MEETING ON OPERATION AND MAINTENANCE

20 - 23 FEBRUARY 1990

REPORT

(FINAL DRAFT)

THE HAGUE

IRC, INTERNATIONAL WATER AND SANITATION CENTRE/WHO COLLABORATING CENTRE

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Abbreviations: ESA - External Support Agency
O&M - Operation and Maintenance

0. PREFACE

This draft report reflects the discussions had in an informal working meeting held at IRC from 20 to 23 February 1990. The meeting was co-organized by WHO and IRC. The meeting was attended by Mr. Fred Greiner (GTZ), Mr. Phill Roark (WASH), Mr. Robert A. Boydell (World Bank/UNDP - Regional Water Supply and Sanitation Group, Delhi), Mr. José A. Hueb (WHO) and Mr. Teun F. Bastemeijer (IRC) who chaired the meeting and prepared the present report.

Mr. Jan Teun Visscher (IRC) contributed to the discussions on 20 and 21 February. Various other IRC staff gave comments on the ideas and proposals developed by the meeting. Brigitte Guillalot, Lauren Wolvers and Isabella Wimmers assisted the participants of the meeting and contributed to its preparation.

Marieke Boot gave some critical comments and indicated the need to work towards the improvement of O&M in a multi-disciplinary effort. It should be stressed, that the real challenge of the sector is to achieve sustainable, appropriate coverage with O&M provisions contributing to that. It would be important in view of future efforts to clearly establish the linkage with other "entry points" related to sustainable appropriate coverage (Working groups on resources coverage, financing, community participation and hygiene education).

Lauren Wolvers took care of the lay-out of the report and did most of the typing.

1. INTRODUCTION

Purpose of the meeting

The main purpose of this meeting was to contribute the preparation of the meeting of the Working Group on Operation and Maintenance (O&M) which is planned to be held in Geneva on 19, 20, 21 and 22 June 1990, and will be hosted by WHO. The working group meeting is being organized as a result of the interest shown by a number of External Support Agencies during an initial meeting on the same subject which WHO organized in the Hague with the support of IRC. This first meeting took place in November 1988,immediately after the International Drinking Water Supply and Sanitation Consultation, which took place from 2 to 4 November 1988 (See: Report WHO/CWS/89.10).

The main conclusions of the initial meeting on Operation and Maintenance were:

* The Magnitude of the O&M problems needed to be more clearly established to create awareness and increase the status of O&M activities and organizations.
* The development of country level policies and strategies required support from external support agencies.
* Case studies needed to be elaborated to induce the exchange and transfer of experiences, and work out strategies to improve O&M.
* A working group meeting needed to be organized in order to discuss opportunities for coordination of efforts aiming to improve operation and maintenance.

The meeting also resulted in the recognition of the special consideration which needed to be given to O&M systems for rural and urban water supply systems. The meeting acknowledged the need to address the O&M problem of sanitation systems, but considered the O&M of water supply systems more urgent at present.

The present preparatory meeting built upon the above conclusions in order to prepare a detailed programme for the Working Group Meeting, and to agree on the preparation of background documents and case studies to be presented during the Working Group Meeting on Operation and Maintenance.

Approach

The initial meeting of November 1988 mentioned above provided a good overview of issues to be addressed concerning operation and maintenance in urban and rural areas. After this meeting WHO, with collaboration of IRC and WASH, had developed a first outline for a cooperative effort on O&M, which proposed to identify joint projects and activities (1).

During this preparatory meeting, the approach was to analyze the problems of poor operation and maintenance so as to tentatively formulate the objectives of cooperative efforts to improve O&M.

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(1) Working group on O&M. Proposed Approach, WHO, April 1989.

To achieve these objectives a limited number of activities were identified which would require the commitment and support of both the governments of developing countries and the external support agencies.
On this basis the agenda of the meeting in June was prepared, and the tasks were allocated among the members of the organizing committee (see annex 3).

Expected Follow-up

The preparatory work and the working group meeting in June are expected to result in a process of cooperative action on operation and maintenance at the country level, but also at the international level and in programmes and projects.

The June meeting and its immediate follow-up will be organized and the O&M issue promoted by WHO, and the other members of the organizing committee on operation and maintenance, created on the initiative of WHO.

It is hoped that the current efforts will result in a plan of action on O&M for the coming decade. It is anticipated that joint activities will be undertaken with support of the working group. Activities during the first years would aim to further enhance the interest for O&M development among country government, water supply and sanitation institutions and external support agencies. Possible activities are described in chapter 5.

2. PROBLEM ANALYSIS

For the problem analysis the participants of the meeting followed the Objective Oriented Project Planning (OOPP) method to establish a problem tree indicating the core problem, the main problems contributing to this problem and the causes of these problems. The main effects of poor operation and maintenance are discussed in chapter 2. The "problem tree" is presented in figure 1. An example of more detailed analysis of a problem is presented in annex 2.

The main problems contributing to poor operation and maintenance identified by the participants of the meeting are presented below, with a summary of the discussions had during the preparatory meeting.

These discussions contributed to the identification of possible activities to be part of a joint strategy.

Insufficient funding for operation and maintenance

There are several main causes for this problem, including the high costs of O&M due to inappropriate technology and high service levels, but also and perhaps more importantly because O&M costs are not realistically taken into account in designing the systems. Non-accounted for water is another important cause.

Users may not be willing or not able to pay due to different reasons including lack of satisfaction due to poor services provided, their income position, but also the absence of suitable mechanisms for revenue collection.

Government funds for O&M are often insufficient. This is not only due to insufficient allocations, but also to budget spending procedures which hamper effective use of available budgets. Inefficient use of funds for O&M increases the gap between the availability of funds and the actual costs of O&M. This problem has increased over the years, and the ESA have sofar not really accepted to invest in O&M development. Until recently, the different causes of this problem had not been addressed systematically. Presently good progress is being made in defining the problem and outlining strategies to improve resources coverage through the work of the working group on cost recovery.

Inadequate external support agency practices to O&M development

It was discussed that several ESAs have now formulated policies which address O&M. This is in line with the proceedings of meetings of the collaborative framework, where O&M was identified as a main sector constraint. The problem is therefore no longer the absence of donor policy guidelines, but the inadequacy of the actual practices. One of the possible main causes is that policies do not appear to be specific, realistic or balanced. This is probably related to an over-all lack of reliable and comparable data on the actual O&M status of existing facilities. There is also a lack of experience on how ESAs can positively contribute to O&M development. Country agencies face similar problems, and often cannot provide guidance to donors wishing to contribute to the improvement of operation and maintenance.

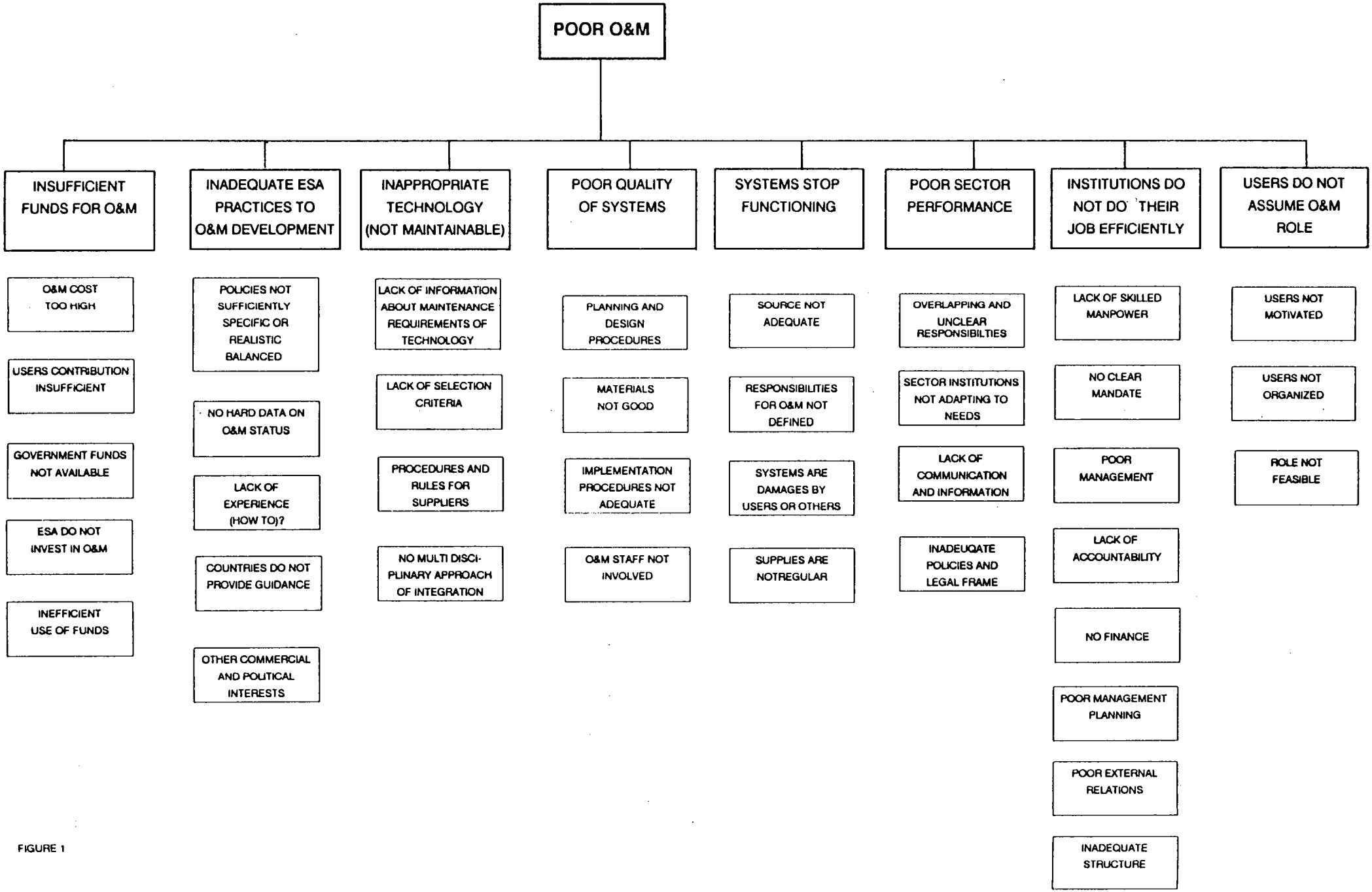

POOR O&M
INSUFFICIENT FUNDS FOR O&M
O&M COST TOO HIGH
USERS CONTRIBUTION INSUFFICIENT
GOVERNMENT FUNDS NOT AVAILABLE
ESA DO NOT INVEST IN O&M
INEFFICIENT USE OF FUNDS
INADEQUATE ESA PRACTICES TO O&M DEVELOPMENT
POLICIES NOT SUFFICIENTLY SPECIFIC OR REALISTIC BALANCED
NO HARD DATA ON O&M STATUS
LACK OF EXPERIENCE (HOW TO)?
COUNTRIES DO NOT PROVIDE GUIDANCE
OTHER COMMERCIAL AND POLITICAL INTERESTS
INAPPROPRIATE TECHNOLOGY (NOT MAINTAINABLE)
LACK OF INFORMATION ABOUT MAINTENANCE REQUIREMENTS OF TECHNOLOGY
LACK OF SELECTION CRITERIA
PROCEDURES AND RULES FOR SUPPLIERS
NO MULTI DISCI-PLINARY APPROACH OF INTEGRATION
POOR QUALITY OF SYSTEMS
PLANNING AND DESIGN PROCEDURES
MATERIALS NOT GOOD
IMPLEMENTATION PROCEDURES NOT ADEQUATE
O&M STAFF NOT INVOLVED
SYSTEMS STOP FUNCTIONING
SOURCE NOT ADEQUATE
RESPONSIBILITIES FOR O&M NOT DEFINED
SYSTEMS ARE DAMAGES BY USERS OR OTHERS
SUPPLIES ARE NOTREGULAR
POOR SECTOR PERFORMANCE
OVERLAPPING AND UNCLEAR RESPONSIBILTIES
SECTOR INSTITUTIONS NOT ADAPTING TO NEEDS
LACK OF COMMUNICATION AND INFORMATION
INADEUQATE POLICIES AND LEGAL FRAME
INSTITUTIONS DO NOT DO THEIR JOB EFFICIENTLY
LACK OF SKILLED MANPOWER
NO CLEAR MANDATE
POOR MANAGEMENT
LACK OF ACCOUNTABILITY
NO FINANCE
POOR MANAGEMENT PLANNING
POOR EXTERNAL RELATIONS
INADEQUATE STRUCTURE
USERS DO NOT ASSUME O&M ROLE
USERS NOT MOTIVATED
USERS NOT ORGANIZED
ROLE NOT FEASIBLE

FIGURE 1

Finally, there are factors outside control of those working in programmes and agencies, relating to political and commercial interests in the donor country or in the countries where programmes are implemented.

Use of inappropriate technology which cannot be maintained

Lack of information concerning the maintenance requirements of technology is a main cause of this problem. Selection of technology and choice of materials is often based on a comparison of investment costs. The quality of the technology is assessed in many situations without sufficient information about the prospects for maintenance in the local environment.

Lack of selection criteria with a view to O&M (standardization, spare parts, distribution, technical skills available etc.) also contributes to this problem, as available suitable technologies may exist but are not necessarily selected. An important factor is the obligation on developing country institutions and governments to make purchases in donor-countries. Commercial and political interests influencing the choice of technology are causing the use of inappropriate technology. The role and obligations of the government, the users, O&M organizations and the suppliers of systems and materials are often not realistically defined. Applicable procedures and rules and control systems to limit political and commercial influences are mostly lacking, or are not operational.

At the country level, a multi-disciplinary approach to maintenance-oriented technology selection could take away some of the main causes of the use of inappropriate technology which cannot be maintained. Such approach would further enhance the development of technology which can be easily maintained at affordable O&M costs.

Poor quality of water supply systems

There are many water supply and sanitation systems which were poorly constructed and/or designed. Consequently, the systems did never function as expected, or deteriorated quickly. O&M costs of such systems are often extremely high, and sometimes it is not feasible to maintain them. Causes for the problem of poor quality include the lack of suitable planning and design procedures, the use of poor quality materials or parts, the lack of suitable implementation procedures including control mechanisms and functions to ensure that systems are built according to agreed quality standards, and to the original design.

Much could be improved by involving staff of institutions responsible for O&M in design and construction. This also applies for users responsible for the management of their systems. Presently, many systems are transferred to those who have to maintain them without giving them the right to control their quality, and without a proper procedure for commissioning the systems.

Systems cease to function adequately

Systems may not function adequately in spite of good O&M. Users will no longer be satisfied, as it does not serve their purpose as planned and agreed, and systems will deteriorate further. So, malfunctioning of systems may be a cause of poor O&M. This makes O&M more burdensome, and perhaps even less feasible.

One of the serious causes for malfunctioning of systems in the inadequacy of sources of drinking water. This concerns the quality, the quantity and the reliability of surface and groundwater sources. Sources may not be adequate due to problems of access, or because other uses have become so important, that they affect the use of the source for domestic purposes. Many sources deteriorate, and do no longer meet the requirements of the population. Due to deforestion, agricultural and industrial pollution, and population and other causes, this in becoming an important cause of O&M problems.

Other causes of malfunctioning of systems in spite of efforts to ensure O&M correctly are that responsibilities for O&M are not well defined and the roles of the users, the communities, the water supply agency, the government, the local authorities and the private sector are not well distributed. Systems also cease functioning when they are damaged, unintentionally or intentionally by the population. This may happen more particularly when users are not satisfied with the service they get, or when there is unequity in distribution. Systems may also get damaged by land slides, flooding and other natural causes. Civil war and terrorism are other important causes which need no further explanation.

Finally, many systems break down or function poorly due to lack of foreign exchange and other factors causing unreliable and irregular supplies, like for example chemicals for water treatment. Such situations are disturbing the O&M system and can cause prolonged periods of malfunctioning.

Poor sector performance in countries

O&M problems cannot be seen in isolation from the over-all institutional and political context in the sector and in the country. Obviously O&M problems are not restricted to the water and sanitation sector, even though the consequences are perhaps more serious here then in some other sectors due to the health risks associated with poor W/S services.

The poor performance of countries is caused partly by the lack of resources allocated to the water and sanitation sector, but more importantly there is inefficient use of resources. Responsibilities are often unclear, and there is competition between government institutions. Often, there is no suitable organizational model, or the need to improve the situation is not perceived. Consequently, institutions do not adapt themselves to the needs.

Lack of communication and information contribute to poor performance of staff, programmes and institutions. Approaches or practices are not improved. Experiences are not exchanged sufficiently.

These various causes relate to inadequacy of national sector policies and legal provisions. Development of such policies and legal systems is often hampered by political and socio-cultural factors, and by earlier commitments to provide water free of charge.

Institutions do not do their job efficiently

The relative importance of the causes for lack of efficiency will greatly vary within institutions facing this problem. These causes relate to internal and external conditions. Internal conditions affecting efficiency are management, availability of suitably skilled or trained manpower, organizational structure, and manpower development planning. Lack of efficient management of human resources causes a lack of perspective, and consequently staff is often not motivated to improve their performance. This problem is often aggravated by the low level of salaries.

Poor management of water supply and sanitation institutions affects their efficiency in carrying out or organizing O&M. Often the status of O&M departments is low, and O&M staff does not have the perspective to be promoted to more senior posts, or to gain access to fringe benefits.

The low importance given to O&M is also illustrated by a lack of accountability in this area. The performance of staff is not controlled or monitored, and it is often unclear what are the O&M jobs to be carried out in a particular period due to lack of planning and reporting systems. There is a need to develop capacities to improve the planning and to monitor the costs and effects of O&M activities.

External conditions affecting efficiency are the degree to which the institutions and their managers are accountable for their O&M performance, their technical mandate, their spending authority and their ability or authority to generate revenues.

A cause for inefficiency relating to both the internal and external conditions are the poor external relations entertained by most institutions. Obviously, O&M systems are most efficient when institutions cooperate and complement each other so as to make the best possible use of available capacities. This is often not done, and consequently the O&M institutions tend to work in isolation and protect their interests.

Users do not assume O&M roles

This problem analysis needs to be further worked out using the current experience in the area of community participation and hygiene education along the lines of the Interlaken Consultation of 1987, and consequent work by a working group on community participation and hygiene education during 1988 and 1989. The working group successfully developed draft guidelines for introducing community participation and hygiene education into water supply and sanitation projects.

In the context of O&M, it is important to develop a clear picture of what can realistically be expected from the users or the user communities. Presently a main reason for the users not to assume their anticipated O&M role is that it is simply not feasible to do so. It is important to take into consideration that the role of the users is different depending on socio-cultural and economic factors.

The technology choice is greatly affecting their ability to play a meaningful role. In large urban piped systems, user participation will primarily concern the control of the distribution system and the service connections serving consumer groups, depending on the solutions for monitoring and revenue collection. In small gravity fed systems user organizations may manage the systems and contract private sector organizations (contractors) to do the technical work. Point source water supply systems may actually be maintained and repaired by community members and local mechanics. Presently, there is confusion about the role of the users, and often expectations are unrealistic. More realistic solutions are generally the outcome of a systematic process of consultations and joint decision-making, where roles and rights are agreed upon with the users as partners rather than beneficiaries. To effectively implement this kind of approach, there must be high level commitment and realistic guidance at the policy level.

Increased and more systematical involvement of communities, users and user groups in planning, design and implementation contributes to better O&M, but much depends on the motivation of the people and of those selected to carry out specific duties. Motivation is generally higher where water is scarce. Motivating the people by making them aware of possible health benefits is a process of many years.

Users may have insufficient incentive to maintain the systems due to other occupations or investments. Local conditions change over the years and the composition of the user communities as well. Where individuals play an important role, lack of incentive may also be caused by relative improvement of income levels. More favorable conditions in other places are another factor.

Another cause for users not to assume O&M roles is lack of organization. Lack of organization may concern the government and private sector support for community based maintenance. It may also concern the users themselve. Social conflicts, economical interests, or cultural factors may negatively affect the success of O&M at user level, in spite of joint efforts to develop a community-based management system.

3. EFFECTS OF POOR O&M

The status of O&M is possibly rather low, because there is insufficient awareness about the importance of poor operation and maintenance.

The participants of the meeting analyzed effects of poor O&M (see figure 2). This analysis merits to be continued in order to develop clearer standards or indicators to evaluate O&M conditions in countries. The following effects were discussed:

Water supply and sanitation systems break down

Water supply systems may stop functioning due to other causes than poor O&M, but lack of maintenance and improper operation are major causes. For handpumps, most countries have recognized that poor O&M is the cause of the high percentage of pumps out of order.

Lack of maintenance frequently causes the deterioration of piped systems too, resulting in poor and unreliable service in terms of quantity, quality and service pressure. As a result of breakdowns and malfunctioning, people are forced to use other sources which meet their requirements more adequately in terms of quantity, quality or convenience.

Private entrepreneurs like water vendors tend to replace public systems, and the unit costs to be paid by consumers will generally rise. This causes differences in access to the service.

Poor O&M also causes increasing operation costs to keep up a minimum level of service. Higher investments will be needed to serve additional populations. For instance, in an urban water supply system with a high percentage of leakage, the capacity of pumping stations, treatment plants and transmission mains will have to be increased disproportionally to cope with growing demand. Poor operation and maintenance of existing systems will cause the higher and middle income group to invest in water supplies to meet their own needs, either by constructing new independent systems or by installing pumps to draw water from a low-pressure system. When water supply is not reliable, the industries will often develop their own sources. Under these circumstances revenues are small and water supply services for low-income groups cannot be financed. As a result, poor O&M contributes to inequality in access to adequate service and available resources are used to serve a decreasing proportion of the population.

Water revenues decrease due to poor O&M. People are generally less willing to pay when the service is becoming deficient. They will seek to avoid paying, but nevertheless, use the water supply system where possible.

People break water meters, make illegal connections, and cut water pipes to ensure a maximum discharge to their collection point. This obviously increases water losses, and less water will be accounted for. So, in spite of high operation costs, less water will be sold, and there will be little room for investments to meet a growing demand and to solve the O&M problems.

A last effect is a loss of government control. Most sector plans disregard operation and maintenance problems. Increased coverage is expressed in terms of more facilities. Poor O&M makes this coverage criteria unrealistic. As there are often no other data, government plans and programmes are often not contributing efficiently to improved water supply and sanitation for more people.

Concluding, the over-all and most serious effects of poor O&M which can be observed are:

* Benefits of water supply and sanitation programs are not realized;
* Governments loose control of the situation and can no longer realistically plan for the improvement of water supply and sanitation coverage;
* The position of sector institutions is weakened, and the political priority given to the sector cannot be translated in appropriate action due to lack of influence and lack of funds.

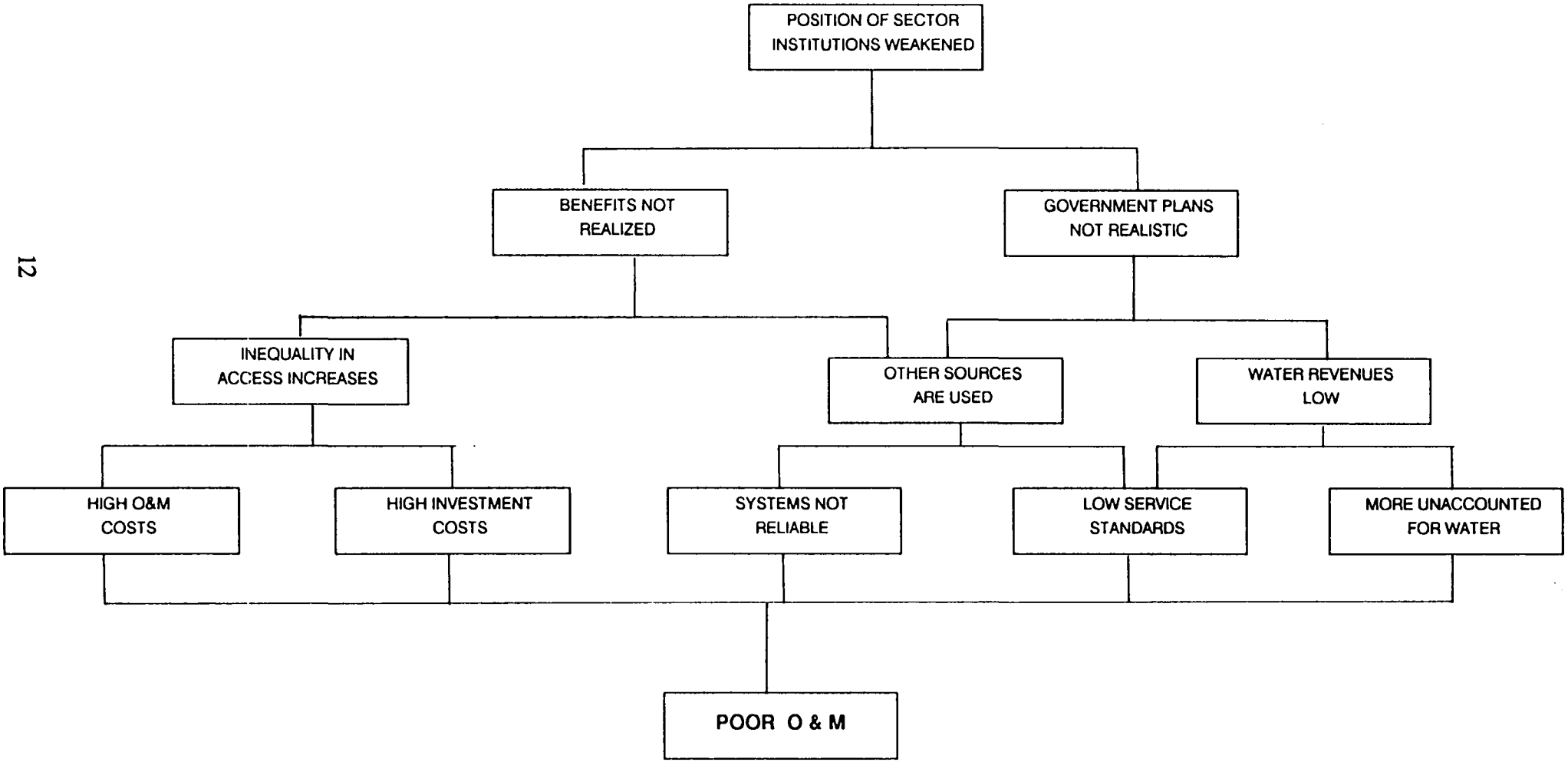


FIGURE 2: EFFECTS OF POOR O&M

4. OBJECTIVES OF COORDINATED EFFORTS

The objectives of coordinated efforts are necessarily related to the perceived problems. The participants of the present preparatory meeting discussed these objectives (see figure 3) on the basis of the preceeding problem analysis. A more detailed objective tree is presented in annex 1.
The following strategic objectives are being proposed in view of the goal of improving operation and maintenance of water supply and sanitation facilities. This goal needs to be reached as part of an international effort to maximize sustainable coverage.

Adequate funding for O&M ensured

Efforts to achieve this objective must concern the mobilization of resources from the users, from the government and from the external support community. As operation and maintenance costs are often not monitored, there is lack of insight in the amounts necessary for operation and maintenance. Nevertheless, it is clear that O&M costs are often too high, and that decreasing O&M costs and increasing efficiency are important. Funding from ESAs could concern these last aspects, as investing in O&M development could have more effect than paying for O&M operations.

External Support Agencies promote and support O&M development

To achieve this objective, the ESA should aim to develop realistic and balanced policies providing practical guidance to decision-makers and programme staff.

Reliable data and monitoring systems to assess the status of O&M on a more continuous basis are important to promote and support O&M development for ESAs, but also to allow governments of developing countries to provide adequate guidance to the various agencies.

External support agencies could support studies and projects with the specific objectives of generating, using and disseminating information on positive experiences concerning O&M development at user, programme and country level.

Finally, ESAs could promote and support the development of O&M systems and procedures which minimize the interference of commercial and political interests.

Appropriate, maintainable technology used

Referring to the problem analysis, this objective could be achieved primarily by coordinated efforts at the country level.

An important prerequisite for the use of maintainable knowledge is that the maintenance requirements of available technology are clear. For this, information about maintenance requirements should be made available, and its use stimulated.
This would provide a basis to develop selection criteria. Application of these criteria would be an important condition for the use of appropriate, maintainable technology, but would have to be accompanied by the development and implementation of a system of rules and procedures to which the supplier of systems, the government and water supply and sanitation programmes should adhere.

Clearly, the development of such system of rules and procedures and the establishment of criteria for maintenance oriented technology selection require a multi-disciplinary approach, because the maintenance requirements and the procedures also concern economical, socio-cultural and environmental conditions which have to be taken into account. Experience with such multi-disciplinary approach concerning technology selection should be further developed and guidance provided to those who would apply such approach in countries and programmes.

Quality of WS/S systems ensured

To achieve good quality is an important objective irrespective of the selection of technology, as even the most suitably designed system is not maintainable, if it is not constructed well. To achieve this objective there are several prerequisites.

Firstly, there should be adequate planning and design procedures, and these should really be used.

Secondly, there should be materials available meeting the required quality standards.

Thirdly there should be proper implementation procedures and control functions to ensure that the system "as-built" corresponds to the design and that the system is constructed with a view to future maintenance. This can be achieved to a large extent by involving staff and institutions which will be in charge of O&M after the transfer of the system when the construction is finalized.

Finally, there should be proper arrangements for commissioning schemes with an appropriate guarantee period to increase the degree of accountability of those constructing and those maintaining the systems.

Systems function normally

To achieve this, there should be more emphasis on the selection and protection of sources of drinking water. This will require coordination with other sectors of development, in particular at the community level and within catchment areas affecting the sources. There is a need to develop experience in his area, and to review experiences (IRC is organizing a working group meeting concerning this subject).

A proper definition of O&M responsibilities and support roles is an important condition for continued functioning, but more importantly, the proper use of the facilities should be ensured, and damage caused by users and others avoided through proper planning, design, implementation and organization.

The above specific aims can only be achieved if materials and other supplies are available to allow those responsible for O&M to keep the systems in good working condition.

Sector performance improved

The improvement of sector performance is primarily depending on a good definition of responsibilities of the government institutions, the private sector, the ESAs, the local authorities and the users. Such definition is good, when responsibilities do not overlap unnecessarily and when all actors accept their role. Sector institutions, local authorities and ESAs should be willing and capable to adapt to the real needs to gain the full commitment of sector staff and the target population.

Better exchange of information and communication could greatly contribute to better sector performance and to more adequate policies and legal frames for sector development.

Efficiency of WS/S institutions improved

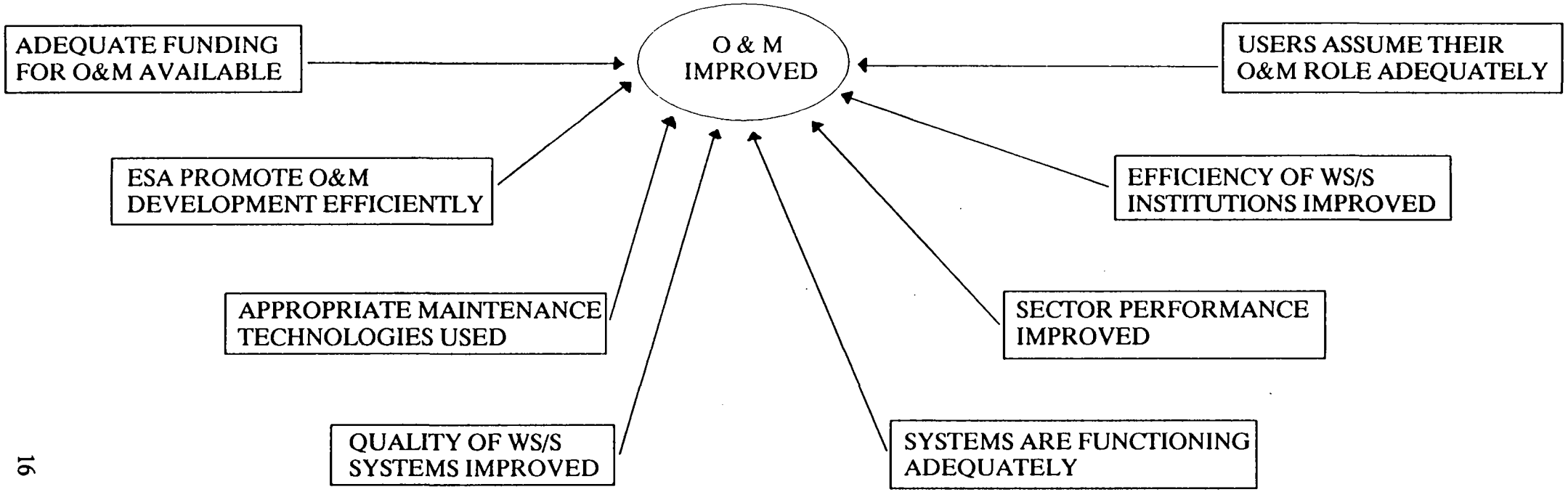
The increase of efficiency of water supply and sanitation institutions is to be achieved by improving internal and external conditions affecting the efficiency. As stated in the problem analysis various aspects of institutional development need consideration, and approaches may vary according to the nature of the problems and the needs. Main conditions for increased efficiency are:

- clear strategic objectives of institutions and full commitment of staff to these objectives;
- clearly defined role of institutions;
- accountability in terms of cost-effectiveness of their work in the sector.
- realistic manpower development and training plans
- organization structure adapted to the role of the institutions
-

Users assume their O&M role adequately

To achieve this last objective, considerable progress needs to be made towards the above objectives contributing to improved O&M.

For instance, it is not very likely that users will steadily continue to pay for O&M, if the government does not increase its budget for O&M to a level allowing to ensure proper support for community-based maintenance. In other words, users can feasibly take up this O&M roles if the conditions are favourable for it. Where this is achieved or being achieved, community participation and hygiene education are the key to higher motivation of the users, and to the development of viable user-based organizations. The role users may take up in O&M will generally be defined through consultations with communities and community groups. Women are often the most important group to be consulted. To avoid set-backs, negotiations concerning user rules in O&M should take into account survey data and background information concerning user groups and communities.



HOW TO ACHIEVE THIS?

* GAIN SUPPORT FOR HIGH PRIORITY ON O&M
* AGREE ON NEED AND SCOPE OF JOINT EFFORTS
* DEFINE STRATEGIES AND FRAMEWORK TO IMPROVE O&M
* PROPOSE CONCRETE ACTIVITIES

FIGURE 3

5. ACTIVITIES

The activities proposed for discussion during the working group meeting in June are related to the objectives described in chapter 4 of this report, and address key issues identified on the basis of the problem analysis. The proposed activities are intended as a starting point for discussions in sub-groups during the second block of the working group meeting on O&M in June 1990 during which other activities may be proposed to be included in a joint plan of action for the coming decade.

Maintenance funds inadequate

ESA sector policies on O&M are not sufficiently specific as to the allocation of resources for O&M development. Developing country governments do not allocate sufficient funds to develop viable O&M systems. Maintenance costs are not realistically assessed. User contributions do not cover all costs.

KEY ISSUE:	THERE IS INSUFFICIENT INVESTMENT IN THE DEVELOPMENT OF VIABLE O&M SYSTEMS

ACTIVITY:	TO PREPARE A POSITION PAPER ON O&M TO PROMOTE I NVESTING IN O&M AND MOTIVATE DECISION MAKERS TO CONTRIBUTE TO IMPROVEMENT OF O&M

This activity could be carried out shortly. It would be based on a discussion paper to be produced before the working meeting in June 1990 and further include information from the cases presented during this meeting.
The position paper would identify key issues and possible strategies to improve O&M. This activity would contribute to generating support for O&M development from ESAs.

ESA practices O&M not adequate

ESA practices could be more coherent with the policy principles which have been outlined in donor meeting and policy papers prepared by most ESAs. More coherent practices require a good overview of possible strategies.

KEY ISSUE 2:	THERE IS A NEED TO DEVELOP GUIDELINES FOR MAINTENANCE ORIENTED PROJECT PLANNING, SYSTEM DESIGN IMPLEMENTATION

ACTIVITY:	DEVELOP GUIDELINES FOR O&M

Guidelines would have to be based on a good overview of field experience under different conditions (environmental, socio-cultural, hydrological, geographical).

First, experiences would be reviewed in collaboration with country institutions and programmes. Models and lessons to be learned from these experiences could be summarized in case descriptions. This could form the basis for a practical manual allowing field staff and planners to use this information. This manual could include a checklist for planners, designers and implementary project staff. Ultimately this activity would result in guidelines for O&M development.

Use of appropriate technology which cannot properly be maintained

Presently it is difficult to diminish this problem because there is no systematical knowledge of maintenance requirements.

KEY ISSUE 3:	TECHNOLOGY CHOICE NEEDS TO BE BASED ON AN ASSESSMENT OF O&M REQUIREMENTS UNDER FIELD CONDITIONS IN DIFFERENT COUNTRIES

ACTIVITY:	TO COLLECT DATA ON MAINTENANCE REQUIREMENTS AND DEVELOP CRITERIA FOR SELECTION OF TECHNOLOGY

Data are necessary to develop suitable selection criteria and to develop procedures and rules for supplies and their partners in government and in programmes.

The activity would include a review of technology and monitoring systems being developed in different countries. Based on this review of technology options, monitoring and information systems would be field tested. The results would provide guidance to countries in developing their own systems, disseminating information and developing guidance material for technology selection, and establishing data-bases.

Water supply systems cease functioning adequately

There is a lack of data on the status of O&M and the functioning of systems. To improve O&M the relative importance of the causes of malfunctioning need to be established at the country and at lower levels.

KEY ISSUE 4:	MALFUNCTIONING OF SYSTEMS IS A CAUSE OF POOR OPERATION AND MAINTENANCE

ACTIVITY:	DEVELOPMENT OF MONITORING SYSTEMS THROUGH COLLABORATION WITH FIELD PROJECTS IN CARRYING OUT OPERATIONAL FIELD STUDIES AND PILOT PROJECTS

Monitoring over a prolonged period is often required to determine the causes and degrees of malfunctioning. More data concerning this issue could provide a basis for improved sector planning and maximizing sustainable coverage by proper allocation of resources for new construction, system improvement, rehabilitation, operation and maintenance, and measures to improve or protect drinking water sources.

The activity would require the support of various field projects willing to collaborate intensively with specialized institutions.
The activity would involve the identification of maintenance standards on monitoring indicators, indicators to monitor the functioning of systems. These indicators would have to be applied, and the results evaluated. The activity would contribute to the activities 2 and 3 mentioned earlier but would more specifically contribute to a strategy aimed to avoid malfunctioning of systems due to causes other than poor O&M.

Low quality of systems

The quality of systems depends on various inputs and control measures. A pre-condition for improving quality is the availability of spare parts and components of systems.

A reliable spare parts distribution system would have to ensure:
- quantity
- distribution points at adequate distance
- quality
- stable prices

Local production, standardization and privatization are important to ensure the provision of spare parts, and proper installation of system components.

KEY ISSUE 5:	RELIABLE SPARE PARTS PROVISION NEEDS TO BE ENSURED AND THE ROLE OF THE PRIVATE SECTOR DEFINED

ACTIVITY:	REVIEW EXPERIENCE CONCERNING SPARE PARTS DISTRIBUTION, LOCAL PRODUCTION AND PRIVATIZATION OF O&M RESPONSIBILITIES

The activity would involve studies of strength and weakness of governmental and private spare parts distribution systems, comparison of local and foreign suppliers in terms of quality of products, prices and reliability, and study of constraints faced by supplies in developing a service networks and local production.

This study would establish research and development needs, based on which further activities can be launched.

Poor sector performance

Sector issues and constraints are recognized by institutions and programmes, but they often lack a good overview, and have no mechanism to address the issues through a joint effort.

KEY ISSUE 6:	SECTOR ISSUES AND CONSTRAINTS AFFECTING THE PERFORMANCE OF THE SECTOR NEEDS TO BE ADDRESSED TO IMPROVE EFFECTIVENESS OF FUTURE EFFORTS

ACTIVITY:	TO DEVELOP AN O&M BIBLIOGRAPHY COVERING KEY ISSUES IN O&M

This activity would be carried out in various stages involving the collection of material from projects and programmes, the preparation of occasional papers concerning experience gained and research done in countries. The work on the O&M bibliography would allow to identify gaps in available information. Developing country sector institutions and programmes would contribute to the work. Country specific development needs in the area of O&M would be identified in the process.

ACTIVITY:	TO PROVIDE GUIDANCE TO COUNTRIES WISHING TO IMPROVE O&M IN A CONCERTED EFFORT

This activity would aim to promote successful models to develop a country approach. The models would have to show how to address key issues and constraints at the country level. Guidance material would include framework to address key issues, steps and methods to prepare country workshops and discussions.

The material would draw from earlier experience concerning key constraints affecting sector performance like the organization of the sector, O&M responsibility, human resources and training needs, defining community roles etc.

O&M institutions are not working

Institutional development problems have to be overcome in the countries, but it is important that information is available allowing institutions to develop human resources and improve their organization. This information would concern training needs assessment, training courses, training material, and documentation on technical and non-technical subjects.

KEY ISSUE 7:	INSTITUTIONS NEED TO DEVELOP THEIR HUMAN RESOURCES TO IMPROVE THEIR EFFICIENCY

ACTIVITY:	TO ASSEMBLE AND REVIEW PUBLICATIONS AND MATERIALS ON O&M TRAINING AND RELATED SUBJECTS AND TO EXCHANGE INFORMATION ON THE DEVELOPMENT TRAINING PROGRAMMES FOR PERSONNEL IN SECTOR INSTITUTIONS RESPONSIBLE FOR OPERATION AND MAINTENANCE

The activity would involve interested developing country institutions and specialized organizations. It would be geared to practical use of available information, and to development of suitable training programmes and materials at the country level.

Users do not effectively assume O&M roles

In spite of the recognition of the potential benefits of user participation in all phases of programmes, there is much to be done in this area. The development of community-based maintenance or maintenance management systems is being promoted with the introduction of more suitable technology, but multi-disciplinary approaches need to be developed in countries.

KEY ISSUE 8:	LACK OF MULTI-DISCIPLINARY APPROACHES TO SYSTEM DESIGN, TECHNOLOGY SELECTION AND USER PARTICIPATION IN O&M

ACTIVITY:	TO HOLD WORKSHOPS WITH STAFF FROM PROJECTS, INSTITUTIONS AND LOCAL AUTHORITIES TO DEVELOP SUITABLE APPROACHES

The activity consists in identifying the problems and constraints of user roles in O&M jointly with local authorities, water agency personnel, implementing staff, trainers and representatives of the population to develop realistic solutions before organizing and training users to assume their roles in O&M. Training of facilitators is required. Specialized institutions, preferably in the countries concerned, could assist in developing this activity.

6. WORKING GROUP MEETING IN GENEVA

Purpose of the meeting

The purpose of the meeting would be to develop an action plan to improve O&M of Water Supply and Sanitation. The Working Group meeting is also seen as a means to gain support for high priority on O&M. The meeting would aim to achieve the following results:

* Support from ESAs, country institutions and sector specialists for increased efforts and effective allocation of resources to O&M.
* Agreement on the scope of joint efforts during the next decade.
* Joint strategy and framework to improve O&M outlined.
* Concrete activities proposed by the participants of the meeting.

Meeting strategy

To make the meeting a success, the size and composition of the group of participants is important. The organization of the meeting should be such, that good use can be made of the experience and ideas of the participants.

Composition of the group of participants

The meeting would have to be composed of influential participants and presentators. An effort will be made to convince ESAs to fund participants from DCs from developing countries. Preferably 50% of the participants would represent a developing country institution or programme. It will be suggested, that those participants could be financed through donor supported water supply and sanitation programmes to have a good input from those who are facing the O&M problem in the field. The participants would preferably have the mandate to agree on, or to promote future cooperation for improved O&M.

Organizing committee

The meeting would be prepared by an organizing committee which would also have an important role in organizing the immediate follow-up of the working group meeting. The organizing committee would be composed of those present in the preparatory meeting at IRC. The chairman and the rapporteur of the meeting would be invited to participate in the preparations.

Chairman

The chairman of the meeting would preferably be an influential person from India, or another important developing country. If the person would be from India, he could possibly more easily present the results to participants of the meeting of the collaborative framework in Delhi.

Facilitator

The facilitator assisting the chairman would organize group discussions in smaller sub-groups. These discussions would address key-issues in order to identify and outline actions needing priority. The facilitator would be preferably a DC-national with experience in this kind of work, who could also give good inputs to streamline the discussions.

Meeting programme

The meeting would have a duration of four days divided into three blocks:

Block 1: 1.5 days

Objective:	To reach common understanding of problems and possible strategies
Required inputs:	- Discussion paper on maintenance problems, key-issues and framework for joint action. - Short case descriptions focussing on specific problems showing how O&M improvements can be achieved.

AGENDA

Tuesday 19 June 1990

08 30 - 10 30	Opening welcome statement Introduction of Chairman, Moderator & Rapporteur Presentation of participants Adoption of the agenda
10 30 - 10 50	Refreshment break
10 50 - 12 30	Plenary session Presentation of background and events leading to present meeting dealing with Operation & Maintenance
12 30 - 14 00	Lunch
14 00 - 15 30	Plenary session Presentation of O&M overview on problems and issues dealing with Operation & Maintenance
15 30 - 15 50	Refreshment break
15 50 - 17 30	Plenary session Presentation of case studies on country level approaches and projects dealing with selected issues on Operation & Maintenance - Rural - Urban - Discussions

Wednesday, 20 June 1990	
09 00 - 10 30	Plenary session Presentation of case studies continued Discussions
10 30 10 50	Refreshment break
10 50 - 12 30	Plenary session Presentation of case studies continued Discussions

Anticipated results of block 1

- Main overall problem and constraints identified
- Overall strategies clear
- Key issues outlined
- Strategic objectives discussed

The presentations during the block will provide an overview on the status of O&M in developing countries, and will show how programmes and institutions have tried to solve problems causing poor O&M in order to improve the situation, The results obtained will be discussed to identify possible strategies and activities to be undertaken in the framework of a joint process towards improved O&M.

Block 2: 1.5 days	
Objective:	Identify concrete steps and activitiesneeded to develop a two year work programme encompassing concrete activities at global, country and project level.
Required inputs:	Discussion papers for sub-groups. These papers would identify activities related to a draft framework indicating key issues and strategic objectives.
AGENDA	
Wednesday 20 June 1990	
14 00 - 15 30	Plenary session Presentation of cooperative framework, joint and collaborative approach Discussion Presentation of subjects (issues) to be treated by Task Forces
15 30 - 15 50	Refreshment break
15 50 - 17 30	Task force sessions - Choose speaker, secretary - Begin discussions

Thursday 21 June 1990	
09 00 - 10 30	Continue Task Force sessions - Develop activities including objectives, - Scope of work, and budget
10 30 - 10 50	Refreshment break
10 50 - 12 30	Continue Task Force sessions
12 30 - 14 00	Lunch
14 00 - 15 30	Continue Task Force sessions - Establish priorities
15 30 - 15 50	Refreshment break
15 50 - 17 30	Plenary session Presentation of draft reports by Task Force

In the sub-groups or task forces specific activities would be discussed. Each of the task forces would cover one of the strategic objectives discussed in block 1.
The proposed activities would have to be implemented jointly by agencies, programmes and governments.

The sub-group would prepare a presentation concerning:

- Role of the working group
- Schedule and organization for proposed activities
- Activities needing high priority
- The way the activities will contribute to improved O&M
- Identified resources to carry out the activities
- Additional funding requirements.

Anticipated results of block 2
- Indicative work programme
- Proposed activities
- Required budgetary and other resources
- Proposed roles of working group, agencies and programmes

Block 3: 1 day	
Objective:	To agree on priorities and plan of action on O&M
Required inputs:	- General plan of action - Summary statement for discussion - Results of task force discussions
AGENDA	
Friday 22 June 1990	
09 00 - 10 30	Plenary session Presentation of plan of action Discussion
10 30 - 10 50	Refreshment break
10 50 - 12 30	Plenary session Presentation of Geneva statement - Amendments
12 30 - 14 00	Lunch
14 00 - 15 30	Plenary session - Final statements - Closure

During this block the draft of a general plan of action on O&M will be presented by the chairman of the meeting. Based on the results of Block 2, the priorities will be discussed and the plan of action amended and completed. The conclusions and recommendations of the meeting will be discussed on the basis of a draft summary statement. Final statement by ESAs and country representatives will indicate the engagement of the participants and hopefully show where support for specific activities could possible be offered.

Anticipated results of block 3

- Agreement on the constitution of a working group on Operation and Maintenance and its role.
- Agreement on the main steps, mechanisms and short-term results to be achieved in the framework of an action plan for 10 years.
- Endorsement of the amended summary statement
- Engagement of ESAs and country representatives

7. Case Studies

Case studies to be presented during the working group meeting will highlight ways and means to solve O&M problems, which were identified during the present preparatory meeting.

The cases will cover both urban and rural situations, and preferably reflect experiences in different types of countries, i.e from Asia, Africa, Latin America, within different cultural setting.

OUTLINE FOR CASE DESCRIPTIONS TO BE PRESENTED IN GENEVA (JUNE 1990)

1. **Description of general description of country programme or project**
   - history
   - objectives
   - present status
   - involved agencies
   - donor

2. **Major constraints being addressed to improve O&M**

   - This part will relate to the problem analysis established at IRC.

3. **Strategy adopted**

   - The paper should focus on a particular strategic objective, but indicate relations with other aspects of O&M development.
   - Problems encountered in implementating these strategies.

4. **Results achieved sofar**

The purpose of the case presentations would be to illustrate one of the eight identified main causes of poor O&M by practical examples showing how in the country or programme concerned progress is being made in taking away this particular cause of poor O&M.

Obviously, the countries and programmes could have useful experience concerning other relevant causes of poor O&M, but as the case descriptions are meant to trigger discussions to determine strategies and activities for an action plan on O&M, the case presentations should be clearly focussed on one of the identified causes of poor O&M. Each case presentation would take about 30 minutes. The paper describing the case could therefore be short, preferably about 3-5 pages, annexes not included.

All cases will be presented by DC-national staff, sponsored by an ESA.

Finding solutions to finance O&M

This case presentation could be based on the work of the working group on cost recovery. The purpose would be to highlight the principle of resources coverage rather than cost recovery, based on experiences in Zambia, Malawi and Zimbabwe.

The presentation would illustrate the present constraint by country data, and show what options are being developed for resources coverage. The implications for O&M development will be indicated.

The case could cover both rural and semi-urban examples within the same countries.

ESAs supporting O&M development

This case could be presented by a senior person from a country or a region where many donor agencies have financed projects in the past, and are now involved in the development of O&M systems.

The case could present a comparitive analysis of various rural water supply projects on aspects of O&M. Material for such presentation is available from West Africa, but is mostly in French. A presentation in English could be prepared by an English speaking person from CREPA, CILSS, or CIEH in Ouagadougou.

A similar presentation could be hold by a person from Tanzania, where various donors are active in rural water supply since about 10 to 15 years, these donors have had different approaches in the past, and there have been efforts to develop a more coordinated approach. This process could be described, and the present results for O&M indicated.

It will be explored if Swiss Aid or Danida could support the presentation of a this case.

Appropriate technology being selected to improve O&M

This case presentation could be based on the experience in urban areas in Pakistan, where WHO has been involved in urban water supply.

Another possibility is to present the experience in India. The case would include both water supply and sanitation. In the development of the case, emphasis would be put on the O&M of the technology selected. "Appropriate' should in this case be interpreted as 'maintained and functioning well'. The case should show what were the effects of the use of inappropriate technology in O&M.
The regional water supply and sanitation group in Delhi will take up contact with a suitable person to present the case.

Quality of water supply systems being improved to make O&M development more successful

The case of Nepal (1) (urban) was mentioned to provide elements of an approach to improve the quality of systems, and how O&M systems are being developed as a follow-up of rehabilitation.

The case presentation should clearly show how O&M has improved as a result of improved quality. The presentation could also concern rural water supply in Nepal, in which case UNICEF could perhaps be approached to support the case studies.

Systems rehabilitation contributing to O&M development

This case would provide an example of how O&M problems have been caused by poorly functioning systems.

A possible case could be presented by a participant from Vietnam concerning the drinking water supply system of Hanoi, which is being rehabilitated, reconstructed and extended with FINNIDA assistance.

A possible case to be presented concerning rural water supply could be presented concerning Uganda (UNICEF) supported programme) or Zimbabwe, where GTZ is involved in the sector.

Sector performance problems being addressed to improve O&M.

The presentation could illustrate the problems of sector performance, and show the steps being made towards O&M improvement as a result of efforts to improve the performance of the sector as a whole. The case presented would also make clear how important O&M was as a reason to take up the issue of sector performance.

A possible case concerning the urban water supply sub-sector would be Ethiopia, where GTZ supports efforts to strengthen the sector.

Concerning rural water supply, Sudan would be an interesting case. Possibly this presentation could be supported by CIDA or USAID which also sponsored the country workshop (2) held in May 1989.

Efficiency of O&M institutions being improved

Urban cases to be presented could concern Zambia or Egypt, where GTZ is involved in the sector in institutional developmernt programmes.

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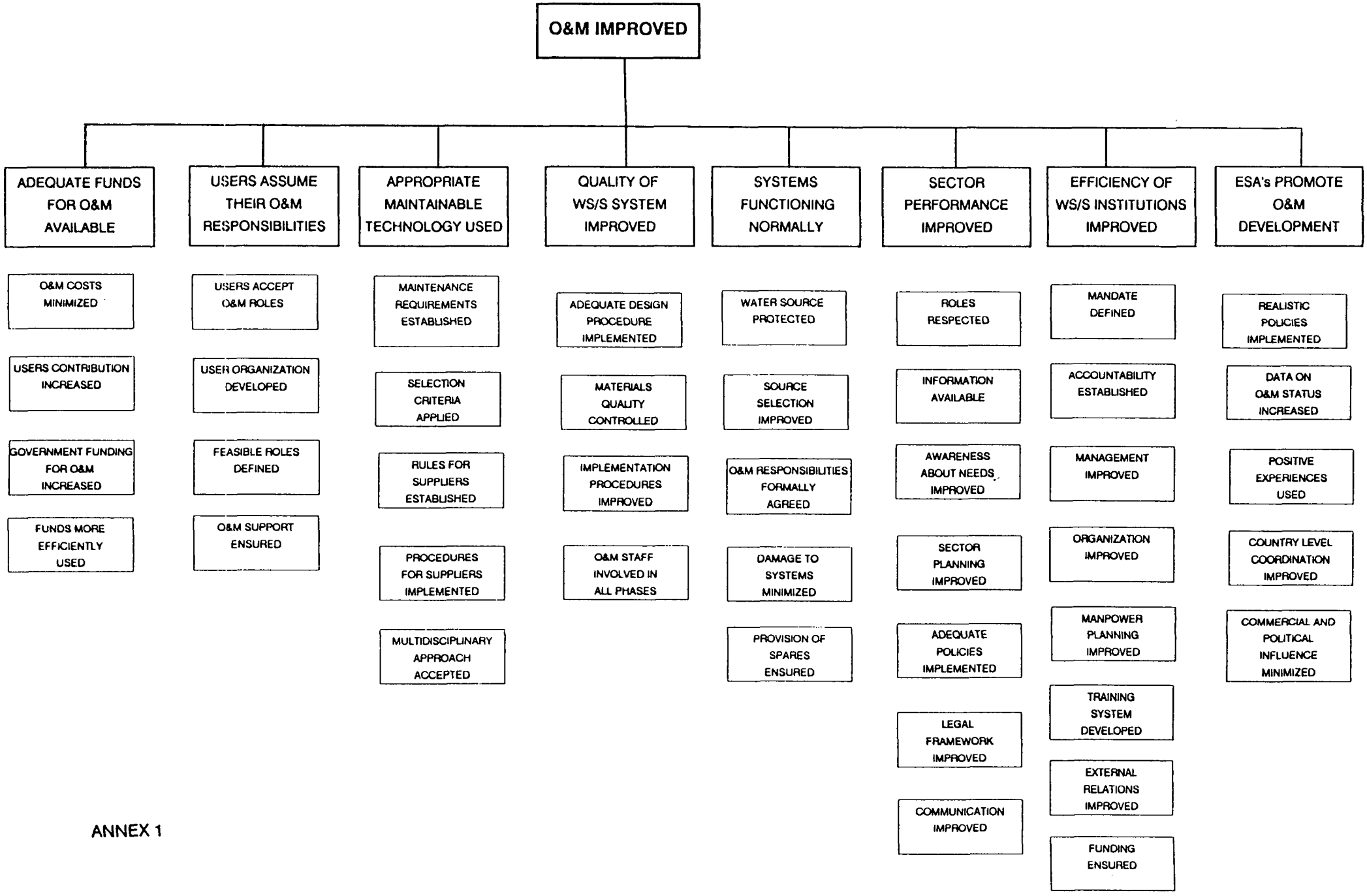
(1) the name mentioned was Tenzing

(2) Sustainable operations and maintenance of rural water supplies in Sudan, WHO/World University Service of Canada, 1989.

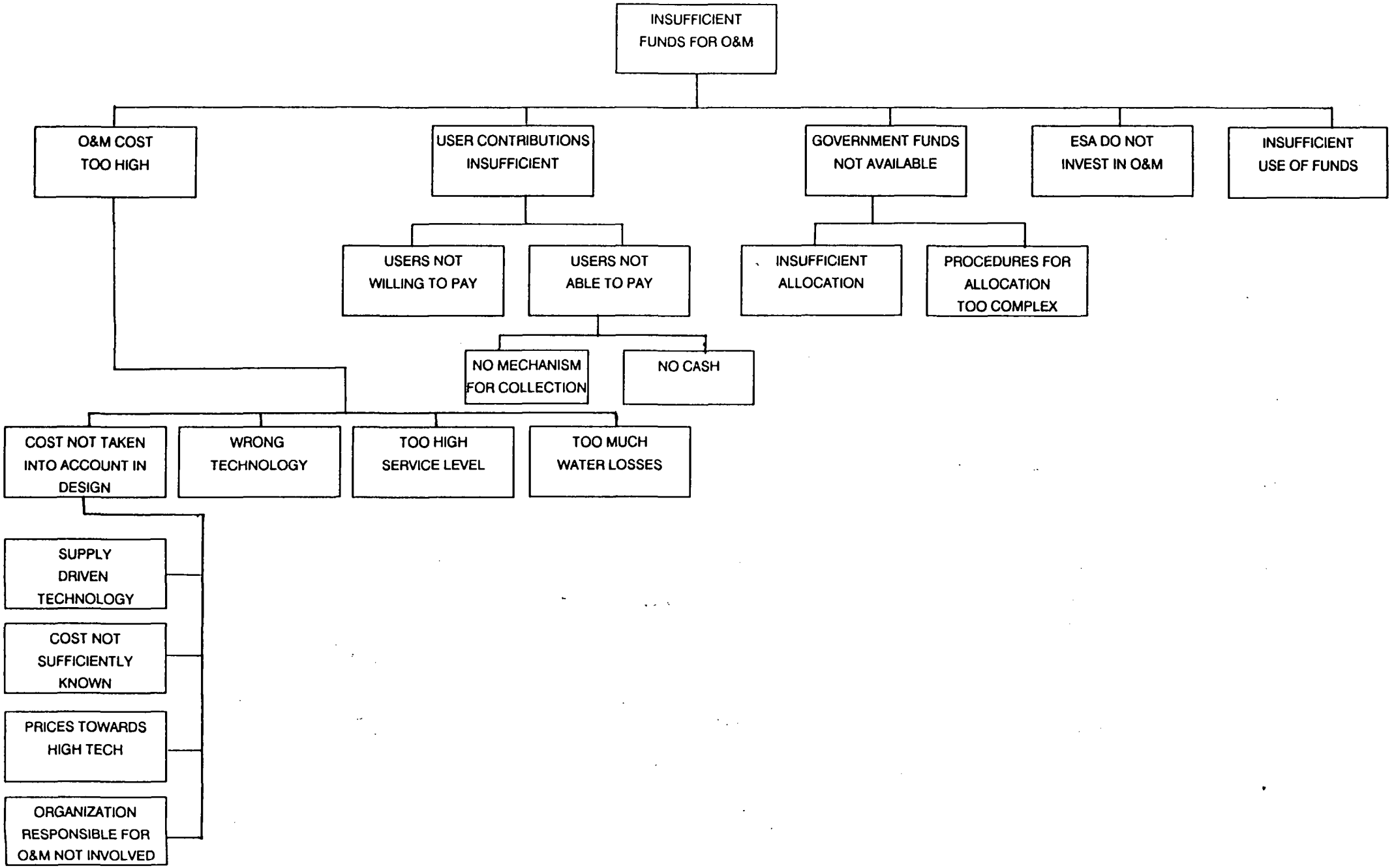
In the rural sub-sector Zaire and Guatemala could be interesting cases. WASH/USAID are involved in programmes in these countries and could possibly support the development of a case.

User roles in O&M being developed effectively

Cases mentioned were Ghana (urban), Malawi (urban and rural), and Benin (rural). Various rural examples can also be noted in West-Africa, for instance Togo. In this last country the french development cooperation (FAC), and the EEC (FED) have supported the development of user-based maintenance systems, which are now being tested. Case presentations concerning ar of the above countries could possibly be supported by the RWSSG of the World Bank in Abidjan. Perhaps IRC could be instrumental in generating support from the Netherlands Government for the development of a case concerning Malawi covering both urban and rural water supply.


O&M IMPROVED
ADEQUATE FUNDS FOR O&M AVAILABLE
USERS ASSUME THEIR O&M RESPONSIBILITIES
APPROPRIATE MAINTAINABLE TECHNOLOGY USED
QUALITY OF WS/S SYSTEM IMPROVED
SYSTEMS FUNCTIONING NORMALLY
SECTOR PERFORMANCE IMPROVED
EFFICIENCY OF WS/S INSTITUTIONS IMPROVED
ESA's PROMOTE O&M DEVELOPMENT
O&M COSTS MINIMIZED
USERS CONTRIBUTION INCREASED
GOVERNMENT FUNDING FOR O&M INCREASED
FUNDS MORE EFFICIENTLY USED
USERS ACCEPT O&M ROLES
USER ORGANIZATION DEVELOPED
FEASIBLE ROLES DEFINED
O&M SUPPORT ENSURED
MAINTENANCE REQUIREMENTS ESTABLISHED
SELECTION CRITERIA APPLIED
RULES FOR SUPPLIERS ESTABLISHED
PROCEDURES FOR SUPPLIERS IMPLEMENTED
MULTIDISCIPLINARY APPROACH ACCEPTED
ADEQUATE DESIGN PROCEDURE IMPLEMENTED
MATERIALS QUALITY CONTROLLED
IMPLEMENTATION PROCEDURES IMPROVED
O&M STAFF INVOLVED IN ALL PHASES
WATER SOURCE PROTECTED
SOURCE SELECTION IMPROVED
O&M RESPONSIBILITIES FORMALLY AGREED
DAMAGE TO SYSTEMS MINIMIZED
PROVISION OF SPARES ENSURED
ROLES RESPECTED
INFORMATION AVAILABLE
AWARENESS ABOUT NEEDS IMPROVED
SECTOR PLANNING IMPROVED
ADEQUATE POLICIES IMPLEMENTED
LEGAL FRAMEWORK IMPROVED
COMMUNICATION IMPROVED
MANDATE DEFINED
ACCOUNTABILITY ESTABLISHED
MANAGEMENT IMPROVED
ORGANIZATION IMPROVED
MANPOWER PLANNING IMPROVED
TRAINING SYSTEM DEVELOPED
EXTERNAL RELATIONS IMPROVED
FUNDING ENSURED
REALISTIC POLICIES IMPLEMENTED
DATA ON O&M STATUS INCREASED
POSITIVE EXPERIENCES USED
COUNTRY LEVEL COORDINATION IMPROVED
COMMERCIAL AND POLITICAL INFLUENCE MINIMIZED

ANNEX 1


INSUFFICIENT FUNDS FOR O&M
O&M COST TOO HIGH
USER CONTRIBUTIONS INSUFFICIENT
GOVERNMENT FUNDS NOT AVAILABLE
ESA DO NOT INVEST IN O&M
INSUFFICIENT USE OF FUNDS
USERS NOT WILLING TO PAY
USERS NOT ABLE TO PAY
INSUFFICIENT ALLOCATION
PROCEDURES FOR ALLOCATION TOO COMPLEX
NO MECHANISM FOR COLLECTION
NO CASH
COST NOT TAKEN INTO ACCOUNT IN DESIGN
WRONG TECHNOLOGY
TOO HIGH SERVICE LEVEL
TOO MUCH WATER LOSSES
SUPPLY DRIVEN TECHNOLOGY
COST NOT SUFFICIENTLY KNOWN
PRICES TOWARDS HIGH TECH
ORGANIZATION RESPONSIBLE FOR O&M NOT INVOLVED

Annex 3

DIVISION OF TASKS FOR THE MEETING OF THE OPERATION AND MAINTENANCE WORKING GROUP

ACTION	DATE	RESPONSIBLE
Reviewing of the list of invited ESAs and national agencies (suggestions should be sent to WHO)	10 March	All
Preparation of a draft announcement of the working group meeting	02 March	WHO
Comments on draft announcement (suggestions should be sent to WHO)	10 March	All
Finalize the announcement of the meeting (including the agenda)	15 March	WHO
Prepare the agenda of the meeting	26 February	WASH IRC
Prepare terms of reference for the "rapporteur" to whom the following tasks will be assigned: to write the third draft of the background document on O&M; to attend the meeting of the O&M working group; to write the proceedings of the meeting	02 March	GTZ
Two-days visit of the "rapporteur" to IRC for reviewing of relevant literature on O&M	19-20 April	IRC
Two-weeks visit of the "rapporteur" to WHO for preparation of the third draft background document including framework for cooperative action, proposal for joint activities, action plan, and basic considerations for the formulation of the "Geneva Statement"	23 April- 04 May	WHO
Distribution of the third draft background document to the members of the organizing committee of the O&M working group meeting	08 May	WHO
Comments on the third draft background document (suggestions should be sent to WHO)	15 May	All

Finalize background document	22 May	WHO Rapporteur
Send second letter of invitation and announcement of the meeting to ESAs and selected national agencies	16 March	WHO
Send background document to confirmed participants	25 May	WHO
Prepare a set of relevant documents to be distributed to the participants of the meeting	04 June	IRC
Dissemination of the meeting through articles in magazines and periodicals	Any time	All
Confirmation of the Chariman (including definition and allocation of funds)	01 April	WB
Confirmation of the moderator (including provision of funds)	01 April	GTZ
Contact and confirmation of Willingness of the rapporteur to this proposed assignment	02 March	IRC
Meeting involving the chairman, rapporteur, moderator and members of the organizing committee the day before the Working Group meeting	18 June	All Rapporteur Moderator Chairman
Preparation of a draft opening Speech	27 April	WHO
Confirmation of ESAs/National Agencies selected by the Organizing Committee for the preparation of case studies for presentation at the working group meeting	01 May	
Preparation of terms of reference for the the preparation of case studies on selected themes	15 March	IRC
Preparation of case studies to be presented at the working group meeting	31 May	
Preparation of at he minutes of the working meeting at IRC	15 March	IRC