of resources for different uses; administrative and legal measures governing management/use of water; assessment of water pollution (citing the main causes); and comments on the effectiveness of measures both to control water quality and to restrict pollution.

Sectoral policy objectives. These would comprise general objectives (e.g., reduction of regional disparities), and specific objectives (e.g., systematic provision of water, service levels).

Organization. Institutional resources for carrying out this policy should be included (administrative units, private sector role, existing credit

- sanitation projects over past ten years
- financing of recurrent costs

D. Investments in sector (past, present, projected)

- recent investments (construction, rehabilitation, training, etc.)
- process by which projects were chosen
- expenditures and sources of finance for wss programs in public and private sector, compared with total public expenditures, and compared with expenditures in other sectors
- any trends in investment in the sector
- implications of national plan/sector goals (see below):
- probable sources of financing for future capital and recurrent cost requirements
- possibilities for future investment by external donors

VIII. NATIONAL PLAN (if one exists)

A. Summary of goals for the water and sanitation sector

- past success in setting and meeting goals

B. Priorities of the plan

C. Population projections and impact on the sector

D. Resources needed to meet sector goals

E. Institutional responsibilities and workloads for meeting goals

F. Alternative strategies for reaching goals

G. Environmental and energy impact of plan

IX. INVOLVEMENT OF EXTERNAL AGENCIES

A. Multilateral and bilateral involvement

B. NGOs (foreign and local) active in the sector

C. Current degree of coordination between agencies

H. Service to low-income groups

- any population groups excluded from use of public facilities

I. Utilization patterns

- actual use of available safe water supplies and adequate sanitation facilities (vs. traditional practices)
- differentiation between sources for different uses
- factors governing these utilization patterns (importance of accessibility vs. other factors in choice)
- possibilities of contamination between collection and use
- current consumption of water, rural vs. urban, accessible sources vs. traditional sources of water
- factors limiting water consumption
- water-vending systems, if any

J. Design standards

- service
- technologies

VII. FINANCIAL-ECONOMIC ASPECTS

A. National economy

- type of economy
- housing situation in urban areas (type, density, availability)
- availability of electricity
- local industry
- per capita income
- sources of cash income
- income distribution among different segments of population
- recent trends in per capita income, distribution
- importance of water/sanitation sector to overall economic development of country

B. Financial aspects

- current pricing policies
- grants and subsidies
- current accounting systems
- (willingness to pay for water, if any studies done)
- current prices paid in water-vending systems
- proportion of income devoted to water supply and sanitation (wss)

C. Experience with past projects

- extent of community contribution to costs
- total capital and recurrent costs for water supply and

- G. Surveillance of water quality
 - any existing arrangements for monitoring water quality
- H. Existing legislation affecting the sector

V. HUMAN RESOURCES

- A. Existing human resources in the sector, turnover rate
 - engineers, mechanics, craftsmen, etc.
 - managers
 - health educators
 - community developers
 - communications staff
 - accountants
- B. Personnel needed for sector development (see VIII)
- C. Current number of expatriates in consultative or operational roles.
- D. Any existing plans for human resource development (by skill category)
- E. Existing training facilities

VI. SERVICE LEVELS (AVAILABILITY AND USE) AND TECHNOLOGIES

- A. Service coverage
 - population served (rural and urban separately)
- B. Service standards (rural and urban separately)
 - type of service (standpost or house connection, latrine or sewers)
 - technologies used (for delivery, treatment)
 - reliability of service
- C. Current standardization of equipment (handpumps, pipes, etc.)
- D. Traditional water sources
 - average time spent collecting water (distance, waiting time)
- E. Regional and seasonal variations of service levels
- F. Brief comparison with service levels of surrounding countries
- G. Traditional technologies or systems that could be used, built upon

IV. SECTOR ORGANIZATION AND INSTITUTIONS

- A. Institutions directly related to water supply/sanitation activities
 - purpose and goals
 - operational responsibilities
 - managerial capability
 - staffing levels
 - relationship between different ministries
 - relationship between national and local agencies/divisions
 - existence of inter-agency coordinating committee
 - any government policies regarding institutional responsibilities
 - level of government commitment water/sanitation sector

- B. Other institutions with an impact on the sector
 - responsibilities for public health, health education, drainage, solid waste disposal, agriculture
 - collaboration between water/sanitation and other sectors, especially public health

- C. Role of private sector
 - extent to which private sector provides services
 - existence of private entrepreneurs/artisans whose skills could be tapped

- D. Types and condition of existing communications links

- E. Local availability of goods and services
 - local manufacturing of pipes, handpumps, meters, chemicals, etc.
 - transport systems to deliver supplies
 - continuity of supplies and transport

- F. Operation and maintenance
 - current institutional responsibility for operation and maintenance of systems and facilities
 - philosophy/policies on financing of capital and recurrent costs
 - role of users in operation and maintenance
 - physical state of facilities
 - frequency and duration of service interruption, health impact
 - average functional life of facilities
 - metering practice in piped systems
 - any information on unaccounted-for water in piped systems

- relative severities of water-borne, water-washed, and other water-related diseases
- coverage and effectiveness of health care services, health education
- health dangers in current hygiene practices, in drawing, carrying and storing water

E. Awareness, attitudes, behavior

- degree of felt need for improved water/sanitation (traditional beliefs and practices)
- water-handling practices: transportation, storage, use
- perception of importance of health relative to convenience: differences among various social groups
- awareness of health/hygiene, perceptions concerning causes of disease
- sources of health information, role of school
- possibilities for promoting community participation and behavioral changes
- communications channels (radio, theatre, etc.)

F. Hygiene and sanitation practices

- excreta disposal: current practices, anal cleansing habits, degree of privacy desired, special needs for women and children
- hygiene: current practices for handwashing, bathing, food handling
- lessons learned from previous sanitation improvement efforts

G. Geography

- physical setting, topography, rainfall, climate
- maps

III. MANAGEMENT OF NATIONAL WATER RESOURCES

- A. Overview of available water resources
- B. Overview of available meteorologic and hydrologic data
- C. Any problems of water scarcity, by region
- D. Conflicting uses of water (irrigation, tourism, etc.)
- E. Existing policies, laws, traditions governing use of water resources
- F. General assessment of water pollution problems

ANNEX 2. Checklist of Information to be Provided with a Position Statement

I. INTRODUCTION

- reason for study, date of mission(s), composition of mission team

II. COUNTRY BACKGROUND

A. Demographic

- population, growth rate, projections, rural vs. urban
- proportions men/women/children
- population density (national, rural)
- average village size, types and spacing of compounds
- number of people per household/compound
- country's definition of urban/rural
- classification of urban centers by size

B. Sociocultural profile

- significant cultural characteristics, including religions
- land-use patterns, community traditions and practices on land tenure, water rights and management
- educational and literacy levels
- socioeconomic trends in recent years

C. Community organization

- community organizational and sociological structures, distribution of work tasks within household, community position/role of women, potential for involvement and advancement of women
- degree of social cohesion within communities
- any practices to ensure sharing of resources and facilities within the community
- local government - traditional or modern?
- leadership structures, rivalries
- existence and influence of community organizations (village council, youth groups, etc.)
- popular response to past development activities

D. Health profile

- infant mortality, under-5 mortality rate, variations by socioeconomic groups
- local epidemiology: prevalent diseases, especially water-related diseases; geographical distribution; rural vs. urban; seasonal variations
- nutritional status of population (esp. children)
- main causes of mortality, morbidity among infants/children
- prevalent local disease vectors (insects, snails, etc.)



SECTOR SURVEY

A broad analysis of sector potential and major sector problems, policies and issues cast in the medium- to long-term perspective. Lending program development may also be an objective. The survey process also includes advance missions to select the topics for the sector survey proper.

SECTOR WORK

In World Bank parlance, Sector Work is the generic term for a series of activities and studies leading to the preparation of a strategy for operations within a country. There are three distinct stages in this process, involving preparation of: (i) a sector position statement; (ii) a sector issues statement; and (iii) a strategy statement.

STRATEGY PAPER

Strategy Paper is a term commonly used by the World Bank. The Bank's Operations Manual Statement (OMS) provides guidelines for preparing and reviewing Country Strategy Papers (CSPs). It emphasizes that the CSP should:

- (i) be the primary vehicle for Bank strategy review;
- (ii) focus only on the main macroeconomic and sectoral issues facing the country;
- (iii) evaluate government's policy agenda for dealing with these issues, and propose modifications if needed;
- (iv) assess the prospects for carrying out the proposed policy agenda;
- (v) systematically review the country's creditworthiness;
- (vi) spell out all major aspects of the Bank's strategy toward the country, linking the lending program to the overall strategy; and
- (vii) be reviewed every two to four years (depending on the size of the lending program) by the Operational Committee (OC), and, in the case of the larger borrowers, by the President's Council (PC) as well.

to further analysis (sub-sector studies) on planning, programming and project preparation activities (as opposed to "sector studies"; see below).

Rapid assessment reports provide a quick and concise analysis of ongoing programs in the sector and their ability to be expanded in line with the Decade goals, terminology, concepts and reporting model drawn up shortly after Mar del Plata (1977). It was accepted that the aim of a basic model for rapid assessments should be to satisfy the basic needs of the poorest populations.

SECTOR

"A distinctive part," used to describe a segment of a country's development operations, for example, the water supply and sanitation sector, private sector, economic sector, etc. In common usage, water supply and sanitation for rural and urban activities form sub-sectors of the water supply and sanitation sector.

SECTOR DIGEST

A summary of information gathered through rapid assessments is entered into Sector Digests contained in an IDWSSD directory maintained by WHO (Ref).

SECTOR REVIEW

Of similar broad scope as a sector survey but in considerably less depth, the Sector Review may involve an initial review of the sector or an updating of a previous sector survey. The review may also include some lending program development. Most sector reviews are conducted in association with IBRD economic missions and often appear as appendices of economic reports.

SECTOR STUDY/SECTOR ANALYSIS

Sector Study, or Sector Analysis is a generic term used commonly by the World Bank to mean a study of a country's water supply and sanitation sector which provides a comprehensive review of the responsible organizations, their present state of development, problems and major development policy options. Such sector studies should provide a foundation for the preparation of national sector plans and are therefore primarily for the benefit of decision makers. However, they also benefit outside agencies interested in efficient sector development.

Sector analyses are thought by some to have a slightly different focus and are used to make recommendations on the water supply and sanitation sector within the broad context of country development. This include the supply and demand for services, institutional jurisdictions and responsibilities, the history of sector development and project experience, implementation strategies, cost recovery, financial management, administration, sector planning, and project identification, preparation, and implementation. Sector analyses make possible the identification and national solution of institutional problems and the expansion of absorption capacity prior to the funding of major projects.

ANNEX 1. GLOSSARY OF TERMS AND DEFINITIONS

POSITION STATEMENT, ISSUES STATEMENT, STRATEGY STATEMENT, ACTION PLAN

The terms Position, Issues and Strategy Statements, and Action Plan are discussed at length in the text of this paper. However, their definitions may be summarized as follows:

- An Issues Statement is an analysis of the sector that states the critical constraints inhibiting its development.
- A Position Statement is an inventory of the sector which states its level of development together with its context within the country (e.g., national policy, institutions responsibility, donor support, etc.).
- A Strategy Statement is the formulation of a series of activities or interventions that would address or overcome the constraints identified in the issues statement.
- An Action Plan is a statement of the time sequence of, and responsibilities for, the strategic actions that were formulated.

PROJECT CYCLE DEFINITIONS

The terms Pre-identification, Identification, Preparation and Appraisal are commonly used by the World Bank in its project preparation cycle and their definition may be summarized as follows:

Identification is the first phase of the project cycle where the suitability of a proposed project for the Bank's support is determined. In the past this was done largely in response to specific proposals from borrowers. However, more recently this has evolved into an iterative process where project identification may be done in a number of stages. Hence, the term pre-identification, describes an early dialogue with a government regarding its needs and priorities within a sector.

Preparation is the actual setting out of the project's goals and determining the necessary inputs and activities required to achieve them. It covers the full range of technical, financial, economic, institutional and social aspects.

Appraisal is a comprehensive review of all technical, institutional, financial and economic aspects of a proposed project before funding is approved. It is the sole responsibility of the lending agency.

RAPID ASSESSMENT

Rapid Assessment reports were conceived in the context of the IDWSSD as preliminary reports on the preparedness of each country concerned. They are usually short, seldom more than ten pages, with recommendations that can lead

where the government and its donors share common objectives and are mutually supportive. However, the process is not complete. There will always be room to improve the strategy, to modify the approaches developed, to introduce technological improvements, and to match more closely training programs to the sector's need. Improvement can only be made if performance is monitored, achievements and failures evaluated and the strategy approach strengthened as a result.

The final outputs, then, include:

- (i) an investment plan--a pipeline of investment projects, either initiated or modified;;
- (ii) a monitoring and data base system; and
- (iii) periodic review and reappraisal so that the sector strategy can be modified and improved in the light of progress and changing circumstances.

The next component, preparation of the action plan, includes identification of critical constraints, agreement on a time-frame for its implementation, and delegation of responsibility for each component.

Demonstration projects are an important element of the action plan as they provide the visible proof of the validity of the approaches developed, as well as invaluable experience to modify and fine-tune the methodology. Projects must be identified, funding secured and project documents prepared. After approval, project launch, implementation and monitoring can begin. Because these projects are for the purposes of demonstration, information on them should be widely disseminated. In many cases, the projects will initiate a program that continues after project expiration. This is particularly true for community-based projects that set up revolving funds providing on-going credit availability for household water and sanitation improvements.

The training component requires both a training needs assessment and preparation of a training program.

In terms of policy formulation or change, many of the outputs of the strategy and action plan will recommend, and provide the basis for, new or changed government policies. A mechanism to effect policy changes is essential and should be specifically included in the terms of reference for the government coordination structure.

Many countries lack even basic legislation and by-laws covering water supply and sanitation. In other instances, legislation is out of date and no longer enforced. The drafting of new legislation and codes of practice may be necessary to give legal authority to other strategy initiatives.

Essential features of applied research and other studies include other studies identified in the strategy. In addition, research into new or adapted technologies, delivery mechanisms, or service procedures (e.g., waste-reuse/resource recovery in lieu of disposal) can be done where these are directly applicable. The benefits of research and studies will usually be enhanced by involvement of local agencies.

A number of parallel activities will continue, or be initiated, along with the action plan. These will probably include: an existing pipeline of investment projects, supported by government and donors; local manufacture (e.g., pipes, handpumps, toilet pans, fittings); an ongoing dialogue with government and donors, to include conferences, workshops, evaluations and reviews; and support to indigenous NGOs. All of these activities should form part of the strategy and action plan.

4.4 Implementation, Assessment and Review

After the sector development process described in the previous sections has been worked through, it should then be possible to replicate and expand the demonstration and pilot projects within the bounds of the human and financial resource availability. The end result of the strategy and action plan is a situation in which investment programs can be modified, can expand and can provide sustainable improvements in water and sanitation services, and

(vii) Complementary Activities

- Health and hygiene education campaigns are essential complements to water and sanitation improvements and will usually benefit from the involvement of local health services.
- The demand for improved services, particularly sanitation, may need to be generated, in which case a social marketing and promotion study is recommended.

4.3.2 Action Plan

Having formulated the strategy for development of the water and sanitation sector, an action plan for putting it into operation should be designed. This is more than pre-identification of a folio of investment projects. It is a comprehensive plan which identifies all important components of, and prerequisites for, successfully applying the sector strategy.

The action plan is the final step in the sector development activities. It puts the strategy into operation and is the precursor of instituting the strategy within broad-scale national programs. The action plan could comprise:

- definition of responsibilities/coordination within government;
- a coordinating mechanism for donors;
- a time-frame for implementation;
- demonstration projects;
- training;
- policy formulation or change;
- drafting of legislation;
- institutional adjustments;
- applied research and other studies; and
- parallel activities.

The first two components are particularly important requirements for successful adoption and execution of the action plan--that a coordination structure be established among relevant government agencies and that a coordinating mechanism (or "collaborative framework") be establishing to ensure sound donor participation. These elements will allow both sharing of the tasks to be carried out and benefiting from the resulting information.

and who cook, clean and maintain household sanitation, should be a focal point in any delivery system as they are affected most by the lack of adequate water and sanitation services (J: van Wijk-Sijbesma 1985).

- Individual or shared household services will very likely require a different delivery system from the more conventional centralized services. The establishment of revolving funds to provide credit, community action groups to manage projects, and user groups to operate and maintain services will probably need to be tested by a pilot project.
- The role of the private sector in the provision of water and sanitation services may need to be examined and opportunities explored for greater private sector participation--for example, in the local manufacture, marketing, installation and maintenance of handpumps, toilet pans, etc.
- An extension strategy may need to be designed identifying the agents for communicating with communities.

(iii) Institutional Strengthening

- An organization and management study is usually a prerequisite to action for developing institutional capability (C: Cullivan et al. 1986; also Annex 4).

(iv) Human Resource Development

- A training needs survey assessment is recommended (E: Lawrence Tomaro 1983, Richter 1986; also Annex 4).

(v) Financial Management Improvement

- A tariff study may be needed to forecast future revenue requirements which will be adequate to meet financial obligations (see Annex 4).
- A study of willingness and ability to pay (Whittington et al. 1988) will provide guidance in the selection of affordable technologies and service levels, and assist in the setting of tariffs and billing and collection mechanisms

(vi) Operation and Maintenance

- The survey of existing systems (item [i]) will also provide information on the adequacy of O&M services and the appropriateness of current technologies.
- Definition of responsibility, development of capability, availability of spare parts and collection of sufficient revenue to cover costs are the essential requirements for adequate O&M services.

4.3 Strategy Formulation and Action Plan

4.3.1. Sector Development Strategy Formulation

When the present situation in the sector has been assessed and the major issues identified, a strategy for addressing these issues can then be formulated. The strategy could have the following main components:

- (i) the selection and development of appropriate technologies;
- (ii) developing delivery systems for implementing the technologies;
- (iii) formulating appropriate institutional arrangements;
- (iv) developing human resources to build institutional capability;
- (v) establishing financing mechanisms and improving financial management;
- (vi) establishing sustainable operation and maintenance capability; and
- (vii) other complementary activities (e.g., demand generation, health and hygiene education programs, private sector promotion, etc.).

It may not be possible to address all the issues without special studies and/or pilot projects. There are numerous handbooks and other sources of information available to guide each aspect of strategy formulation. Sample terms of reference for some recent studies are included in Annex 4. These studies may include:

(i) Technology

- The functioning of existing water and sanitation systems should be surveyed and evaluated (H: WHO 1983).
- Identifying appropriate water and sanitation technologies should be done based on current practices, consumer preferences, social/cultural factors, physical conditions (topography, groundwater depth and quality, etc.), affordability, ease of upgrading, complementarity, and so on (L: Kalbermatten et al. 1982).
- New technologies may need to be adapted to local conditions and tested by pilot projects to establish their local credibility.

(ii) Delivery Systems

- An assessment of beneficiaries' needs and priorities may need to be carried out (H: Salmen 1987), together with a social feasibility analysis (F: Perrett 1983) that examines the social suitability of proposed interventions. Women, who usually fetch water, rear children and tend them when sick;

Financial and Economic

- lack of foreign exchange
- inadequate cost recovery
- lack of recurrent funds for operations and maintenance
- project/program financing limitations

Social

- cultural traditions affecting capacity to participate and manage
- perceptions/constraints on the role of women
- important cultural/religious considerations
- need for behavioral change
- need for health and hygiene education
- major health problems related to water
- lack of demand

Technological

- inappropriate technology
- inadequate operations and maintenance support
- import substitution through local manufacture
- lack of spare parts
- water resource constraints (quality and quantity)

Lack of Data

- on demography
- on coverage
- on demand
- on health status

The position paper should include the following:

- a country background description (geography, demography, economy, health, sociocultural features, etc.);
- technologies in use and service coverage achieved;
- institutional arrangements and responsibilities;
- the availability of human resources;
- water resource availability and management;
- national plans and policies for the sector;
- domestic and foreign investments; and
- donor involvement.

Annex 2 provides a checklist of information to be considered for inclusion in the position paper. The team can exercise its discretion in deciding the detail of information gathered based on its importance and availability.

The position paper is essentially descriptive and can be structured either as a single document or as a series of position statements, each covering one or more of the topics listed. It should not be excessively long. Detailed data can be included as annexes and published information summarized and referenced in a bibliography.

4.2.2. Issues Paper

Based on the initial data gathered and the position paper, it should be possible to identify those issues forming constraints to sector development. These should be described and analyzed so that the actions necessary for their resolution can be subsequently proposed.

Suggested issue categories are listed below together with examples of some commonly identified areas of concern:

Institutional

- overlapping or unclear responsibility
- lack of coordination
- lack of skilled manpower
- inadequate incentives
- poor communications
- lack of necessary legislation

3. A Strategy Formulation for addressing the issues and, if necessary, testing solutions by pilot projects; and
4. An Action Plan for implementing the strategy and demonstrating its suitability.

These four distinct phases could be consolidated into one exercise, or, perhaps better, into two, by combining the position paper and issues assessment into one step and the strategy formulation and action plan into a second. Experience has shown that an initial reconnaissance mission is usually desirable to identify the key agencies, enlist their agreement and support for the proposed sector work, and gather initial basic data, particularly any previous relevant studies.

The important features of the approach outlined are that it enables a strategy to be developed over time, with the flexibility to experiment a little and adapt to new knowledge; that it is tested and verified through pilot and demonstration projects before expansion into existing or new broad-scale programs; and that it is a comprehensive and collaborative effort between government and other financing agencies.

The last point, collaboration between government and other financing agencies, is particularly important. Whereas previous sector work has been directed towards strategy formulation as the basis for launching projects, the elaboration of a strategy and action plan provides a clear definition of all the actions needed. These include studies to resolve key issues, which could then be undertaken by external support agencies within the collaborative framework.

4.2 Position Paper and Issues Identification

4.2.1 Position Paper

The first main step in the sector development process is to prepare a paper comprising position statements and an inventory of information, from which to identify the main issues and as a basis for formulating strategy.

Usually a team comprising three or more persons will be needed with the following skills:

- an engineer,
- an institutional specialist/financial analyst, and
- a social scientist.

Where an external agency fields a mission to prepare a position paper, every effort should be made to involve national staff and institutions, although it is recognized that this will not always be practicable. The ultimate goal of sector work is to develop a strategy and investment program to be implemented by the local authorities. Every opportunity should therefore be utilized to involve the key staff of these authorities so that they benefit from on-the-job training and transfer of skills.

4. RECOMMENDED APPROACH

4.1 Proposed Steps in Sector Development

Development efforts in the water supply and sanitation sector have, in the past, been characterized by:

- (i) projects narrowly focused on achieving immediate coverage targets with inadequate consideration of the need to develop long-term sectoral capability; and
- (ii) an evolving methodology for carrying out sector studies. Initial efforts produced extensive data, detailed analysis, and usually a rather prescriptive, centralized strategy for sectoral development. Subsequently the approach has been modified to place less emphasis on initial sector analysis and more on building up a strategy over time, while maintaining a continuing dialogue with government.

This paper supports and further develops the latter approach to sector development, based on the increasing experience gained from the UNDP/World Bank Water and Sanitation Program. It also provides information in applying this methodology in the form of checklists of information requirements, typical terms of reference for the various types of studies described, and an extensive bibliography.

There are two main features to the methodology:

- (i) parallel streams of activities which are maintained at different levels of the recipient countries' institutional structure:
 - at the policy level, a continuing dialogue with government so that the end product is the result of a collaborative effort, accepted and supported by all parties;
 - at the national level, training programs to develop institutional capability; and
 - at the local level, pilot and demonstration projects to both refine and provide visible evidence of the applicability of the strategy approaches developed.
- (ii) a sequence of four key steps which together form the sector development process:
 1. A Statement of Position (or Position Paper) which provides an initial description of the sector and the stage that has been reached in its development;
 2. A Statement of Issues (or Issues Paper) which identifies and analyzes the key issues to be resolved;

The principle social issues to consider are:

- integration of water and sanitation services with health and hygiene education;
- community involvement from the planning stage onward;
- the community's ability to manage services; and
- the capacity of the community to finance these services and to utilize available credit; and
- the involvement of women.

Health and hygiene education must be integrated with water and sanitation improvements if the full potential of benefits is to be realized. For example, hand washing is an essential complement to improved human waste disposal, as is the proper use of a sanitary toilet.

Social acceptance can only be achieved by involving the community throughout project planning and implementation. If recipients do not like the facilities, they will stop using them, and/or stop repaying any financial assistance. Their acceptance of new technology can be developed through information and education campaigns--but only if these efforts are made from the start.

Women are the community group most affected by water and sanitation services. They must tend the children and fetch water for cooking, washing and cleaning. They are also the most affected by the lack of sanitation facilities as they spend the greater part of their day in the home. Their needs should be considered and their support enlisted when planning service improvements.

Adequate management capability is also essential if services are to continue functioning long after their installation. For private on-site services in particular, but also for community services, this responsibility falls both to individual households and to the community as a whole. Families should know and accept their responsibility, maintenance services should be available, and water and sanitation user groups formed for communal services.

Finally, another vital element in sustainable water and sanitation improvement programs is maximum cost recovery. Many communities have the capacity to finance their own programs but lack the requisite organization and support. Most households can afford the cost of basic services but lack access to sources of credit and technical guidance or the most appropriate solutions. Adequate community finance and credit bodies and technical guidance systems must be created or identified and built into program planning.

at producing statistically valid measurements of health impact. Other benefit measurements, such as time savings or willingness to pay, while still difficult to estimate, can be used. These can be effective in determining the most appropriate level of service to be provided.

Most agencies accept the fact that improved water and sanitation services are prerequisites for a satisfactory state of community health and that it is not essential to fully substantiate their economic justification on health grounds.

More important are the choice of the most appropriate level of service, the least-cost solution and the financial feasibility of programs providing the chosen level of service. Financial feasibility is an essential requirement for sustainable programs on a large scale. In addition, affordability of services not only to individuals but also to local and national governments must be considered.

In the provision of, for example, a sewerage system, the real cost would probably be unaffordable to many potential low-income customers. However, service could be subsidized by commercial and industrial users who could afford, and would be willing to pay, charges in excess of their proportional real cost. The community as a whole, represented by the local government, might choose to subsidize sewerage services to the part of the community that is unable to meet the direct cost of their service. Such subsidies could be justified as a consequence of the benefits to the whole community of improved sanitary conditions and services. The introduction of a specific charge (e.g., a surcharge on water bills or housing taxes) could provide those subsidies; however, even the subsidized customers should pay a nominal amount.

Since central governments represent the entire population, however, they would not be justified in subsidizing high levels of services for a few areas if, as a consequence, even a basic service would not be available to the remainder of the population helping to finance it.

The main issue, then, is that all needs must be considered in formulating sector strategies and that affordable improvements should be provided on the basis of maximum cost/benefit, and as equitably as possible.

3.5 Social Issues

The availability of water and sanitation services has a profound influence on the daily life of each family in a community. These services affect their general health and particularly their susceptibility to enteric diseases. They also determine the amount of time spent on their essential water requirements, the quality of their immediate environment, the balance of disposable income after paying for these services and even their status in the community. It is therefore vital that relevant social issues be addressed when planning community water and sanitation services.

technologies and ignore the lower cost alternatives more appropriate for developing countries; and

- iii. beneficiaries, given the choice, will select the option they perceive to give the greatest benefit, without adequate knowledge or consideration of the costs.

The solution to these problems is better training and information regarding alternative technologies and service levels, and their corresponding management needs and costs.

Five criteria for appropriate technology are that it must be:

- (i) technically workable, (ii) socially acceptable, (iii) financially affordable, (iv) institutionally manageable, and (iv) environmentally sound.

Technology is workable if the requirements for sustained operation and maintenance are available or can be developed during implementation. Handpump selection has provided many examples of non-workable solutions because of inferior design or unavailability of essential spare parts.

[Social acceptance and financial affordability issues--essential ingredients for sustainable national programs--are discussed in sections 3.4 and 3.5.]

A technology is environmentally sound if it has an acceptable environmental impact and does not reduce the beneficial use of the environment enjoyed by the community. For example, a sewerage system may bring substantial benefits to the immediate community served, but result in a severe problem for people living downstream of the wastewater discharge point (this water is often untreated or only partially treated).

To improve the selection of technology, more care is needed in the selection process. For example, technologies do not stand alone. The provision of water supplies generates increased quantities of wastewater to be managed. As a second example, the construction of on-site sanitation facilities has implications for groundwater quality if untreated groundwater is utilized as a drinking water source.

Furthermore, the provision of improved water and sanitation services is not an end in itself. Each service level should be viewed as the stage reached in a process of progressive improvement or service upgrading to meet growing demand and affordability. Before selecting certain technologies, consideration should be given to whether they fit into a sequence of upgrading or whether they would be abandoned when the next logical service level was introduced.

3.4 Economic and Financial Issues

Economic justification for water supply and sanitation improvements involves a complex consideration of existing economic conditions and potential impacts which will not be addressed here in detail. Determining benefits such as health improvement is difficult without large and expensive surveys aimed

- **Conflicting objectives:** the donor, the country and the actual beneficiaries did not always have the same goals; problems tended to occur during implementation rather than in planning.
- **Lack of authoritative and powerful decision-making agencies.**
- **Insufficient allowance for dynamic economic, institutional and political conditions.**
- **Poor communication with beneficiaries regarding their needs and involvement, which resulted in weak participation.**
- **Bypassing local institutions, in the mistaken belief that short-term technical assistance could be made without serious long-term consequences.**

Therkildsen's remedy involved more policy experimentation and the merging of planning and implementation into a continual process. He also emphasized the importance of monitoring and information systems, continual dialogue with beneficiaries, and building institutional capacity rather than achieving quick physical results.

A drawback of this approach, however, would be a slow-down of program implementation; in addition, developing recipient capability would mean reaching fewer people in the short run.

3.2 Institutions and Human Resource Issues

Donors are often frustrated in their attempts to initiate and implement assistance programs by weak sector agencies. In an effort to see improvement and assuage budgetary pressures to use available funds, donors have, in many cases, pushed projects through with little agency involvement or community participation. Because the recipients had no sense of responsibility toward the new facilities, and/or because essential maintenance services and spare parts were unavailable, the benefits were usually not sustained.

There are no short cuts to achieving and managing sustained sector growth. If a country is to establish and strengthen responsible institutions and human resource programs and to become independent of donor support, institutional development and training must be essential components in investment.

3.3 Technology Selection

Although there is a range of technological options for the most appropriate solution to any need, choice of technology is often solely based on desire. Three reasons for this practice are:

- i. government public works agencies are generally dominated by technical personnel who are trained to select "conventional" technologies, which are often more sophisticated and expensive than necessary;
- ii. university training courses attended by technical personnel, whether given locally or overseas, usually emphasize conventional western

3. SECTOR ISSUES

Formulating sector strategies requires an awareness of the current debate in the development community on fundamental sector issues. Following are brief outlines of the issues under consideration.

3.1 Developmental Issues

Major issues for the sector are: first, government role and responsibility in the provision of water supply and sanitation services, and second, the most effective approaches for support agencies in sustained development of the sector.

Most developing country governments accept the fact that adequate water supply and sanitation services are essential to improving the health and well-being of their citizens. Although these governments accept responsibility for providing services, they often lack the necessary resources and institutional capacity to deliver them.

In both their urban and rural projects, there has been over-emphasis on construction and under-emphasis on technology choice, maintenance, cost recovery and user participation. As a result, numerous facilities have failed and been abandoned, within a short period of time. Those facilities provided through the private sector by the users themselves have usually fared better, and are commonly sustained.

It is vital that governments make not only availability but sustainability of services a sector priority. By recognizing both their limitations and the advantages of involving the private sector, they can work with communities and individuals to achieve adequate coverage.

A second major issue is that of effective donor support, particularly in the poorest countries. In the past, donor support, while well-intentioned, has often measured success by the amount of money disbursed or the number of facilities constructed, rather than on development of capability within the recipient countries. One consequence has been "fast-track" project implementation procedures which do not adequately involve responsible national institutions. Another result has been "tied aid"--grant-financed aid tied to procurement in the donor country, with insufficient consideration of support services for spare parts and maintenance. In addition, projects have been implemented that deliver facilities to the beneficiaries rather than provide for the participants to obtain improved services.

In a review of rural water supply planning in Tanzania, Therkildsen (B: 1988) investigated two major problems associated with donor support: (1) the limited use or lack of medium and long-term plans during implementation; and (2) short-lived benefits from completed schemes. He found several factors that accounted for these problems:

same country effectively independent of each other. In particular, sector work carried out by the larger lending agencies should not only be available to other support agencies but should recognize and provide the information requirements of those agencies. In the context of the Collaborative Framework, there is need to agree on general guidelines for sector work so that the results can be utilized by governments to encourage investment in the sector by a range of financing agencies, including multilateral and bilateral donors.

2.5 Summary

In summary, it is recommended that a four-stage approach to sector development be taken. In the initial stage, as much information and data as possible should be collected, without undertaking additional in-depth studies, to define the position of the sector. From this base, the second stage of identifying critical issues within the sector can take place. In the third stage, a sector development strategy is formulated which may consist of in-depth studies or pilot projects to find solutions to address the critical issues identified in the second stage. Finally, an action plan is formulated that includes a coordinated and collaborative approach between governments and the support agencies that leads into the formulation of an investment plan. Any strategy, however, should take into account that the level of sector development in countries will vary tremendously and that investment programs may well be underway. Sector development strategies should be tailored to the individual circumstances where needs may vary from technology introduction to policy shifts. This approach is discussed in detail in Section 4.

desire to provide water supply services at levels well in excess of those needed to meet basic requirements. In the absence of parallel improvements in the facilities for disposal of human wastes and in hygiene practices, little if any reduction is likely in the impact of diarrheal diseases, which are among the leading causes of morbidity and infant mortality. Indeed, the increasing quantities of wastewater generated as a result of water supply improvements can have a negative effect on public health and can create other problems through the lack of an adequate drainage system. Quite often it is found that responsibility for each sub-sector for water supply and for wastewater drainage is fragmented - even to the extent that different institutions are responsible for each sub-sector, with little coordination.

Within the same sub-sector, several parallel activities are required for an effective development strategy. The approach shown in Figure 1, which was developed by the UNDP/World Bank to implement a program strategy in primary focus countries, is a good example. Six parallel streams of activities are proposed to be sustained in parallel to the main project investment program which is supported by governments, donors and lenders.

To achieve sustained development, coordinated action over several years is needed in at least the following areas:

- Sector studies and applied research leading to the adoption of sound sector policies as a framework for national sector plans and investment programs;
- Pilot and demonstration projects to refine implementation strategies that can be replicated on a national scale for the delivery of water supply and sanitation services to low-income people;
- Human resource development and training to strengthen institutions and respond to the manpower, including community members and workers, needed for delivery of services using low-cost systems;
- Development of necessary supporting institutions and services in both public and private spheres, including promotion of local industries and consultants and support of nongovernmental organizations (NGOs);
- Support to development of investment projects ultimately leading to large scale improvements of services using low-cost water supply and sanitation systems; and
- Continual dialogue between the government and other sector institutions (including external support agencies active in the sector) to integrate these elements into a coherent approach to sector development.

A third area where improvements can be made is in the parallel activities of different donors. The hard lessons gained from experience need to be shared with others and yet it is not uncommon to see donors working in the

In this way a substantive program can be built up at whatever rate the availability of resources allows. The initial testing of strategies and community interest provides a solid foundation on which to expand with confidence to a national scale.

The maximum advantage from the "learning-by-doing" approach to sector development will be derived if the planners responsible for sector strategy adopt an open-minded, adaptive approach. In the past, it has been common to see large quantities of information gathered, detailed analyses carried out and a definitive national or regional program formulated; the masterplans of East Africa are an example of this. To test implementation strategies first in small projects allows adaptation, and there have been many instances where much time, money and effort would have been saved as a result. Thus, pilot projects should play an important role in testing and formulating policy and strategy. Many unexpected results are produced and sometimes quite different alternatives are found to the approaches being tested. A high degree of experimentation should be encouraged so that innovative technologies and procedures can be tested without fear of the consequences if they are not successful.

The process of formulating a sector development strategy then, could start with data gathering and defining issues, opening a dialogue between the government and beneficiaries, testing technologies and delivery mechanisms through pilot and demonstration projects, and finally to use the results and experience of those projects together with other studies relating to financial and institutional improvements as an input to the further development and refinement of the implementation strategies. It is important that strategies are able to adapt to the changes which pilot projects will inevitably produce, and that a number of activities are maintained in parallel.

Unfortunately, there have not been many studies comparing investments on a large nation-wide or sector-wide scale with those where activities began on a small demonstration scale, studies analyzing the results with respect to the way in which the studies and project identification were carried out. There are, however, several examples of pilot projects that were successful and subsequently replicated on a large scale. There are also other references in the literature to this issue, including many critiques of the approach to sector development in which a lot of time and effort is spent on developing a long-range, centralized plan whose goals may not be realistic. The policy papers of a number of aid agencies advocate the development of pilot projects. And in practice, many sector studies (performed by the World Bank, WHO and other organizations) conclude with recommendations (sometimes called an "action plan") that include pilot or demonstration projects to be begun at the same time as other studies are being carried out. (See Annex 3)

2.4 Parallel Activities

A most important requirement of a sector development strategy is the need for a number of activities to occur simultaneously. Over-emphasis on one aspect might produce more immediately measurable results but may not, in the longer term, be in the best interests of a sustained improvement in the health and well being of the beneficiaries. An example of this situation is the

issues statements. It could then be available to all agencies and provide a basis for a collaborative approach to sector development.

Many individuals and donor agencies believe the last option described above is the best: carrying out pilot and demonstration projects early in the sector development process, while continuing to gather information. Pilot projects serve several purposes:

- reducing the waiting time between initial contact and actual project implementation;
- serving as an initial test of community reaction to a given approach or technology, before trying to introduce it on a major scale;
- serving as a test of a particular strategy (a cost recovery strategy, for example), where the results can serve as input to ongoing discussions on formulating national policy, thus "learning by doing;"
- allowing more innovative approaches to issues; with a single project at a local level, there is more room for experimentation than in a national program where the government feels responsible for the outcome;
- convincing governments that alternatives to conventional technologies, delivery mechanisms and management arrangements may be most appropriate.

The first factor may be very important to the host country; the last four may well ensure a much more beneficial impact from the investment.

What is being advocated, then, is that initially the original sector study collect as much information as available, without in-depth additional investigation, and identify problem areas. From this, a strategy with recommendations for the next stage in development of the sector would be developed. This next stage will normally include specific studies (e.g. developing a human resource development training plan, carrying out a tariff study, analyzing current design standards and suggesting modifications), as well as pilot projects that will attempt to address problem areas already identified (lack of community participation, or design or operation and maintenance systems, for example). This abbreviated sector study would be more appropriately termed a sector review or position paper.

2.3 The Adaptive Approach

Since all the information relevant to the water supply and sanitation sector is unlikely to be available during the initial phase of sector development, a preferred course of action may be to initiate pilot projects and develop and test the strategies and policies for sector development over a period of time.

2.2 Sector Development Studies

The general purpose of sector studies is to first gather enough information on the sector to assess where the country is placed in the development spectrum (position paper³). It is then possible to identify problems or issues and make informed decisions about actions needed to further develop that sector. Such actions constitute a sector development strategy and action plan which may include a number of different types of sub-studies or supporting studies such as:

- training needs assessments
- willingness and ability to pay studies
- tariff studies etc.

One important issue is that of who collects the information. The process of having an outside organization come into a country to examine practices, policies and capabilities may be necessary where the local capacity is weak, may serve as a positive stimulus to the government, and may raise interest in issues formerly ignored. On the other hand, collecting information without sufficiently involving the local actors (at the government or at the community level) could lead to poor working relations with the government, inaccurate data and inappropriate conclusions.

Equally important, and a more difficult theoretical issue, is that of the amount of information collected, the time frame and the order in which it is collected, and finally the point in the process at which actual interventions (pilot projects, detailed studies, training programs, investment programs, etc.) are begun.

The ideal situation is to have access to all the information relevant to the water and sanitation sector before deciding upon the financial or technical assistance to be given. Unfortunately, this information (which includes economic and sociocultural data, as well as an assessment of the current levels of service, institutional capacity, government policy, available resources, and so on) is rarely all available during a sector planning exercise. This leaves the team with several options: write up the report without the missing information; prolong the study until the information is gathered; or write up the study with recommendations to collect that information at the same time other studies or pilot projects are begun.

An important question then is, what information is essential and what information can be collected later? Is there a critical mass of information without which further studies or perhaps pilot or demonstration projects should not proceed? A survey of donor agency requirements led to the check list attached as Annex 2. It is suggested that this list would provide a useful guide to the information requirements for the initial position and

³ For a definition of terms, refer to Annex 1.

2. THE SECTOR DEVELOPMENT PROCESS

2.1 Stages in Sector Development

The strategy requirements for further development of the water supply and sanitation sector will depend to some extent on the state of development that has been reached. For example, requirements in a country with low service coverage, high population growth rate, low economic growth, and weak institutional capability are likely to be quite different to those required in a country with the opposite sectoral characteristics. It is useful, then, to consider the stage of sector development which has been reached in the country under consideration and give greater emphasis to collecting the information most relevant to advancing the sector to a high level of development.

Sector development might be categorized into three distinct stages:

- (a) the initial stage--where little capability exists for rapid improvement and the existing low service coverage has resulted almost entirely from limited and uncoordinated projects. Some of the key requirements in this situation are to assess needs and introduce appropriate technologies to meet those needs. Small pilot and demonstration projects may serve as models for future replication;
- (b) the growth stage has been reached in many countries which have limited scale sector programs underway and service coverage levels are starting to rise. In this case the main requirements are to develop broad-scale programs, to build up institutional capability at all levels (in both the public and private sectors) to deliver and maintain those sources, and to initiate a strong promotional campaign to raise awareness and create demand for improved services; and
- (c) the mature stage which might describe the state of development of the water supply sector in urban areas of the same countries. Service coverage is relatively high and rising steadily, the basic legal and financial systems are in place, and established training and human resource development programs are producing skilled manpower. In this stage, emphasis may be needed on improving the management of sector enterprises, including reviewing tariff structures and billing and collection mechanisms, and on improving operation and maintenance practices. Additional needs may include the rehabilitation of ageing infrastructure, and the upgrading of services to a higher standard.

In practice, sector development is often uneven and more than one stage may be occurring at a given time. For example, water supply in better-off sections of large cities is usually far more developed than the sanitation services. This uneven development may be caused by political priorities, fragmentation of responsibilities, availability of resources, and consumer demand.