

Manila

WORKSHOP ON GOALS AND INDICATORS
FOR
MONITORING AND EVALUATION
FOR
WATER SUPPLY AND SANITATION

25-29 JUNE 1990, GENEVA, WHO

WORKSHOP GOALS

↳ functioning impact

1. Review a framework for monitoring and evaluation based on effective use, sustainability, and replicability.
2. Share experiences and tools for monitoring and evaluation that reflect the framework.
3. Develop key indicators for monitoring and evaluation at the following levels:
 - Community
 - Project/Programme
 - Sector
4. Review implications for monitoring at the global level.
5. Identify a plan of action for the implementation of the workshop recommendations.

SECRETARY
INTERNATIONAL REFERENCE CENTER
FOR COMMUNITY WATER SUPPLY AND
SANITATION (CRS)

WORKSHOP AGENDA

GOALS AND INDICATORS FOR MONITORING AND EVALUATION
FOR
WATER SUPPLY AND SANITATION
25-29 JUNE 1990
WHO, GENEVA

MONDAY, 25 June
2:00-5:30PM

Afternoon

Session 1: Workshop Convening
(1hr 15min)

- Welcome: Dennis Warner, CWS/WHO
 Frank Hartvelt, DGIP/UNDP
- Overview: Siri Melchior, PROWESS/UNDP
- Introductions and Getting Acquainted: Bo Razak, WASH facilitator
- Workshop Goals and Schedule: Bo Razak

COFFEE/TEA BREAK

Session 2: A Framework for Monitoring and Evaluation
(1hr 30min)

- Proposed M&E Framework focusing on effective use, sustainability,
and replicability.
Deepa Narayan-Parker, PROWESS/UNDP
- Group Discussion:
 - Reaction/Feedback on Framework
 - Link to indicators required for each level

Close Day 1: Review Day/Preview Day 2

Workshop Agenda

2

TUESDAY, 26 June
8:30AM-5:00PM

Morning

Session 3: Community Level Indicators
(3hrs 30min)

- Cast Study: Kibwezi - Melvin Woodehouse, AMREF
Presentation and Brief Discussion

- Brainstorm and Rank Indicators (Small Group)

COFFEE/TEA BREAK

- Report from Small Group

- Discuss and Synthesize (Total Group)

LUNCH - 12:00 - 1:00PM

Afternoon

Session 4: Project/Programme Indicators
(4 Hours)

- Tools and Techniques Presentations

"Logframe and Its Application to M&E"
Kristian Laubjerg, DANIDA

"The Challenge of Measuring WID Issues in Water
and Sanitation", Carolyn Hannan-Anderssen, SIDA

- Group Discussion: On above.

COFFEE/TEA BREAK

- Develop/Rank Key Indicators (Small Groups)
(Including internal, institutional indicators)

- Report of Small Groups

- Discuss and Synthesize (Total Group)
To be completed on Wednesday.

Close Day 2: Review Day/Preview Day 3

Workshop Agenda

3

WEDNESDAY, 27 June
(8:30AM-5:00PM)

Morning

Session 4: Project/Programme Indicators

- Continued from previous day
- As time allows, discussion of tools, cases, etc. from participants

LUNCH - 12:00-1:00PM

Afternoon

Session 5: Sector/National Indicators
(3hr 30min)

- Guidelines and Tools
- Andrew Macoun - Joint UNDP/World Bank Project Sector Review Guidelines
- Joseph Christmas - UNICEF - Indicators for National Monitoring

COFFEE/TEA BREAK

- Developing Key Indicators (Small Group)
 - Select from previous levels
 - Add/Modify/Rank
 - Identify Global Issues and Indicators

Close Day ²₃: Review Day/Preview Day ³₄

Workshop Agenda

4

THURSDAY, 28 June
(8:30AM-5:00PM)

Morning

Session 6: PROFILE
(1 hour)

- PROFILE: A Tool for Country Level Monitoring
Ingvar Ahman, WHO
- Discussion/Using PROFILE

COFFEE/TEA BREAK

Session 7: Global Issues and Indicators
(2hr 15min)

- Panel Discussion: "Issues for Global Monitoring"

Frank Hartvelt, DGIP/UNDP
Joseph Christmas, UNICEF
Dennis Warner, CWS/WHO
One Senior National Government Representative
- Total Group: Open Forum - "Ideas for New Mechanisms for M&E"

LUNCH - 12:00-1:00PM

Afternoon

Session 8: Recommendations
(3 hours)

- Develop specific recommendations for M&E for community, project/programme, sector and global levels

Close Day 3: Review Day/Preview Day 4

FRIDAY, 29 June

(8:30AM-12:00noon)

(Allow for carry over from previous session)

Session 9: Defining Actions

(2 hours)

- Each participant will develop a workplan for incorporating recommendations
- Sample ideas for actions will be discussed in total group

COFFEE/TEA BREAK

Session 10: Closing

- Review goals and expectations
- Check for unfinished business
- Closing remarks.

Workshop on Goals and Indicators
for
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for Water Supply and Sanitation
WHO Geneva, 25 - 29 June 1990
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PAPERS

ROSALES

WOODHOUSE

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90 WO

bn 7473

Monitoring and
Evaluation

"Schoon"
origineel
voor
Nicolette
(deze ook terug naar mij)

**The Challenge of Measuring Gender Issues
in Water and Sanitation**

Paper presented at the:

Workshop on Goals and Indicators for
Monitoring and Evaluation for
Water Supply and Sanitation

Geneva, 25-29 June, 1990

WORLD
WATER FOR PEOPLE
AND COMMUNITY DEVELOPMENT
SANITATION

Carolyn Hannan-Andersson

This paper in its entirety remains the responsibility of the author alone and does not constitute the formal position of any organisation.

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INTRODUCTION

Perhaps the only statement about the rural water supply sector that can be made conclusively is that it is difficult to make generalizations. This is due to the variety of concrete situations in different countries; differences in policy and strategy of agencies involved- governments as well as donors and NGOs; and the great variety of project/programme set-ups - eg bilateral, multi-lateral, multi-bi, NGO supported interventions, and other combinations of these. There are large scale national sector programmes, programmes/projects focussed at district level, projects at individual community level, pilot projects, etc. The need for flexibility is clear - in order to be able to respond to the enormous variety of situations.

What I have to say in this paper will not suit all contexts. My experience is with government-to-government bilateral programmes, and is geographically biased to East Africa, in particular Tanzania. I know that the situation in Central and South America, and Asia/Pacific can be quite different - particularly when it comes to the role of government and NGOs.

While this paper deals with the integration of women into water supply and sanitation programmes, and thus necessarily deals with the community, household and individual levels, a broader approach has been utilized. As will be discussed below there are many different actors involved, from central level agencies, to intermediate level actors, (including regional/district government agencies and project organisations), down to community, household and individual levels - the so-called "local level". **It is not enough to simply fix attention on the the local level and expect that development of checklists will automatically lead to more involvement.** This is especially true when local involvement is meant to include women as well as men. There have been a multitude of checklists on women in development produced over the years in different sectors - most of which have had very little practical impact on programme design and implementation. **There is need for development of a policy and strategy and the necessary awareness and methodological skills within all supporting agencies.**

There is also a limitation in simply pulling one element - **evaluation** - out of a complex whole, i.e. **the planning cycle**. There is need to see the whole context and the inter-relatedness of the different inputs. Monitoring and evaluation are both intimately connected with planning and early identification of simple critical indicators. All parts of the planning cycle must be related to policy and strategy.

SIDA has utilized the strategy to focus attention upon itself as organization initially - to develop policy, strategy and methodological tools, including monitoring and evaluation. In this paper I will attempt to share some of SIDA's experiences, as well as some of my own ideas on where we have to focus more attention in the future to achieve the desired integration of women into water supply and sanitation programmes/projects. Monitoring and evaluations is one of the possible tools to achieve this.

1. THE COMPLEX CONTEXT

1.1. Integrated rural water supply programmes

"Integration" in rural water supply programmes/projects involves integration/inclusion of two important "new" ingredients:

- sanitation inputs
- health education inputs

Integration in an "integrated rural water supply and sanitation programme" does not imply integration in the same sense as an "integrated rural development programme" which usually has a multitude of other broader developmental inputs at community level, for example afforestation, health interventions, small-scale industry inputs, etc. This "**demarcation of the field**" with regard to water supply and sanitation programmes/projects is important as it has to do with the need for concentration of efforts.

Development programmes and projects should have as a goal the identification and support of local planning and decision-making and problem-solving capacity. They should support a process (empowerment) at individual, household and community levels so that other problem areas are identified, and the means of tackling with them developed by the individuals, households and communities themselves. Water supply and sanitation only provides an entry point.

Indications of stimulation of other development activities through interventions in water supply and sanitation should not necessarily be interpreted as evidence that these other activities should be included in work plans, or that project personnel should be involved in such activities in the future. It should rather be interpreted as evidence that the approach utilized in the water supply/sanitation/health education programme/project is successful in terms of empowerment.

A second "problem" introduced by the wider concept of improved water supplies combined with sanitation and health education is that of **methodological approach**. Water supply is normally seen as a "public" service- which should be developed and maintained for the community by the community. Sanitation and environmental hygiene are, however, very much issues for the **household and individual levels**. It follows that different approaches may be needed. For this reason some researchers do not advocate integration of sanitation and health education with water supply improvements. However the pros and cons of this will not be discussed here. It will instead be taken as given that programmes/projects attempt to integrate sanitation and health education.

A third aspect is the necessity for **cooperation and coordination of efforts by an increased number of agencies**, often at both central and intermediate levels. This will be discussed in more detail below.

1.2. The institutional set-up

Despite the rhetoric that development is a process which should be based on felt needs and initiated by local communities, and the use of such concepts as "village-level planning" and "community management", the reality is still that many programmes are designed and implemented largely by "outsiders". Efforts are, however, being made to introduce changes in this respect in most programmes today. Important steps are being also being taken in small pilot projects, but application on a wider scale is still slow. A crucial aspect is the need for the "supporting agencies" - both donors and government - to identify and accept new roles where they support a process initiated from within communities.

There is increasing discussion on the **advantages of utilizing NGOs** - channelling all support through them, or working with them as a complement to efforts through government agencies. The value of the work of NGOs is evident. Even in the context this paper is based on, ie. the conventional type of government to government

bilateral cooperation programmes in an East African setting, cooperation with NGOs could be very beneficial. But it is important to recognize that utilizing NGOs often also involves a bypass process, just as effectively as the separate project/programme offices set up by donors frustrated by lack of efficiency and commitment of government agencies.

The starting point in this paper is that it is **both desirable and possible to work for increased integration of women through government agencies in bilateral programmes**. The challenge is to develop the methodology to make this possible.

As mentioned previously, with the increasing use of the broader concept of integrated water supply and sanitation programmes, the institutional set up to be worked through at government level has become more complex. Previously projects/programmes were developed in cooperation with one ministry- in most cases the ministry for water - and all financial support channelled through this agency. Today because of efforts to include health education and sanitation in all water supply development programmes, and because of the increasing awareness of the need for community participation, there are usually at least 3 technical ministries involved in the cooperation. Those usually included - besides the ministry for water resources - are the ministry of health and the ministry of community development (or social services and welfare). In some programmes there is a fourth coordinating agency to work with as well.

This makes cooperation more complicated, time consuming, and more difficult.

-There are often problems of **cooperation between these ministries** since there is not a tradition of cooperation and coordination at any level.

-Problems are created because of the **different levels of competence and influence of the ministries involved**. The ministry of water has usually a more dominant position in a political sense and is a relatively "strong" ministry in terms of technical competence. The ministry of community development or social services is usually weaker in terms of influence, and is sometimes lacking in technical competence. The ministry of health usually comes somewhere in between in terms of both influence and capacity. However both these latter ministries have an advantage in that they have a well-developed out-reach system, usually reaching down to community level, and even to household level. Since the ministry responsible for community development or social welfare usually has responsibility for

participation, the status of the ministry has implications for potential to involve women.

-The ministries have very **different perceptions of what the most important issues are and how to go about working with them**

The levels in the country formal structure

There are five levels to consider when planning development cooperation programmes:

1. central (national)
2. intermediate
3. community
4. **household**
5. **individual**

The "intermediate" level is taken to mean levels such as region, district, province, etc. It is of necessity a simplification, especially since in some cases such as Tanzania, there is both a regional and district level.

The household and individual levels are emphasized in this paper through the use of **broadface**, since these two levels were previously often neglected. Households were sometimes remembered, but the individual was usually always excluded. Once dealing with gender issues the individual level becomes very important - as is both household and individual levels when dealing with issues such as sanitation.

Traditional bilateral water supply programmes were channelled through the national level to community level (with some inputs made by regional/district levels in terms of manpower, equipment, channelling of national resources, etc) These were usually top-down turn-key projects- handed to the communities by the ministry. If households were considered at all, it was presumed that they would automatically be reached because of the contact with the community level.

With decentralisation (at least on paper) in many countries it became politically acceptable to work directly through the intermediate level (eg district). Again inputs were directed to community level - with expectations that households were reached in this manner. There are theoretically more possibilities for community participation when working directly through the intermediate level than through the national level. However it does not occur automatically...

The diagram on the following page illustrates a variety of types of approaches when it comes to cooperation with the different levels.

2. INTEGRATION OF WOMEN INTO WATER SUPPLY AND SANITATION PROGRAMMES

2.1. What do we mean by integration and why do we want it: POLICY

It is important to start with a definition of "integration of women" as meaning **involvement of women alongside men in mainstream development programmes/projects**, rather than the establishment of separate programmes/projects for women. It is also taken here to imply involvement **as actors on the basis of their existing roles**, rather than as simply passive beneficiaries.

It is equally important to be clear **why** we want to achieve "integration of women". Otherwise it is difficult to develop adequate methodology. This is **an important policy question**.

- is it seen as an **equity** issue- women have the right to be involved

- is it a **welfare** issue - women must be assisted to get access to benefits, to be given the solutions to their problems

- is it an **efficiency** issue - women must be involved otherwise programmes/projects fail

- is it an **empowerment** issue - women must be assisted to develop resources necessary to identify and solve their problems themselves.

The chart on the following page (based on the work of Caroline Moser, 1989) illustrates the different policy approaches and the resulting type of programmes supported, as well as potential impact.

Many organizations probably utilize a combination of these policy approaches. The welfare approach is still found in many health programmes, and doubtless can be found in the health education and sanitation components of many water supply programmes. SIDA (the Swedish International Development Authority), for example, utilizes what is called a "modified efficiency" policy approach in its sector programmes, complemented with an "empowerment" policy approach through support to development of local organizations, and hence to local initiatives.

DONOR AGENCY APPROACHES IN WATER SUPPLY PROGRAMMES/PROJECTS

Different levels
in formal structure
in country

Some different donor agency approaches

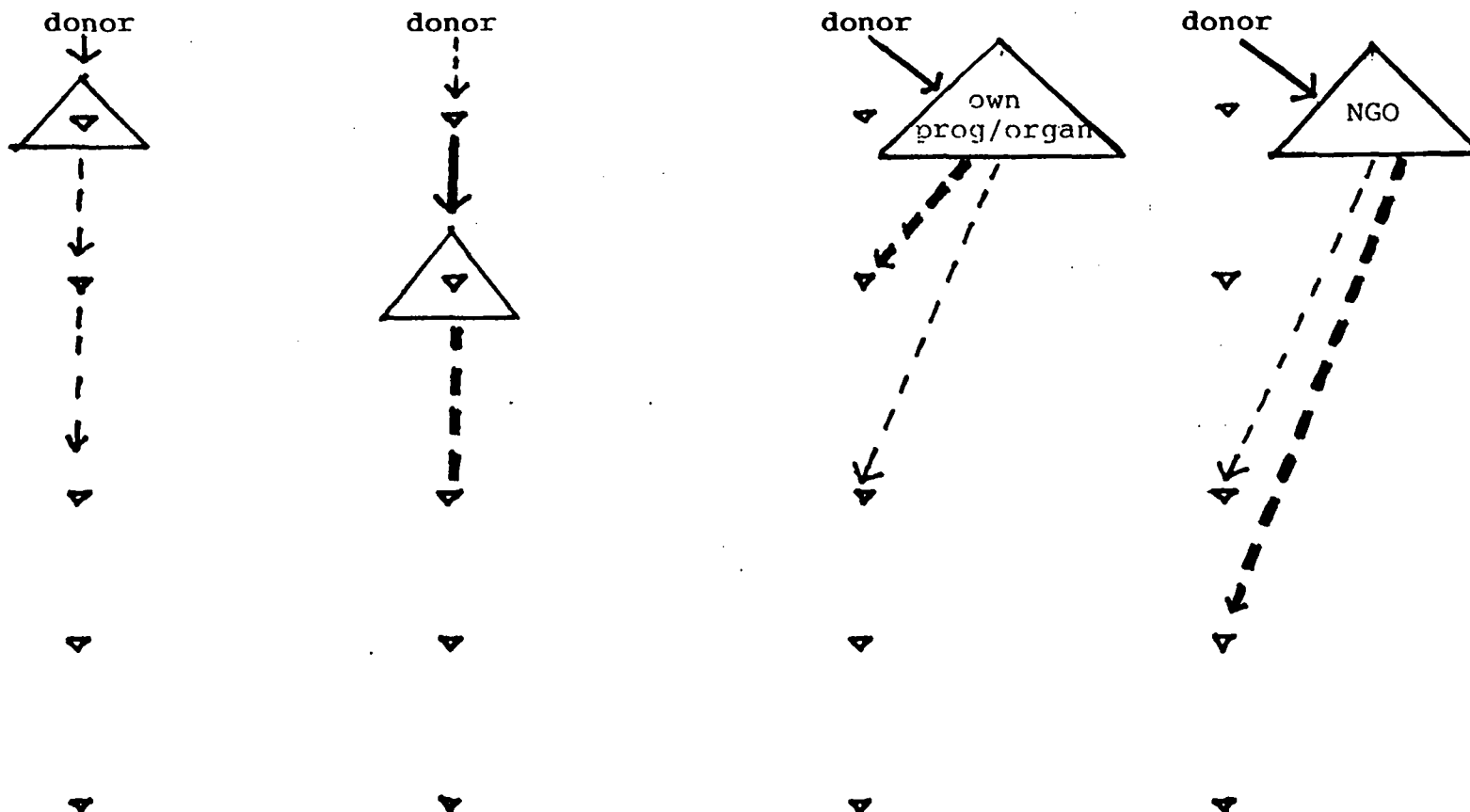
TOP DOWN
TURN KEY
APPROACH

DECENTRALIZED
APPROACH

BYPASS
OWN PROGRAMME
ORGANIZATION

BYPASS
NGO

- . Central
- . Intermediate
province
region
district
- . Community
"village government"
- . HOUSEHOLD
- . INDIVIDUAL



POLICY APPROACHES WOMEN'S DEVELOPMENT

	WELFARE	EQUITY	ANTI-POVERTY	EFFICIENCY	EMPOWERMENT
TIME PERIOD	1950s - 1970s	1975 - 1985	1970s	1980 ...	1975 ...
Starting point	Women's most important role is that as mother	Women's subordinate situation is the basis of all their problems	Poverty is women's most basic problem	Women as a resource are under-utilized Women are needed for the success of development inputs	Lack of access to resources is women's biggest problem
View of women	passive beneficiaries focus on reproductive roles	actors	actors focus on productive roles	key-actors focus on productive roles	actors
Type of programme/project resulting	health projects nutrition family planning child-care	all types	income-generating projects	all types	mobilization information training networking
Comments	uncontroversial popular with govts/donors marginal impact	too controversial "western feminism" threatens power structures	can isolate and marginalize can increase work-load limited impact on development	popular among donor agencies risk for exploitation can increase work-loads	controversial takes distance from western feminism third world approach

(Based on work of C. Moser, 1989)

The sector policy approach is "modified efficiency" in the sense that women are **recognized as actors**; and because of the importance of the **roles women already play** it is recognized that without women's participation programmes/projects cannot succeed. However there is also recognition of the fact that there is a **risk of exploitation** - that women's participation must be **carefully planned** and consideration given to the **totality of their roles** and work burdens. Women's participation alongside men must be an **equitable participation**, for example men and women cannot be utilized for the same work under different conditions, men being paid and women working as volunteers.

2.2. How to go about achieving integration: STRATEGY AND TOOLS

2.2.1. Strategy:

Some important methodological aspects in strategy development are:

- i. **integration into mainstream** rather than separate programmes/projects
- ii. a **gender approach** rather than conventional WID approach
- iii. identification of **where the responsibility for integration of women lies** within the organization.
- iv. **integration into planning procedures** as part of normal routines
- v. **requiring that all personnel have the necessary awareness and skills**, rather than developing gender or WID specialists.

i. Integration into mainstream:

The concept of integration, that is the involvement of women in mainstream programmes/projects is crucial. Establishment of separate programmes/projects or components may achieve some short-term results and benefits, but inevitably fail in achievement of more strategic long-term goals. Experience has also shown in many cases that separate development inputs focussed exclusively on women can lead to further isolation or marginalisation. Women must be involved in community development, alongside men.

ii. A gender approach:*

It is proving to be more effective to utilize a gender approach - focussing on both women and men, rather than a conventional WID approach (which focusses exclusively on women).

Gender as a concept is taken to mean the **socially determined roles** women and men have, as opposed to sex roles which are biologically determined. Gender roles, unlike sex roles, are thus very diverse and depend on the specific socio-cultural setting. Gender roles are also changeable and not static.

Three types of gender roles can be identified:

1. **Reproductive**
2. **Productive**
3. **Community-linked**

Women are involved in all three types of roles. Women's reproductive roles are well known - collection of water and firewood, food processing and preparation, care of children, aged and sick, household maintenance, etc. However women's productive roles - in agriculture and income-generating activities - have until recently been largely invisible.

Men are normally considered to have the major productive role in households- something which may not always be true, especially in rural households. Their reproductive roles - care of family - are few or non-existent. This is an area where change is needed - to try to stimulate more involvement of men with reproductive roles.

The work of Caroline Moser has made an important contribution to development of the third category - community-linked roles. She has clarified the differences between men's and women's roles at this level. Men are normally involved in what is called "politics"- which has a great deal of status, and sometimes other gains, attached to it. Women on the other hand are normally involved in what can be called "community management" - usually in areas where they traditionally play an important role, for example water supplies or health. Women's involvement is usually as unpaid volunteers.

On the basis of knowledge of women's gender roles it is possible to identify two areas of gender needs, which are important in efforts to integrate women.

* The development of a gender approach within SIDA has been greatly assisted by the work of Levy C and Moser C.

- i. **practical gender needs**
- ii. **strategic gender needs**

Practical gender needs are related to areas where women already have clear roles- where women need to **support to carry out their existing gender roles more effectively**. Most sector programmes with WID components or focus on integrating women are geared to assisting women with practical gender needs, for example water supply programmes provide better access to water; health services which assist women with their roles in family health; forestry inputs which provide better access to firewood; agricultural programmes which provide better seeds, extension, etc.

Strategic gender needs exist in areas where women need **changes in existing gender roles**. There could be, for example, need for legislative changes to make it possible for women to own land. Very few programme/projects focus on strategic gender needs - i.e. have the promoting of changes in gender roles- as a clearly defined goal. One exception could be some health programmes/projects which now try to focus efforts on both men and women - to try to stimulate changes in gender roles around family welfare, i.e. to relieve women of some of the unequal burden of responsibility for family welfare through promoting more involvement of men. And also for the very important and practical reason to ensure that health, nutrition and family planning inputs have more chances of success. This should also be the case with health education inputs in water and sanitation programmes/projects - they should be geared to men as well as women.

Having the meeting of strategic gender needs as a clearly defined goal in sector programmes is difficult, for the same reasons as it was difficult for the equity policy approach to succeed. An exclusive focus on strategic gender needs is unacceptable to governments and donors alike. However strategic gender needs can be met without having them set up as important goals. **The question of methodology is crucial in this aspect.**

An example can be taken from the water supply sector. If the goal is to simply to provide women with clean water, and facilitate the carrying out of their practical gender roles, the programme/project could be developed in many different ways, for example in a welfare-oriented, hand-out manner with little practical involvement of women. **Evaluation of impact would then be made, in terms of the more conventional "benefits"** - such as lessened distance to walk, time savings, possible health benefits. However, if the goal is to involve women fully in all aspects of the programme/project - and due emphasis is given to development of suitable methodology for ensuring

this involvement in planning and decision-making, and providing access to contacts, information, training, technology, jobs, etc. - **strategic gender needs can be met at the same time as practical needs are met.** Contribution can be made to the development of a more active role at community level by women, to the development of women's self confidence; to the development of more respect for women's contribution. In this sense where the formal goals are the meeting of practical gender needs, the meeting of strategic gender needs is what could be called a "hidden agenda" - achieved through the programme/project methodology. The issues to be assessed in an evaluation would then include such things as **women's access to and mastery of a new technology; raising of women's educational level through training programmes; acceptance of women's more formal role at community level; women's increased capacity for involvement in developmental programmes/projects at community and household levels.**

With knowledge of gender roles and needs it is possible to make a gender analysis at household and community level -to investigate:

- who does what
- who has responsibility/control
- who has access to what resources
- what needs/problems arise as a result of the gender division of roles and responsibilities
- what potentials can be discerned

On the basis of this gender analysis the planning process should try to achieve the following:

- support women and men in the roles they already have
- ensure that both women and men have access to the necessary resources
- meet any gender needs identified
- support any required changes in gender roles
- try to utilize potentials and overcome constraints.

iii. Identification of where responsibility lies

It is important from an operative point of view to make clear from the beginning where the responsibility for integration lies within the organizations concerned. The ideal institutional set-up is where **all units - and all personnel within these units-** have responsibility for ensuring involvement of both men and women in all aspects of all programmes. The need for developing adequate awareness of the issues and skills for planning is thus apparant. This approach is preferable to establishing separate units or personnel categories, and placing all

responsibility on these "specialists". This latter alternative is often unsuccessful since marginalisation of the issue tends to be the result.

Within SIDA, for example, the responsibility for integration of women into overall country programmes lies with the Regional Secretariats at headquarter level. The Sector Offices have the responsibility for development of gender-specific policies and the required methodology. The Office of Women in Development - which is a very small unit - has a catalytic role - to give advice, support efforts of other units, develop methodology, and provide training in the necessary skills. At Development Cooperation Office (DCO) level the head of the office has overall responsibility, while the Sector Programme Officers have responsibility for their respective sectors. A WID Programme Officer at DCO level has a similar role to the WID Office at headquarters.

iv. Integration into planning routines as part of normal procedures

Another very important aspect is to ensure that gender does not come in as a separate component with separate planning routines, but is included as a normal part of all planning routines. It is counterproductive to develop separate routines since what is required is the **development of a methodology- a manner of analysing**, which should be incorporated into all planning inputs at all stages if women are to be truly integrated into all aspects of mainstream programmes.

Success with a gender approach requires therefore that the planning cycle and planning routines are very well known. The most **strategic entry-points** must be identified and the **necessary tools developed** for utilizing these entry-points. For example, within SIDA the following three formal entry-points have been chosen as most strategic:

- Programme initiation and preparation
- Sector reviews
- Evaluations

Methodology has then to be developed for including gender in these planning inputs, as part of regular routines.

Initiation and preparation has been chosen as strategic since it provides opportunity to try to include gender from the very first stage of the programme, and thus have impact on goal setting, content and methodology, and to ensure that indicators are identified and adequate monitoring systems developed.

Sector reviews are strategic because they occur on a regular basis - every year or every second year. There is thus a good possibility for regular follow-up. Sector reviews are also carried out jointly by government and donors, which means that it is possible to initiate dialogue and begin to work for increased commitment to the issue of gender.

Evaluations are considered important since they provide an opportunity to assess past performance and also make concrete recommendations for future development. It is also possible to utilize evaluations as an entry-point for gender, even where there has not been a concrete goal to involve women in the programmes/projects.

Three key aspects have been identified in the three entry-points, which should be given special attention:

- **Terms of Reference**
- **Team composition**
- **Reporting back**

Efforts must be made to ensure that the **Terms of Reference are gender-aware in a very concrete manner**. It is especially important to ensure that gender comes in in all relevant areas, rather than in a special separate section of the Terms of Reference.

Ideally **all team members should be gender aware**. However as a minimum requirement the team should have at least one gender-aware member. This person should have overall responsibility for incorporating gender. Apart from providing necessary information, this team member should also play a catalyst role in ensuring that all other team members are aware of the need to think in terms of both men and women in whatever they are dealing with.

Gender aspects should be **included in the main body of the report**, and not as a separate report, or annex/appendix.

v. Requiring that all personnel have the necessary awareness and skills

It is short-sighted planning to focus on development of gender specialists who will be called on to make special inputs in different stages of the planning cycle. A more long-term strategy must be to ensure that all categories of personnel, in all involved organizations, have the necessary awareness and skills in gender planning methodology. In this manner gender will be incorporated as a normal part of all planning and

implementation, by economicst, technicians, engineers, as well as social scientists.

2.2.2. Tools

:Certain tools have to be developed to assist in the process of implementation of the chosen policy and strategy. Some examples of such tools are given below:

1. Personnel with catalyst roles

In the initial stages there will be a need for some special catalyst categories, at both headquarters and in the field.

2. Training in gender awareness and gender planning methodology

Probably the most important tool is the training programme. This should not only take upp issues or awareness but should be very operational, providing the necessary planning methodology. The methodology question is the most underdeveloped aspect of gender.

3. Gender analysis or profile at country level

Despite the multitude of WID reports available on most countries, there is very little gender-specific information. The information is also often inaccessible - simply because there is too much information to have to sort through for it to be useful. A country gender analysis or profile which gives a brief summary of main gender issues, trends and priorities, set in the context of the overall macro-economic, socio-economic and political situation, and with information on inputs being made by different agencies- both local and external- can provide a very useful background against which to plan concrete sector inputs.

4. Plan of action

A plan of action with concrete practical suggestions for incorporating gender in specific programme/project activities can be useful, especially if it can be developed in cooperation with counterpart ministries, and followed up on a regular basis. SIDA has such a tool under development for use in all different sectors.

5. Indicators

Development of key indicators for monitoring and evaluation is also an important tool, as will be discussed further on.

2.3. Integration of women: achievements and potential

2.3.1. Some general experience from participation in water supply and sanitation programmes:

The integration of women into the water supply and sanitation sector has to be put in the general context of what has been attempted and achieved in the area of participation generally (i.e. not gender defined.)

The stages in the programme/project cycle which have to be considered are:

1. **Programme/project initiation and preparation**
(planning and decision-making stage)
2. **Implementation**
3. **Operation and Maintenance**
4. **Monitoring and Evaluation**

Programme/project initiation and preparation

Involvement in initiation and preparation of programmes has very often been "turn-key", especially when it has been geared to towards gaining local understanding and acceptance of the programme/project as already decided upon, rather than involvement in the process of planning and decision-making. However, as Narayan-Parker (1989) points out "the emphasis has increasingly shifted from community assistance in government initiatives to government assistance in community initiatives." There is increasing potential for greater involvement of both women and men.

Implementation

This often previously meant provision of labour or local materials, with possibly participation in some form of water committee, which often had unclear definition of roles and responsibilities. Community management is now a popular goal - although the methodology for attainment of such management roles is not well developed. Since water is one of women's major areas of responsibility traditionally, it is important that any attempts to attain community level management should automatically include women.

Operation and maintenance

For various reasons (technical and/or economic impossibility of the existing system) there has been a clear shift from a centralized to a decentralised maintenance system - with emphasis

Handwritten notes:
 - key aspects
 - early points
 - 100%
 - participation
 - personal water
 - community management
 - community level management
 - decentralised maintenance
 - decision making
 - involvement of women

on putting more responsibility and control for maintenance at village level. A great deal has been done in the area of technology development to make this a realistic possibility. However there remains a lot to be done in terms of increasing potential at community level, especially when it comes to involvement of women.

In the shifts from the central government's and supporting agency's dominant role to more responsibility and involvement at community and household level, it is extremely important to have a gender perspective. Both women and men must be given the possibility for full and active participation. It is especially important in the water sector because of the key role women have traditionally played. It is a negative development for women if men begin to play a dominant managerial role in a women-oriented sector, and women come into a dependency role in an area where they have previously had independent responsible roles.

2.3.2. Potential participation at community level:

There are indications that the potential for involvement of both women and men in water supply and sanitation programmes has increased considerably in recent years. Some of the roles which both women and men can play during the different stages of the planning cycle are listed below:

1. Initiation and preparation:

- attendance at meetings
- participation in committees
- participation in HRD - training programmes

2. Implementation:

- provision of labour (paid or unpaid)
- provision of local resources/materials
- formal work-force participation (eg builders)
- participation on committees

3. Operation and maintenance:

In positions such as-

- pump attendants (mechanics)
- site caretakers
- health workers
- store-keepers
- committee members

4. Monitoring and Evaluation:

- in training inputs
- as team members
- as interviewees
- as recipients of information
- in follow-up

A summary of some of the concrete actions that have been attempted in many programmes, as well as some suggestions for what could be further developed in the future, is presented in Annex 1.

3. MONITORING AND EVALUATION

3.1. Evaluation - the process

Evaluation should be seen as an on-going process, rather than as a one-time intervention. Each decision made in a programme/project is based on some form of monitoring and evaluation. Annual reports, annual reviews, etc, are part of this on-going process. If relevant indicators can be identified early on in the planning stage, evaluation can become a normal part of programme/project routines through regular monitoring, for example through record-keeping, collection of statistics, etc.

Evaluation should ideally be **"a natural built-in process...which provides timely, relevant information to those who need to make decisions"**. (Rugh, 1986). The objective is to create a steady flow of basic information essential to decision-making, without overloading the system.

Monitoring and evaluation as a process can be illustrated through the diagram on the following page.

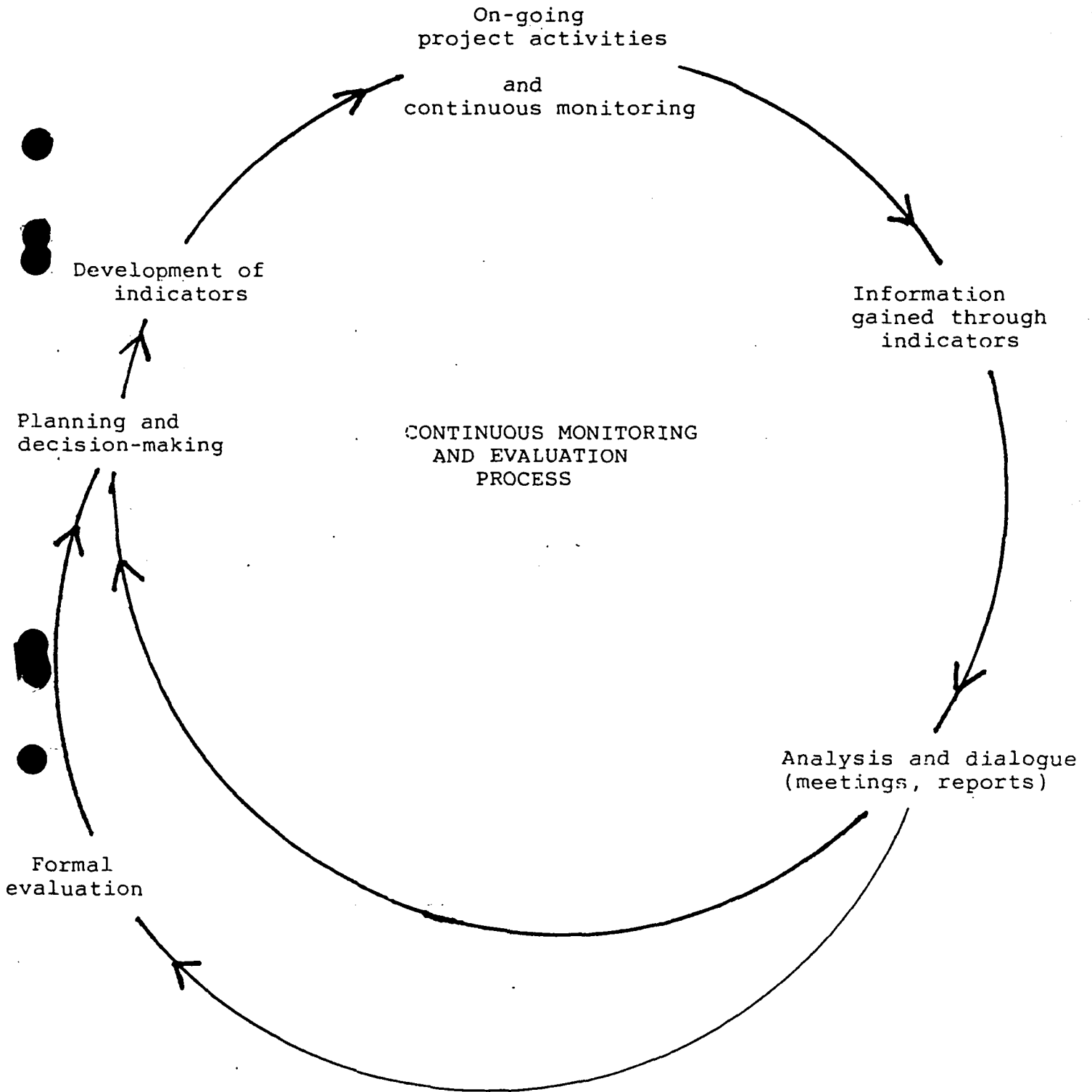
3.2. Formal evaluations: for whom, by whom, for what purpose?

A more in-depth, detailed review is necessary from time to time. This is what can be called a formal evaluation. A formal evaluation should, ideally, be able to draw heavily on the accumulated information from the on-going informal evaluation process.

Purpose of formal evaluations

- Formal evaluations are often carried out
- at the end of activities
 - mid-way, to prepare a new phase

MONITORING AND EVALUATION: THE PROCESS



- when, for different reasons, basic decisions have to be made about future directions

An evaluation may have the following objectives:

- **assessment of achievement of objectives**
(but note that the objectives themselves may need evaluation)
- **assessment of progress** and suggestions for necessary improvements
- provide information for **planning further development**

Target group

Conventionally the target group has been seen as the "outsiders" - the financial supporters, the technicians involved in implementation, the government, etc. **Project personnel** have been seen less as a target group, and normally **communities, households and individuals** - men and women, have not been thought of at all in this respect. In many cases the latter groups do not even get access to the information gathered during the evaluation. Project personnel and communities, households and individuals must be seen more clearly as target groups.

The evaluators

The normal practice has been to send in a team of "outside experts". A failing in many teams has been the lack of any member qualified to give adequate consideration to social-cultural aspects (let alone gender aspects)- i.e. what the communities and households (gender disaggregated) feel. There is an increasing tendency to include a social scientist, and to try to include at least one woman on each team. Another increasing trend is to try to include local expertise.

The need to get an objective picture of the situation (which is not always obtained through the exclusive use of outsiders) should not mean that local-level personnel and communities cannot be involved. There is a need to **develop a methodology for adequate self-evaluation inputs** by these two groups in formal evaluations. This would provide a valuable complement to the information provided by other expertise - local and foreign "outsiders". It would also make the whole formal evaluation process more meaningful to both personnel and communities. Participatory evaluation can also be seen as a tool to bring about more real participation in the programme as a whole.

There is general consensus on the value of

participatory evaluation. It can lead to the development of analytical skills needed at community level in order to be able to identify and deal with problems, needs and establish priorities. It also gives the communities and households the possibility to assess the performance of development inputs which affect them directly. In the short-term participatory evaluation can be expected to lead to increased involvement in the programmes being evaluated, and in the long-term to increased involvement in development at community level. That there is potential for developing participatory evaluation is also clear. **"It is a myth that only an "evaluation specialist" can do a good objective evaluation. An analytical approach, good practical experience, and a broad, objective outlook can be found in most communities, and in project field staff."** (Case-Davis, 1989)

The development of participatory evaluation methodology in an on-going monitoring and evaluation process, could increase the potential for involvement of women in all aspects of programmes, provided conscious efforts are made to include them from the beginning.

3.3. Methodology questions

It is decidedly easier to count handpumps or standpoints, or to describe/discuss activities, than it is to assess impact and benefits, levels of real participation, perceptions of participants, etc.

If participatory evaluation is to be attempted - or even if the objective is simply to try to give more consideration to social-cultural aspects - several types of methodology will probably need to be utilized. For example, formal interviews, surveys, small group meetings, observation, etc.

What is needed is more the development of an analytical methodology, rather than a standard set of questions or indicators.

Methodology for participatory evaluation is under development- at least in terms of what can be done at community level. However lists of what can be done at community level are of little practical use if the necessary skills are not found in supporting agencies, and those requesting and financing evaluations. Training is required for those to be involved from community and project level.

Indicators:

Choice of key indicators for on-going monitoring/evaluation is crucial. Two factors are important:

- simple*
- a) there should be **few indicators**
 - b) they should be the **most critical ones** for achievement of goals and further development

It is extremely important to "**balance the need to know with the ability to find out**". (Rugh, 1986) To this can be added **the ability to utilize**. Attempts should only be made to measure what available skills/resources can find out and utilize. Badly collected, inadequate or poorly presented statistics can do more harm than good. Over-burdening of programme/project personnel must also be avoided. It is a waste of resources to collect more statistics at programme/project level than can be handled satisfactorily.

Dissemination

There is a challenge in how to go about presenting the information in a meaningful manner to the different target groups, especially the local level. At the very least there must be a summary translated into the local language. Another minimum requirement should be discussion around the report at both community and local project level through a workshop or seminar. Ideally similar seminars/workshops would have been held before and during the evaluation to discuss terms of reference, implementation, etc.

4. MONITORING AND EVALUATION OF THE INTEGRATION OF WOMEN IN WATER AND SANITATION PROGRAMMES/PROJECTS

4.1. What has been done generally in the water and sanitation sector

A great deal of work has been put into development of procedures for monitoring and evaluation, both on a general level and within different sectors, eg forestry, health, etc., as is illustrated by some of the references in the bibliography. Within the water sector an excellent starting point has been provided by the **Minimum Evaluation Procedure (MEP)** (WHO 1985). The key indicators identified here are:

- **functioning**
- **utilization**
- **impact**

In the UNDP/PROWESS programme the over-riding goal is identified as **achieving effective and sustainable utilization through strategies which**

are replicable. (Narayan-Parker, 1989) Further progress has been made with the development of these three key indicators:

- effective use
- sustainability
- replicability

The goal now must be to make these indicators gender-specific. The indicators can be presented in a gender-specific manner but this would probably not be sufficient to bring about the required changes in awareness and methodological skills. It would be necessary to **develop a training programme** to stimulate development of awareness and skills in utilization of the indicators. This type of training would be needed for policy-makers and administrators in governments and all supportive agencies, at all levels, and for technicians, extension staff, as well as the communities involved.

There will also be a need to develop other gender-specific indicators required to be able to assess achievement of objectives and progress with integration of women. This is an area where very little has been done so far. It will be necessary to go beyond the assessment of more conventional "benefits" for women such as lessening of work load through shorter distance, releasing of resources for other areas through time savings, and the controversial and problematic health benefits. Some form of **assessment of more long-term strategic impact on women at household, community and project levels**, needs to be made.

In discussions of the type of gender-specific indicators required an important step is made away from the past trend for discussions on gender in evaluations to simply "evaluate past evaluations", instead of developing the necessary methodology for making evaluations more gender aware. What is important to keep in mind is, however, that what is being sought is **not a blueprint but rather a methodological model** which can be utilized in, and adapted to, many different situations.

4.2. The reality we work with today

To a great extent, in parts of this paper I am dealing with an ideal situation where new programmes/projects are being planned, which will establish monitoring and evaluation set-ups from the initial planning stage. The reality is, of course, that evaluations being carried out today are assessing programmes/projects which have been on-going for many years - where baseline data is very inadequate, indicators never identified, and as a result monitoring systems never established. On top of this even through organizations have

general policies regarding integration of women into development these policies are often not reflected in the objectives of concrete sector policies and programmes. The challenge here is to utilize evaluations as tools in a constructive manner to introduce integration of women

Evaluation in on-going programmes/projects

As pointed out earlier, SIDA today gives priority to formal evaluations as an entry-point for gender discussions. These evaluations are usually situation analyses rather than impact analyses. Some of the types of issues which have been raised in relation to gender are illustrated in Annex 2. As mentioned previously SIDA also focusses attention on the three key aspects:

- adequate **Terms of Reference**
- **gender competent team**
- adequate **reporting back**

If these formal evaluations are developed as a process it is possible to make significant achievements. Two important aspects have to be considered, the necessity to be **constructive in approach**, and the need to **emphasize follow-up**. In situations where integration of women has not been a concrete programme/project goal it is of little use to simply point to failure to consider women. The report can instead, point to potential for future action, identify all gender-specific data available, and identify important knowledge gaps. If follow-up is adequate the report can be utilized to give rise to dialogue at all levels which can lead to appropriate changes.

Again the question of methodology is crucial since it is not simply enough to try to give special emphasis to women, in a separate section. **Gender is an issue, a method of analysing, which should pervade the whole report**. In one recent evaluation carried out great efforts were made to consider women, but the report could only be described as gender-blind. The main part of the report focussed on the household level (where it was ascertained that 90% of respondents were women- for different reasons). A separate section was included on poor families (where it was reported that female-headed households dominated). Finally a separate section was provided on women (as a vulnerable group). Three sections provided similar information on women. There was thus an overloading with information and yet no gender conclusions were drawn. It would be preferable to have gender pervading the whole report. There is no need for separate sections.

4.3 Planning for the future

To incorporate gender into programmes/projects three types of information are required at different stages, and all three types are interrelated.

1. **Base-line information** necessary for adequate **planning and decision-making** with full participation of both men and women, and development of adequate **indicators** for monitoring and evaluation.
2. Information on **strategy/methodological approach in implementation**- how to go about stimulating and supporting women's involvement.
3. **Indicators** to be included in **on-going monitoring and evaluation**, and included in more **formal evaluations**.

It is typical that many on-going programmes today have not had adequate baseline data, which has meant that there has been a weakness right through the programme cycle. For this reason it is not possible to isolate monitoring/evaluation from the total project cycle. Monitoring and evaluation have roots in the planning and decision-making stage.

1. Baseline information

The following kinds of gender-specific information are important to collect:

at household level:

- division of labour
- time budget information
- division of decision-making
- information channels
- income sources and utilization
- consumption patterns
- access to resources: technology, credit, HRD, extension
- labour productivity levels
- participation in community events
- economic participation indicators:
 - agriculture
 - formal sector
 - informal sector
- human resources indicators: education levels
health/nutrition
family size

at community level:

- information channels (formal and non-formal)
- decision-making processes (formal and non-formal)
- community activities and gender participation
- organizations active in community

2. Methodological approach in implementation

In this area a great deal has been done at community and sometimes household level. If the baseline data is adequate and if the approach has been **operative rather than simply descriptive** the information provided should facilitate development of a suitable methodology for implementation.

Efforts to ensure an adequate knowledge base for integration fo women should be on-going throughout the entire planning process. Information needs may have been insufficiently met initially, or information collected become out-dated. There is also a continuous need for collection and analysis of data, to be able to measure the success of the chosen methodology.

Some concrete examples of the types of methodological inputs required are given below:

Exemple 1:**Objective:**

To ensure that women receive all information given, and have possibility to make contributions to planning and decision-making, through village meetings.

Information provided through the baseline:

- women's workload and balancing of roles make it difficult for them to attend meetings at certain times of the day, or in certain periods of the agricultural season
- women are not normally reached with information on meetings/community events
- women are not normally active at meetings they do attend, because active participation is frowned upon and/or because they do not have enough background information
- women have difficulties to concentrate because of having to mind children at the same time

Methodology developed:

- a) to ensure that women are reached with information on meetings:
 - through calling special meetings
 - through advertising meetings with posters/loudspeakers etc
- b) to ensure that meetings are held at convenient times
- c) to develop means of getting sufficient background information to women
 - through holding separate meetings for women well in advance to give them time to discuss and develop opinions
- d) to find ways for women to get their opinions over at meetings
 - through supporting individual women prepared to speak out
 - through finding male spokesmen accepted by women and prepared to present the women's views
 - through project staff presenting the women's opinions
- e) to solve child-care problems
 - through holding meetings when school children are at home and can take care of smaller children
 - providing child-care facilities

Exemple 2:**Objective:**

To involve women in human resources development, for example training as technicians

Information provided through the baseline:

- women have total responsibility for reproductive activities and a major share of responsibility for production, which means they will not be released easily from these duties for long periods, and not at all in certain agricultural periods.
- because of women's subordinate position it will be difficult to get men to permit them to travel long distances from home, for long periods
- women have total responsibility for young children and because of breast-feeding cannot be separated from them
- women have difficulties to compete with men because they lack some of the required qualifications, self-confidence and experience

Methodology developed:

- a) to adapt time and location of training courses
 - hold several shorter courses rather than one long course
 - locate training as close to village as possible
 - time courses to suit the agricultural season
- b) provide child-care facilities to allow women to attend with small children
- c) ensure that women have possibility to compete with men
 - reduce qualifications and adapt training as necessary
 - provide women with an "introductory course" to allow them to catch up with men
- d) reduce suspicion about training programmes
 - advertise clearly what the training is about
 - allow husbands to visit course centre before training

3. Monitoring and evaluation

The indicators developed to facilitate an on-going process of monitoring and evaluation should include **gender-specific information on functioning, utilization and impact** and the indicators already identified:

- **efficient use**
- **sustainability**
- **replicability**

Efficient or effective utilization is described as economic, hygienic and consistent use of facilities to maximize benefits without having negative consequences. Sustainability is broadly defined as development of the problem solving capacity at community and agency levels. Replicability implies optimal use of local resources building on indigenous knowledge systems, culture, institutions and personnel.

There are gender implications in all these areas which must be brought out more clearly. An attempt to illustrate some of the possible gender aspects is found in annex 3.

The following aspects need special attention in gender-aware monitoring and evaluation:

- a) access to and control over resources provided:**
 - information
 - training/skills
 - technology
 - employment opportunities- income

- credit (eg for latrines)

b) control over decision-making
at both household and community levels

c) Human Resources Development
particularly related to access to:
new technology
new roles
new skills

d) stimulation of other development activities

e) Development of skills/competence
especially in relation to analytical and problem-solving capacity

f) Impact on status in the community
through new leadership roles, increased production leading to cash income, etc

g) Changes in self-perception
relating to their roles in the water and sanitation section, in particular with regard to leadership and management - but also on a wider level in the community generally

h) Changes in work situation
- time budget
- impact on productive roles
- impact on reproductive roles
- impact on balancing of roles
- expansion into new areas

i) Possible indications of health impact
relating to utilization of water in household and hygienic practices at household level, as well as possible impact on general health status of new roles, and possible energy savings.

The aspects of sustainability and replicability can also be applied in the area of integration of women.

Sustainability:

Have women the possibility to sustain the achievements in terms of:

- access to resources
 - changes in economic situation
 - changes in status/influence at household and community levels
- once implementation is complete and supportive staff withdrawn.

Replicability:

Is there a real possibility for women to carry over awareness and skills developed into other areas in household and community?

Need for training programmes

As pointed out earlier the development of checklists or lists of indicators will have little impact if there is not sufficient commitment to them, or competence to use them. It is essential that intermediate level personnel are well trained in monitoring and evaluation techniques - and where participatory evaluation is to be developed, trained in the necessary skills for this approach. In a participatory evaluation set-up there will also be a need for some training of communities to allow them to participate successfully. Policy discussions at central level will be crucial if gender aware monitoring and evaluation as a process is to be established.

5. SUMMARY OF CONCLUSIONS

In a discussion on monitoring and evaluation of the involvement of women in water supply and sanitation programmes, it is important to look at the whole "women in development" issue in a broad sense - i.e. the **policy approach** (goals and ideological framework), the **strategy** (action plan and methodology) and necessary **tools** (one of which could be indicators for monitoring and evaluation) Aspects such as the need for a **gender approach** (focus on men and women rather than an exclusive focus on women), and **integration into mainstream** programmes rather than development of separate programmes, should be clearly established. As should the need to ensure that efforts to involve women are undertaken as **part of normal planning routines** by all personnel. **Training in gender awareness and gender planning methodology** thus becomes crucial for the attainment of goals.

Ironically one of the main constraints to achievements in this area has been due to an exclusive focus on community and household levels, and the neglect of all other levels, both above and below. The "institutional set-up" is complex, with many actors working at several different levels. Consideration must be given to the **roles of all actors at all levels** in the development of gender in monitoring and evaluation as an on-going process throughout the whole programme cycle.

The policy makers and project personnel at the different levels must be brought along in the process of change. There is a need for more **dialogue with policy makers at central level**, to gain more commitment to policy and strategy approaches. There is also an urgent need for **dialogue and training at the intermediate level**

for project personnel. Unless the intermediate level actors are committed and competent, achievements will remain limited, despite the existence of well-developed and relevant indicators. .

It is not constructive from a gender point of view to continue to only talk in collective terms, for example "households", "consumers". There is a need for more **gender-specific information** - information on men and women, their roles and responsibilities, access to resources, special needs, potentials, etc. Households must be gender disaggregated.

Since **evaluation is a process intimately linked to all other parts of the planning cycle**, it must be placed in its broader context if discussions are to be useful. Establishment of goals and priorities are made in the programme initiation and preparation stage, as is the identification of key indicators. These have obvious implications for monitoring and evaluation.

Evaluation can be developed as a tool to promote participation, especially if self-evaluation or participatory evaluation as a methodology is introduced. Both women and men should be involved in this process. Development of methodology and training programmes will be crucial.

The **operationalisation of gender into monitoring and evaluation** is the important "next step". The indicators identified by PROWESS - efficient use, sustainability and replicability - must be taken from the collective household level to the gender-specific level. Other gender-specific indicators may need to be developed. Key areas where special gender-specific attention is needed include:

- access to and control over resources
- decision-making, leadership and management roles
- human resources development
- development of competence/skills
- stimulation of other development
- changes in work situation
- changes in status in community
- changes in self perception

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MONITORING AND EVALUATION OF A PROJECT'S EFFECTIVENESS

In community water supply and sanitation projects, the management usually restricts itself to monitor and evaluate the project's efficiency, i.e., the direct progress and its immediate outputs. Although a more extended evaluation, which includes the systematic registration of the project's effects (effectiveness and impact) would be desirable, the management mostly omits it, for considerations of its complexity along with excessive expenses and additional resources. - There is an example currently in practice proves how it is possible to achieve the evaluation of a project's effectiveness without external support for the project and with no extra costs. The PROPAR monitoring and evaluation system (MES), based on objectively verifiable indicators, is run by the project's own personnel and contributes effectively to the improvement of the project management. In addition, the MES supplies some information about the project's (health-)impact and is therefore an excellent base for high level decisions for both the national policy makers and the external support agency.

INTRODUCTION

PROPAR (Proyecto de Pozos y Acueductos Rurales) is a community water supply and sanitation program in northern Honduras. Like other similar projects in developing countries all over the world, it is part of the national strategy to achieve the aims of the International Drinking Water Supply and Sanitation Decade (1981 - 1990). Co-financed by the Honduran and Swiss governments (Directorate of Development Cooperation and Humanitarian Aid, SDC), PROPAR is run by the Honduran Ministry of Health and therefore is completely integrated in its institutional structure. This implies the support of the Ministry's strategy of rural primary health care, i.e., the PROPAR health-promoters in addition to the project specific activities (water supply, sanitation and hygiene education) also undertake functions concerning child survival programs like diarrheal disease control, immunopreventable diseases (vaccination), acute respiratory infection reduction and others.

In view of this high institutional integration on the one hand, and the independent project management on the other hand, PROPAR created an additional internal instrument to measure not only the project's progress and efficiency, but also the project's effects (effectiveness) and its long-term improvements on the health status of the beneficiaries (impact).

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THE GENERAL MONITORING AND EVALUATION FRAMEWORK

Proceeding from the general conceptual monitoring and evaluation framework used by the Swiss SDC to monitor and evaluate development projects (cf. table 1), PROPAR decided to concentrate on the elaboration of a monitoring and evaluation system (MES) for effectiveness, including some indicators of universal public health significance (health impact) due to the following reasons:

- a) For the monitoring of the project's efficiency, i.e. the control of the efficient operation of activities under optimal use of the available inputs, PROPAR already had a tool in practice and that had proved to be useful.
- b) Experiences show that a sensible health impact evaluation requires complex study design and extensive sample sizes to be statistically accurate, and therefore depends on external project support along with substantial extra costs.
- c) In contrast, the effectiveness of a project can be achieved through an adequate MES without additional external resources and represents a supplementary method to improve the project management and to evaluate the sustainability of the project's effects.

[Table 1]

PLANNING AS BASIS AND INDICATORS AS MEANS OF MEASUREMENT FOR THE MES

Using the ZOPP 1) planning method, in 1988 PROPAR was replanned to prepare the oncoming project phase (1989 - 91). Constructed in different phases, the product of the joint large analysis and planning work is a logical planning matrix which depicts the basic structure of the overall project: the hierarchy of objectives (overall goal, purpose of the project, and results/outputs) as well as their logical relationship to the indicators, activities, the given means of verification, and the important assumptions (external influences representing a risk for implementation).

1) ZOPP is the acronym for the German "Zielorientierte Projektplanung" (objectives-orientated project planning).

The central feature of monitoring is the measurement and verification of the operation of activities, the performance (outputs and effects) and the impact of a project. Meanwhile, activities are directly measurable and controllable, objectives (expected results, project purpose and overall goal) can only be indirectly observed and measured because they mostly produce outputs and effects in complex situations. This requires indicators, i.e., the specification of variables that will register indirectly the real situation. Indicators reflect both qualitatively and quantitatively measurable changes of an existing situation, classified as subjectively valuable and objectively verifiable indicators, respectively.

THE PROPAR MES OF EFFECTIVENESS

The ZOPP method exclusively considers objectively verifiable indicators to guarantee an independent and correct repetition of the indicators' measuring process. On this precondition the PROPAR planning team stated indicators for all objective levels by applying the following procedure (see table 2):

- a) search of a criterion to describe the development of a situation
- b) formulation of a precise indicator to enable the application of the criterion
- c) magnification of the indicator: definition of absolute (limiting) values
- d) identification of means of verification.

[table 2]

A detailed study of table 2, the synopsis of objectives - indicators (-results), shows some indicators on an overall goal level (cases of diarrhea and infant/child mortality rates). These permit PROPAR to approximate the improvement in health status of the target group (health impact).

However, the majority of the indicators is related to project purpose and the result/output level, and is therefore focused on measuring the effective-ness of PROPAR's performance.

According to the kind of objective, the indicators belong to various classes:

- sociological (e.g. women participation)
- socio-economical (e.g. financial contribution in the construction of water supply systems by municipal authorities and/or politicians)
- economical (e.g. direct institutional construction cost per beneficiary)
- technical (e.g. quality of construction of the systems).

In order to assure the full incorporation of an objective's content sometimes it has been necessary to compliment the key indicators with additional proxy and auxiliary indicators. Particularity the measurement of technical aspects has required the use of indicators composed of several subordinated (technical) criteria in form of checklists (cf. table 3).

Also, considering the project's limited (human) resources, part of the data is being gathered by applying the sample test method on a systematic and non-random basis. Selective criteria are, for example, the promoter responsible for the target group, together with the age and location of their constructed water and sanitation systems. Therefore, the MES data is not scientifically based, and the MES results show relative tendencies rather than absolute values.

Thus it is evident that the PROPAR MES (of effectiveness) is not a complete reflection of the project's reality, but rather it consists of key indicators orientated on objective verification and simple data gathering, which implies a few extra expenses to guarantee a non-equivocal interpretation, and basically to assure its feasibility: "It is better to be approximately right than precisely wrong".

DISCUSSION OF 1988 AND 1989 MES RESULTS

The application of the MES in 1988-89 made it possible not only to compare the obtained results of the monitored information of the two years, but also to test the aptitude of the MES in general, and more specifically the feasibility of data collection by project personnel and the validity of the defined indicators for the project objectives.

A selective analysis of the monitored information (cf. table 2) shows the facilities supplied by the SME. For example, the expected project output No. 2 (importance of potable water and sanitation recognized by authorities) registers an improvement, e.g., the financial participation of mayors and other politicians in the construction increased, showing the project's efforts in public relation accumulated over the two years.

In contrast to this, the well program and the activities in operation and maintenance (expected project outputs No. 4 and 5) in 1989 were slightly less effective than in 1988. The disappointing results can be explained in part by a decrease in morale of the project personnel due to delays in salary payments. Because of this inconvenience, Honduran government employees concentrated their efforts on the essential activities which in the case of PROPAR, meant that the promoters tended to uphold the performance

in the construction activities and neglected less important responsibilities in their opinion such as: hygiene education or the operation and maintenance program.- More specifically, the shallow well project suffered in the lowlands from poor groundwater conditions due to floods and high concentrations of iron and manganese oxide, as well as socio-economical problems stemming from the national economical crisis: Because of the people's former higher living standards, a simple hand pump often represents a lower class water system, even if currently their financial possibilities only suffice for operation and maintenance of such a hand pump.

[TABLE 3]

THE VALUE OF THE MES FOR THE PROJECT MANAGEMENT

This brief discussion of some aspects of the processed MES data shows the objectively verifiable indicators' value for the project. Although these indicators provide only absolute numbers, they contain the risk of being interpreted one-sidedly by people unfamiliar with the project. This recorded data helps the project management to understand the project's course in more detail, especially concerning the effectiveness of its output. More importantly, it supplies the necessary information, prepared in an objective and comprehensive manner, for a discussion and analysis on the promoters' level.

For this purpose, PROPAR organizes annual evaluation meetings with the project management, all promoters, the administration and people indirectly involved in the project such as executives from the Ministry of Health and the Swiss SDC. These common discussions and assessments of the annual MES results guarantee their correct interpretation and a participative analysis of the substantial and direct causes of both negative and positive aspects of the project's progress. At the same time, evaluation meetings give the promoters the opportunity to report and discuss other observations or (personal) requests concerning the project environment. Such information, classified as subjectively verifiable indicators, complement the objective MES indicators. Their consideration, even if it is not quantifiable, is essential and in many cases indispensable for the finding out the effects indicated by the processed MES information.

In addition, the annual systematic data gathered by means of specially created forms (cf. table 3) has intensified and improved the field supervision. Through these forms, recording objectively, verifiable information only, the superiors' job is alleviated, mainly with regard to the pointing out of deficiencies in promoters' field work. Promoters on their part participate directly in the filling out of the forms and therefore practice a self-evaluation. This at the same time increases their identification with the MES, which is one of the essential pre-

conditions for the successful implementation of a MES and decisive for its chance to become an integral part of the project management.

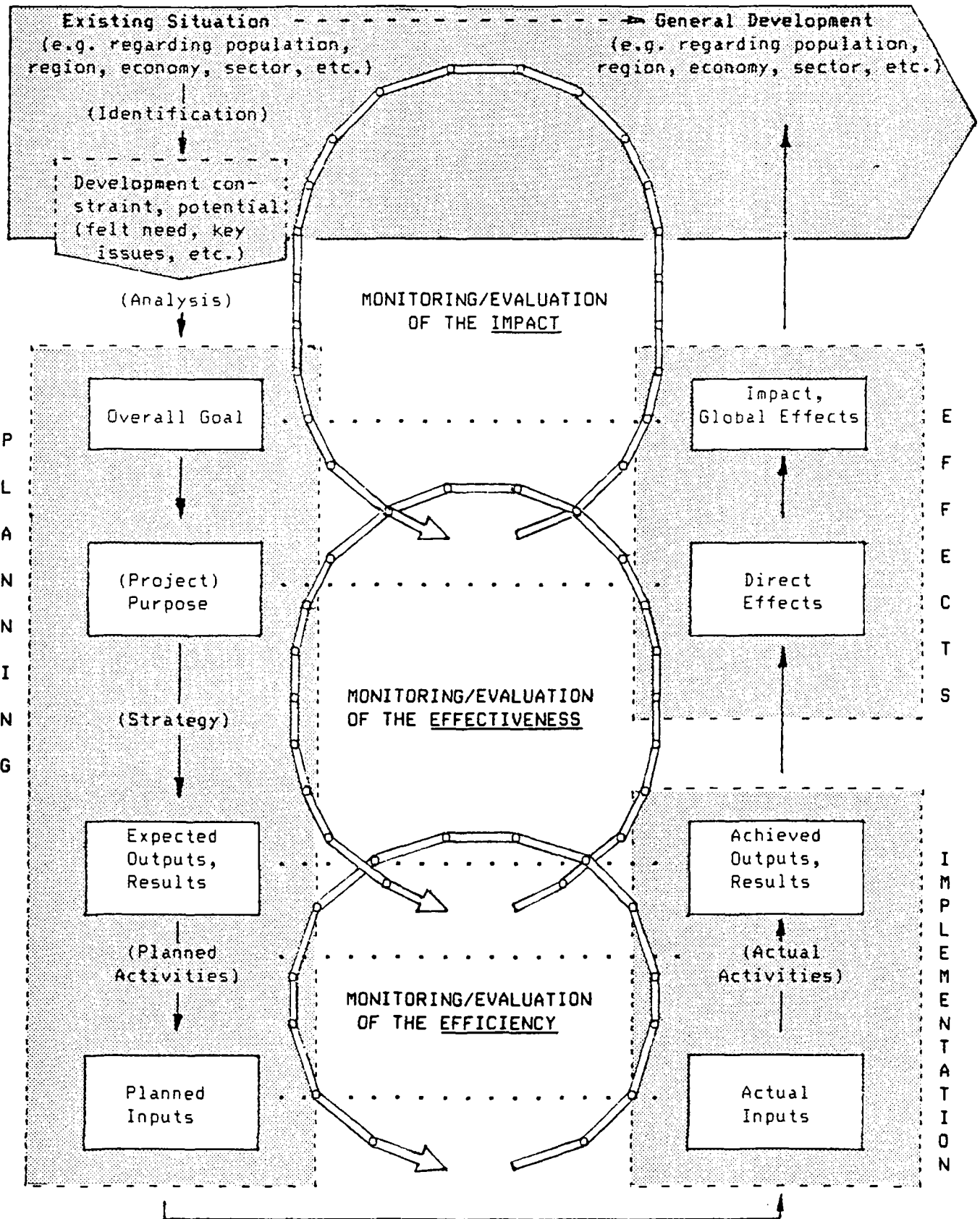
On the other hand, the Ministry of Health and the SDC head quarters have a pronounced interest in information about the project's effects, its effectiveness and its impact. This is the most significant basis for decision-making concerning important events taking place within a project, such as the preparation of a new phase or when there is a felt need for a fundamental change in the project objectives.

In conclusion, it can be summarized that the PROPAR monitoring and evaluation system is primarily a very helpful instrument to refine the project management. It makes the decision-making for the whole project personnel more obvious and improves through its objective monitoring process the willingness and capacity of project personnel for self-evaluation and self-criticism. In addition, it supplies to national sector policy makers and external support agencies information for high level executive decisions. - Concerning the PROPAR'S future, its own MES, i.e., its own monitored information will co-determine when at the end of 1991 the decision will be made, if and how PROPAR will continue.

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Table 1. General Monitoring and Evaluation Framework (slightly modified)



[Source: Swiss DC, 1988]

Table 2. Synopsis of Objectives - Indicators and the MES Results from 1988 and 1989

Summary of Objective	Objectively Verifiable Indicators			Results from 1988	Results from 1989
	Criterion	Indicator	Magnitude		
Overall Goal	Indicators that Overall Goal is reached:				
Target population's living standard improved	Cases of diarrhea	Cases attended of children < 5 years / Total cases attended of ch. < 5 years	? (I.G.1)	-	-
	Mortality rates	Total deaths of children < 5 years / Total births (X 1000)	< 78,6 de < 1 año / Total births (X1000) (I.G.2)	-	-
		Total deaths caused by diarrhea of children < 5 years / Total population < 5 years	? (I.G.3)	-	-
Project Purpose	Indicators which show the achievement of a succesful Project Purpose:				
The provision of potable water and basic sanitation of target population improved	Population coverage of potable water and sanitation	Total population served with well/ Total target population	6.5% (end of 1991) (I.P.1)	4379/ (2.6%) 168257	6179/ (3.6%) 173641
		Total popul. served w. gravity-flow systems (GFS)/ Total target population	8 % (end of 1991) (I.P.2)	6202/ (3.7%) 168257	8476/ (4.9%) 173641
		Total population served with latrines/ Total target population	35 % (end of 1991) (I.P.3)	18926/ (11.2%) 168257	31527/ (18.2%) 173641
Results/Outputs:	Indicators, describing the Result/Outputs:				
1. Beneficiaries made aware of health, sanitation and hygiene topics related to the use of water and environmental sanitation	Extent of women's participation	Extent of participation of women on the water committees	At least one woman per water committee (I.R.1.1)	8%	19%
	Extent of participation in the operation of the work	Term of project completion	Maximum of 3 months for digging wells (I.R.1.2)	3.8 m. (W)	8 m. (W)
			Less than 6 months for GFS (I.R.1.3)	9 m. (GFS)	8.3 m. (GFS)
Actual acception of latrines	Population coverture in the area of programatic responsibility (I.R.1.4)	100%	88%	?	
----- % con.contr. - % DCI: -----					
2. Importance of potable water and sanitation recognized by authorities	Financial particip. of authorities in construction	% of financial contributions of mayors and politicians in the construction	GFS: 70% - 5%	63.6% - 2%	80% - 4.7%
			M: 20% - 3%	12.9% - 0.6%	27% - 3.5%
			L: 10% - 2% (I.R.2.1)	6 % - 7.5%	7.5% - 0.9%

Table 2. Continuation

Summary of Objective	Objectively Verifiable Indicators			Results from 1988	Results from 1989
	Criterion	Indicator	Magnitude		
3. Durable and adequate water and sanitation systems constructed	Quality of water	No. of faecal coliform organisms per 100 ml ("MPN" index)	From 0 - 2 potable water from 3 - 5 barely potable from 6 - 100 not potable > 100 dangerous (I.R.3.1)	85.1% 12.8% 2.1% 0 %	69.1% 10 % 21 % 1.8%
	Direct cost of the project to the institution (DCI)	DCI of the project per beneficiary	DCI: hand digging W: \$ 17; hand drilling W: \$ 12; GFS \$ 40 (I.R.3.2, 3.3, 3.4)	\$ 16.58 \$ 11.34 \$ 41.57	\$ 21.58 \$ 16.75 \$ 42.24
4. Program of wells equipped hand pumps supported	Capacity of promot. to promote and direct well projects	% of promoters located in proper zones capable of promoting and directing well projects	90% of promoters promote and direct well projects (I.R.4.1)	68.1%	50 %
	Quality of construction of wells	% of wells built well	100% fulfill quality standards (I.R.4.2)	91.6%	83.3%
	Quality of installation of pumps	% of pumps installed well	100% fulfill quality standards (I.R.4.3)	90 %	76 %
	Use of constr. wells	% of constructed wells in use	100% in use (I.R.4.4.)	100 %	95 %
5. Effective operation and maintenance achieved	Initial interest of operation of water committees of wells	Ability to attain funding	Minimum initial budget of \$ 130 for buying tools (I.R.5.1)	\$ 57	\$ 5
	Training of water committees	Water committees trained	A committee per W/GFS and a committee coordinator (I.R.5.2)	87.5%	26.8%
	Fluctuation of committee members	% of members fluctuated per year	Maximum 10% of members fluctuated (I.R.5.3)	4 %	?
	Quality of maintenance of wells	% of wells functioning	80% of pumps fulfill quality standards of functioning (I.R.5.4)	63.3%	65 %

Table 2. Continuation

Summary of Objective	Objectively Verifiable Indicators			Results from 1988	Results from 1989
	Criterion	Indicator	Magnitude		
	Quality of maintenance of BFS	No. of taps in poor condition	Less than 20 % of taps in poor condition (I.R.5.5)	15.5%	17 %
		Availability of water at tap level	Water reaches 100 % of taps (I.R.5.6)	99 %	92.5%
		State of maintenance of spring catchments and water tanks	90 % fulfill quality standards of well functioning (I.R.5.7)	85.7%	84 %

Table 3. An Example of a Form for the MES Data Gathering

P R O P A R: M E S	RC-3F
<u>FUNCTIONING CONTROL OF HAND PUMP</u>	(I.R.5.4.) /
<u>USE OF CONSTRUCTED WELLS</u>	(I.R.4.4.) /
<u>FLUCTUATION OF MEMBERS OF WATER COMMITTEES</u>	(I.R.5.3.)
Year: _____	(to be completed by promoter II)

Promoter: _____ Region: _____

Community: _____ Type of well: dug (Hand) drilled

Code of well: _____ Date of pump installation: _____

A. Touch Control:

- Upon lifting the handle, the equalizer bumps the bushing Yes No

- Upon lowering the handle, the lower part of the handle bumps the post Yes No

B. Water Leaks in Base of the Pump:

There are no water leaks in the base of the pump? Yes No

(Note: If there are not leaks in the base, mark Yes; and if there are leaks in the base, mark No.)

C. Volume of Water:

Number of pumping needed to fill a 3.4 gallon bucket (bucket measurements: height 26 cm, lower diameter 21.5 cm, upper diameter 28.5 cm)

fewer than 35 35-45 more than 45 Yes No
(fewer or equal (more than to 40) 40)

(Note: Upon pumping be sure to use normal speed and complete strokes of handle)

D. Water Retention:

After pumping the pump retains the water for atleast 5 minutes in the tubes Yes No

(Procedure: pump - wait 5 min. without touching pump - pump again: the water has to leave immediately)

Total (leave blank) Yes No

- The Well is in Use? (independent of its condition) Yes No

- Concerning the water committee:

How many members have changed in the past year? Number: _____

MACOUN

THE DEVELOPMENT OF WATER AND SANITATION SECTOR STRATEGY AND ACTION PLANS¹

Scarce resources contributed by governments and donors for water and sanitation investments in the developing countries all too often end up being dissipated and failing to provide the desired sustained services. One of the measures available to help reverse this trend is the preparation of sector development plans to form the basis for investment projects in the sector. This paper describes a methodology that can be used for this purpose and the need for information from monitoring and evaluation to be available at a national level.

1. WHAT IS A SECTOR STRATEGY AND ACTION PLAN ?

For any development program, it is important to establish:

- (a) what it is that you are attempting to do, i.e. to set objectives;
- (b) how the objectives are to be achieved, i.e. a strategy.
The strategy will normally include consideration of:
 - the institutional framework
 - investment planning
 - financial policies
 - technology choices
 - human resources.
- (c) how the strategy will be put into effect, i.e. a plan.
It is important, of course, that before the plan is initiated, that the strategy and plan are agreed by all parties involved. The plan would normally include
 - activities to be carried out
 - responsibilities
 - resources needed, and
 - a time frame

¹ A paper presented by Andrew J. Macoun on behalf of the UNDP-World Bank Water and Sanitation Program to the Workshop on Goals and Indicators for Monitoring and Evaluation for Water Supply and Sanitation, 25 - 29 June, 1990. Geneva, WHO.

The views expressed in this paper are entirely those of the author and should not be attributed in any manner to The World Bank or UNDP.

2. WHAT IS THE NEED FOR MONITORING AND EVALUATION ?

The plan is usually comprised of one or a number of projects. It is essential that projects are monitored to assess the progress toward achieving the project's objectives, and also that evaluations be conducted to determine how adequately the objectives were achieved.

The World Bank defines monitoring and evaluation as follows:

Monitoring is the continuous assessment of project implementation in relation to agreed schedules, and the use of inputs, infrastructure, and services by project beneficiaries.

Evaluation is the periodic assessment of relevance, performance, efficiency, and impact (both expected and unexpected) of the project in relation to stated objectives.

However, there is need for some information to be available at a higher level than project specific monitoring and evaluation. Sector development is the result of all activities within the sector. It is argued above that this should be a set of planned and consistent activities within the framework of a sector strategy. The full value of this approach will be realized only if sector strategy is responsive to the experiences and lessons arising from its application. Monitoring and evaluation are the means by which strategy can be made adaptive to this experience.

3. WHY IS A SECTOR DEVELOPMENT STRATEGY NEEDED ?

The water sector in the developing countries is characterized by rapidly growing demand in the face of rising costs of resource development, use of expensive and unsuitable technology, and high losses of water and revenue due to inefficient operation and inadequate maintenance; it is plagued by under-pricing and poor cost-recovery, combined with dependency upon central governments and external agencies for the financing of new works; moreover, it portrays poorly managed sectoral institutions, fragmented policies, and insensitivity to customers.

The sanitation sector performance is even worse. Service coverage and quality are low, and rapid urbanization has increased waste quantities far beyond the capacity of sector agencies, resulting in pollution of the environment, poor public health and reduced labor productivity. In both cases, the poor are the worst affected.

A wide range of remedial measures are clearly required to improve sector performance. This paper deals with the role of sector

development plans.

It is generally agreed that projects will be better prepared within the framework of a sector development plan as they will be more consistent and directed towards achieving agreed sector objectives. This involves preparation of sector studies and formulation of an overall sector strategy. Since few developing countries have the staff and the resources to prepare such strategies, the World Bank normally provides assistance to undertake the necessary sector studies which, among other things, helps to define the role that the Bank can play in sector development. But there are a number of external support agencies (ESAs) besides the Bank that provide financing for the water and sanitation sector. It would therefore be useful if the developing countries themselves would take the initiative to prepare sector development plans to serve as a basis for preparing investment projects for financing not only by the Bank but also by other external support agencies.

The UNDP-World Bank Water and Sanitation Program has drawn upon the experience of its Regional Water and Sanitation Groups (RWSGs) to create a set of procedures that could serve as guidelines for the development of national sector strategies and action plans. These procedures were developed in East Africa where they have been applied in a number of countries (including Uganda, Malawi, and Tanzania). They are now being used by the RWSGs in other regions, including West Africa (e.g. Ghana, where a Rural Water Supply Strategy and Action Plan is being prepared at the joint request of the Government and the World Bank's operational staff as preparation for a Bank-financed project, and to provide a common sector strategy for use by other donors).

4. THE PROCESS FOR PREPARING AND IMPLEMENTING A SECTOR STRATEGY AND ACTION PLAN

The suggested process for preparing and implementing a sector (or sub-sector) strategy and action plan has four conceptually distinct stages (though sometimes two may be tackled in one exercise).

A Position Statement is first prepared describing the sector and the level that has been reached in its development. The Position Statement includes a brief country background, service coverage and technologies in use, management and institutional responsibilities, human resource availability, national plans and policies, domestic and foreign investment, donor involvement, and past sector successes and failures.

Issues that have constrained sector development, or are emerging as constraints and need to be addressed, are then identified and analysed in an Issues Paper. The paper covers institutional

performance (including the legal/legislative framework), financial performance (particularly unaccounted losses, tariffs and cost-recovery), social role (especially poverty related issues and access by the poor), technological issues (particularly the appropriateness of material and equipment), and environmental issues, and it also identifies those areas where further work is needed. These first two steps may be combined and typically require 2 manmonths for their preparation.

A Sector Strategy and Action Plan is then formulated for achieving defined sector goals within a prescribed period of time (often the national planning cycle period) and for addressing and resolving the issues raised in the Issues Paper. It normally includes the following main components: service levels, technology choices (considering economic cost, willingness-to-pay, and benefits), implementation mechanisms, institutional arrangements, development of human resources, financial mechanisms and management, sustainable operation and maintenance capability, rehabilitation of existing facilities, and other complementary activities (e.g., demand generation, health and hygiene education programs, private-sector promotion, etc). Preparation of the Strategy and Action Plan typically requires 2 to 3 manmonths of resources.

Implementation of the Action Plan finally puts the strategy into operation. It includes activities for institutional strengthening such as definition of responsibilities, adjustments within and coordination among government agencies, a mechanism for coordination of donor activities, training, policy formulation, drafting of legislation, preparation of studies, and other parallel activities. It also includes an on-going pipeline of projects, including demonstration projects designed to test or prove the suitability of certain aspects of the strategy prior to national replication. Being a plan, it must include a feasible time-scale and delineation of responsibilities for carrying out each component as well as an explicit financing plan. An important but often overlooked requirement of sector strategy implementation is monitoring, periodic assessment, and review so that the strategy can be modified in the light of progress and changing circumstances.

5. FEATURES OF SECTOR STRATEGY DEVELOPMENT APPROACH

A vital feature of strategy development in the water and sanitation sector is that it should be adaptive to experience and receptive to the needs and aspirations of the community it serves (often called bottom-up planning), so that past failures caused by lack of community involvement can be avoided in future. The community's views are not always evident or canvassed in advance and therefore it is essential that policy and strategies be dynamic to reflect experience gained during implementation. Pilot and demonstration projects should therefore be used to test

and refine strategies so that national programs can be based on a solid foundation of demonstrated effectiveness and efficiency.

A second important feature is the coordination, both among government agencies as well as donors, which can come about through the process of preparing a sector strategy, and the opportunity for donor collaboration in implementing the action plan. With important issues clearly defined, all donors can play a part in implementing the strategy for their resolution, and in conforming to the national policies and strategies which result.

6. LINKAGES TO EVALUATION INDICATORS

The proposed evaluation indicators relate to different aspects of the services provided:

- EFFECTIVE USE relates to utilization;
 - SUSTAINABILITY relates to operation and maintenance;
- and
- REPLICABILITY is essentially the product of the other two.

These indicators all relate to how services are delivered. National objectives and strategy also need to consider why services should be provided. Those responsible for guiding sector development rarely have unlimited resources at their disposal. The typical situation is that very limited resources must be applied to address enormous service deficiencies in competition with pressing demands for those resources by other sectors. The sector decision makers therefore need additional indicators of:

- actual service coverage and needs;
- the impact of interventions or the demand for services expressed as a willingness to pay for them by the beneficiaries, to provide justification for interventions;
- complementarity between interventions; and
- the availability of resources.

Decision makers can then be provided with the information they need concerning the need for, justification of, and means for action to provide those services which have been demonstrated by project work to be effectively used, sustainable and replicable.

TO LEARN MORE

INUWS is preparing a discussion paper on "The Development of Water and Sanitation Sector Strategy and Action Plans," which includes checklists, sample terms of reference, and a bibliography in addition to suggested guidelines.

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WARNER

NEW ROLES FOR MONITORING AND EVALUATION IN WATER SUPPLY AND SANITATION

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Introduction

Monitoring and evaluation in water supply and sanitation development generally have been viewed as activities which are costly, time consuming, and, wherever possible, avoidable. Part of this is due to methodological problems stemming from the fact that water and sanitation projects can be extraordinarily difficult to assess. Another aspect of the reluctance to undertake evaluations is undoubtedly due to a lack of willingness and capacity among development agencies to change their operations to take account of the problems revealed by project evaluations. From this standpoint, evaluations are often seen more as a hindrance than a help to efficient programme implementation.

Monitoring and evaluation are not ends in themselves, but merely means towards obtaining successful projects and programmes. The question is, what is a successful project? At the very least it should be one which produces the intended results or benefits, is sustainable over a significant period of time, and can be implemented and operated at reasonable cost.

The purpose of monitoring and evaluation, therefore, is to assist in the assessment of the relevant outcomes and associated costs. They also should provide information that can be fed back into the project to improve subsequent performance. And lastly, monitoring and evaluation may be used as a research tool to better understand the interactions and processes that take place during project development.

This paper will look at recent developments in monitoring and evaluation and, in particular, efforts to make these activities a more relevant part of the project development process through the direct involvement of the beneficiaries themselves. Through beneficiary involvement in monitoring and evaluation at all stages of the development process, it is expected that project success in terms of perceived local outcomes and system sustainability will be enhanced.

Background

Traditionally, monitoring has been viewed as the routine collection of data as a means of gauging current operational activities. In the best of situations, the information was used to influence operational changes and to

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direct maintenance works. In the worst of cases, which unfortunately occurred all too often in water and sanitation systems, the data was simply ignored because of the lack of resources for follow up actions or a lack of understanding of the importance of operational information. Evaluation, on the other hand, has been viewed as an event, an activity carried out at a set point in time to assess the status of the project or system. In most cases, evaluation has been tied to project implementation and was used to assess the developmental but not the operational phases of a project. Thus, monitoring has been viewed as a process linked to system operation, while evaluation has been perceived as an event gauging the status of project implementation.

Early evaluations of water supply and sanitation systems concentrated almost exclusively upon the public health impacts. Between 1850 and 1950, most attention was directed towards the epidemiological relationships between improvements in in water supplies and subsequent reductions in waterborne disease rates. Starting with Dr. John Snow and the Broad Street pump in 1855, through the post facto studies of the statistical relationships between the introduction of municipal water supplies and the reduction of typhoid fever in England and the United States, classical epidemiological investigations based upon the analysis of past situations dominated the general area of evaluation.

By the mid-twentieth century, however, increasing concern began to be given to rural areas having a large number of relatively isolated water sources. These areas did not fit the classical epidemiological model of a single municipal water source and distribution system. From approximately 1960 onwards, field evaluations increasingly relied upon either horizontal studies (cross-sectional comparisons of several communities at the same point in time) or longitudinal studies (time-series assessments of changes that occur in communities over time). At the same time, evaluation concerns rapidly broadened to include first economic consequences, then social outcomes, and eventually environmental impacts. Unfortunately, the 1960s and 1970s were also marked by growing frustrations among development planners and researchers because of the difficulty of showing direct causative relationships between water and sanitation interventions on the one hand and specific benefits, especially health benefits, on the other. Project evaluations, and in particular impact evaluations attempting to show ultimate health and economic impacts, tended to be either inconclusive or methodologically flawed, and most were very costly. In 1976 an expert panel of the World Bank advised against further "attempts to isolate specific causal water supply -- health relationships" within the Bank because such studies were characterized by high costs, inadequate knowledge, and poor results.

The period immediately following 1976 was a low period in the development and application of evaluation methodologies in water and sanitation. Monitoring and evaluation continued to be used by water and sanitation agencies in both the developing countries and by the external support agencies (ESAs) but rarely were these aspects an integral part of project development or long-term operations. Few new projects were ever subjected to even a cursory evaluation, while the low status of monitoring efforts paralleled the low status given to operation and maintenance throughout the developing world.

With the establishment of the International Drinking Water Supply and Sanitation Decade, 1981-1990, attention was again focused on the problems of project implementation and the all too-frequent lack of project success. New efforts were addressed first to issues of appropriate technology, then institutional development, and finally community participation. Most of these aspects had been initially developed during the previous thirty years. The Water Decade, however, brought the issues together and slowly forced development planners to begin to see water and sanitation users as equal, if not the dominant, partners in the development process. At the same time, a rethinking of evaluation approaches was occurring.

Since the early 1960s, water and sanitation evaluations had been burdened by the necessity to show causal linkages between project interventions and ultimate health benefits. Field investigations of villages and towns, however, cannot be carried out as carefully controlled laboratory experiments. There are far too many intervening factors influencing health outcomes, and an inadequate understanding of the nature and dynamics of these factors usually resulted in poor evaluation design and questionable evaluation results.

The first major change in evaluation thinking was the Minimum Evaluation Procedure (MEP) by WHO in 1983. Stating that evaluation was a systematic way of learning from experience in order to improve the planning of future projects and to take corrective action on existing projects, the MEP argued that an evaluation of ultimate impacts was not necessary for routine planning and evaluation purposes and instead called for an assessment of the "functioning" and "utilization" of water and sanitation facilities. According to WHO, functioning facilities are those which are operating in the correct way in the areas of community water supply, sanitation, and hygiene education. The utilization of facilities, on the other hand, refers to the experience of a community in actually using the water and sanitation facilities, as well as associated hygiene education messages. Measurable indicators were developed in the MEP for both functioning and utilization concepts.

Directly related to the limited evaluation approach advocated by the MEP was the growing realization that intermediate indicators of behavioral change were useful surrogates, and more easily measurable, for the ultimate health impacts of reductions in morbidity and mortality. As indicated above, most ultimate impacts, whether in the health, economic, or social spheres, take a considerable length of time to appear and usually are influenced by a variety of external factors. If it can be assumed that all ultimate impacts, or benefits, involve changes in behavior (examples: taking water from a tap rather than the stream, washing hands after defecation, paying a monthly water bill, promptly reporting system malfunctions to the local technician, etc.), then the observed presence of a positive behavioral change can be taken to be a surrogate for the ultimate health or economic benefit. Thus, behavioral changes are measurable intermediate indicators suitable for most routine monitoring as well as project evaluation purposes.

Two additional developments related to evaluation that have arisen during the Water Decade are the case-control method of studying diarrheal diseases and new ideas regarding the participation of communities in project

planning, management, and evaluation. The case-control method is an epidemiologic study of subjects randomly selected from patients in health facilities. This approach allows greater control over intervening factors, the use of more powerful statistical procedures, and significantly lower study costs. Recent ideas on user participation, on the other hand, are based on the conviction that water and sanitation system users must have greater voice in all aspects of project development and operation. Together, these newer concepts, along with the recent emphasis upon behavioral aspects, have brought the issue of monitoring and evaluation to a high level of public awareness where there exists at this time excellent potential for developing practical and effective measures for managing water and sanitation development.

The Structure of Evaluation

In the traditional sense, evaluation implies measurement, and the purpose of evaluation is the measurement of project status to determine progress toward defined project objectives. The basic evaluation process can be looked upon as a sequential model of linkages from initial project inputs to ultimate project outputs and impacts, as shown in Figure 1.

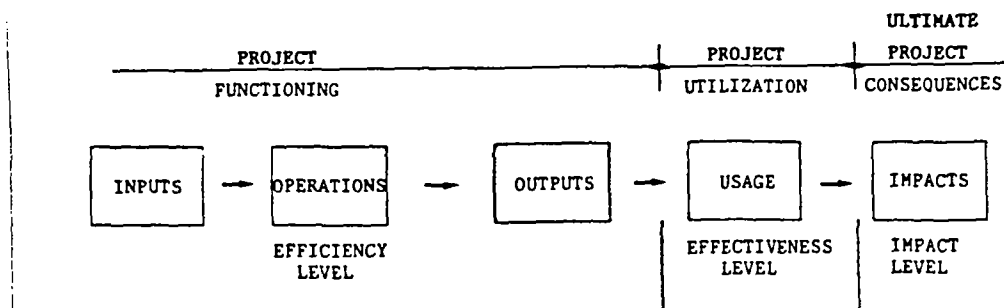


Figure 1: General Evaluation Model for Water and Sanitation Projects

Each level of Figure 1 represents an order of effects that are dependent upon all previous effects. The initial efficiency level consists of the immediate or direct consequences of project development, which include all project inputs, operations, and physical outputs under the control of project officials. The consequences can generally be assessed in straightforward physical units, such as expenditures, lengths of pipe, capacity of pumps, etc.

The secondary effectiveness level involves the more complex consequences of project performance, or the use of the project systems. This includes the water use and sanitation practices adopted by the project communities as well as the types of health education and maintenance support the communities give to the new systems. Project officials cannot directly control these consequences. They can only hope to favorably influence the behavioral patterns in the recipient communities. Although complex behavioral patterns can be very difficult to measure, simple indicators, such as the presence of soap in kitchens, the availability of water near latrines, and participation on village committees, can be used to assess behavioral changes.

The third and final level is the impact level, which includes the ultimate health, economic, and social consequences of the project. To the policy maker, these are the long-run benefits that water and sanitation projects are intended to achieve. The existence of these impacts is dependent upon the occurrence of project outcomes at the earlier efficiency and effectiveness levels. Measurement of ultimate impacts, as described above, is extraordinarily difficult, and may require a disciplined research approach with strict project controls to produce meaningful results. In the Minimum Evaluation Procedure, WHO advises against attempting to measure project impacts in operational field evaluations.

In brief, evaluation can be broken down into three basic levels: an efficiency level involving the functioning of project inputs, an effectiveness level involving the utilization of project outputs, and an impact level involving the ultimate benefits to human welfare. These levels can be further broken down into the five specific evaluation issues shown in Figure 1:

1. Project inputs (funds, personnel, materials, equipment, and labor contributions of all participants in the project).
2. Project operations (activities intended to strengthen institutional capabilities, such as the improvement of project design methods, training, research, information systems, maintenance, etc.).
3. Project outputs (construction of new water and sanitation facilities in project communities).
4. Project utilization (actual use and maintenance of water and sanitation facilities in project communities).
5. Project impacts (ultimate health, economic, and social benefits resulting from the utilization of system facilities).

These five sequential issues can be applied to an actual project evaluation, as is shown in Figure 2, which illustrates the final evaluation model for the Malawi Self-Help Rural Water Supply Program carried out by USAID in 1986. Since the evaluation was not intended as a research study but rather as an operational end-of-project assessment of a continuing programme of project development, little attention other than qualitative descriptions was given to the final level of project impacts. For the specific indicators within the operational and performance levels, however, detailed measures were used to establish the changes that had occurred since the mid-term evaluation three years earlier. Figure 2 outlines the general evaluation model but does not show the indicators used in each category. As an example of the types of indicators employed, the project utilization level (labelled in Figure 2 as project performance) contained measures and discussion of the following:

7. Project Utilization

7.1 Household Water Use

7.1.1 Sources and uses of household water

7.1.2 Water consumption

7.2 Household Sanitation Practices

7.2.1 Water-related uses

7.2.2 Latrine usage

7.3 Community Support Practices

7.3.1 Enforcement of water use and sanitation practices

7.3.2 Community input during construction

7.3.3 Community input for maintenance

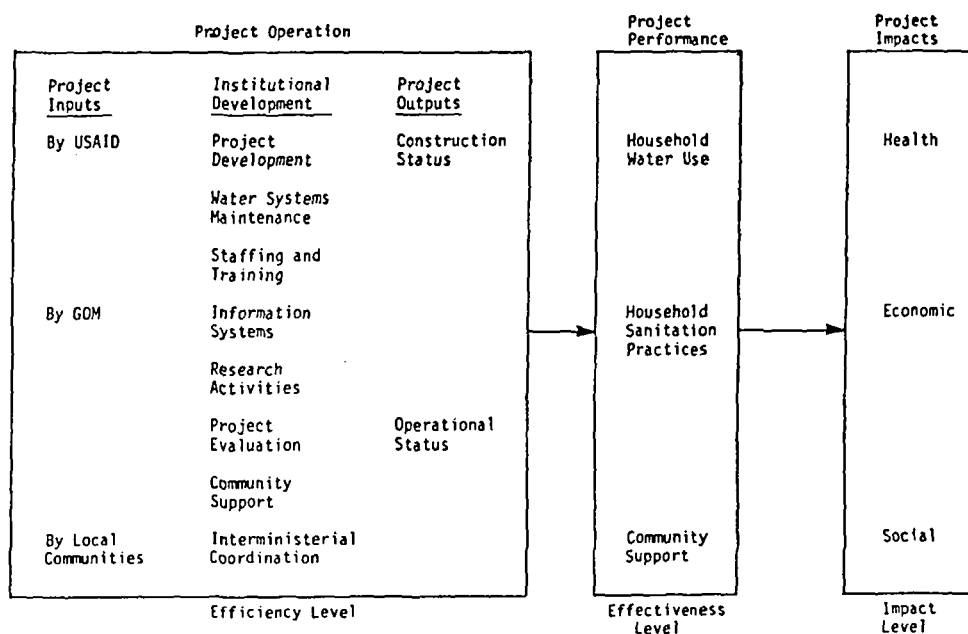


Figure 2. Evaluation Model for Malaqi Rural Piped Water Project.

With the aid of the model shown in Figure 1, an evaluation methodology may be selected that assesses the specific levels of project effects that are desired. The three most common methods of assessing water and sanitation projects are audits, process evaluations, and impact assessments. A related form of evaluation, project appraisal, is the assessment of project design before actual implementation. It occurs before project construction and, therefore, is independent of the subsequent functioning, utilization, and impact generation of actual project implementation. The three common methods of evaluation have the following characteristics:

1. Audit evaluations generally deal only with project inputs and how they have been converted into quantifiable project outputs. The most limited types, financial audits, may look only at the accounting records of budgets, billings, invoices, and

expenditures. More commonly, project audits in water and sanitation assess project compliance in terms of planned inputs and projected outputs. These evaluations tend to be highly quantitative and use specific financial and engineering criteria to measure expenditure levels, resource disbursements, facility construction, and adherence to schedules. Project audits take place during implementation or immediately following project completion, but they rarely look at secondary effects or how project outputs are utilized by recipient communities. They generally are restricted to the realm of project functioning.

2. Process evaluations are concerned with the performance of projects and how project outputs are being utilized. Project objectives regarding behavioral changes in, for example, water use, water consumption, sanitation practices, and household cleanliness become important in process evaluations. In most cases, a process evaluation must assess both system functioning and utilization. The first issue, of course, is whether the system is functioning as planned, while the second issue is whether the system facilities are being properly utilized. This latter aspect involves an assessment of the behavioral patterns and attitudes of the populations using the facilities, including the use and care of the facilities, changes in water use and sanitation practices, and types of committees and other social mechanisms for system maintenance. These easily-measurable indicators of behavioral changes do not deal directly with the ultimate benefits the project is intended to generate but do serve as surrogate measures of the ultimate impacts. Process evaluations can be carried out during project implementation, in which case the results can serve to modify project design, or following project completion, in which case the results can assist in the development of future projects. The Malawi rural water project evaluation, outlined in Figure 2, is an example of a process evaluation.
3. Impact evaluations deal with the ultimate consequences of project utilization. In general, they are concerned with long-term benefits in the areas of health, economic improvement, and social welfare. In practice, impact evaluations tend to focus on a limited set of outcomes in one or another of the above areas. The expected long-term benefits of water and sanitation projects are affected by so many internal and external factors that the overall costs of a comprehensive assessment are beyond the means of all but a handful of well-funded research investigations. Most impact assessments are basically research studies intended to test hypotheses and develop new methodological techniques of benefit measurement. Although many development organizations justify project investments in terms of expected health, economic, and social benefits, none has any formal evaluation methodologies suitable for assessing these outcomes.

New Issues in Evaluation

One of the positive legacies of the Water Decade is the growing realization that new approaches are needed to obtain successful water and sanitation projects. As the Decade draws to a close, it is increasingly clear that the original coverage targets will not be met, that the necessary financial resources to meet sector needs will not be raised, and that most projects simply are not sustainable over the long term. A variety of new concepts having relevance to both monitoring and evaluation are being used by both development agencies and ESAs to describe what the new approaches should be.

The first concept, sustainability, refers to the ability of a project to continue to provide intended benefits for a significant period of time after the completion of project construction. In some instances, sustainability is defined more rigorously to be the continuation of project-derived benefits after the cessation of external assistance. For practical purposes, this definition may be too strict, since even well-managed, user-supported water and sanitation systems may require occasional assistance from the outside. Sustainability should not necessarily be equated with full cost recovery but rather with the capability of the local socio-economic-political system to meet user needs over the long run with water and sanitation services at reasonable and acceptable costs.

The concept of sustainability derives from the basic principle that to be a success a water and sanitation system must continue to provide an acceptable level of service. The difficulty in applying this concept is due to the fact that water and sanitation agencies tend to be oriented towards construction of new facilities rather than the provision of water and sanitation services. This bias is often institutionalized within the agencies themselves as the great bulk of attention, funds, and career advancement opportunities are directed towards capital development with only residual amounts allocated to operations.

A second concept, replicability, refers to the characteristics of a project which allow it to be readily duplicated elsewhere. Water and sanitation programme development often involves the implementation of many separate projects. To the extent that a successful project can be replicated in other programme areas, costs may be reduced and overall project sustainability may be enhanced. In the 1960s, there was considerable emphasis upon the development of standard project designs intended to promote rapid programme implementation. This early approach at replicability generally was based upon standardized engineering designs, whereas the current approach to replicability generally emphasizes the software aspects of community involvement, local decision making, and institution building.

A third concept, community management, refers to the capabilities and willingness of beneficiaries to take charge and determine the nature of the project affecting them. In water and sanitation, community management implies that the community of affected users exercises both responsibility for decision making and control over the subsequent execution of these decisions

during project development. Community management is characterized by three basic components:

Responsibility. The community takes on the ownership of and the associated obligations to the system.

Authority. The community has the legitimate right to make decisions regarding the system on behalf of the users.

Control. The community is able to carry out and determine the outcome of its decisions.

Community management differs from community participation in that participation basically implies beneficiary involvement while management refers to decision-making and the execution of decisions.

And finally, the concept of participatory evaluation, or the involvement of project users in the monitoring, analysis, evaluation, and subsequent modification of their project, is beginning to be seriously considered. In normal evaluation practice, project evaluations are usually carried out at "arms length" by individuals who try to avoid directly influencing project outcomes in the collection of data and the measurement of project indicators. This classical scientific approach to assessing causes and their subsequent effects was originally developed for controlled laboratory conditions where the measurement of cause-and-effect relationships was of greater interest than the manipulation of the final effects. In free-living human communities, however, many intervening factors can influence the intended benefits arising from water and sanitation project inputs. Rather than waiting for the conclusion of formal project evaluations, information on project performance obtained from and with the assistance of project beneficiaries often can be used immediately for mid-course corrections. Such corrections, which will tend to alter the original nature of the project, will make it difficult if not impossible to carry out a traditional "arms length" evaluation. On the other hand, the involvement of the project beneficiaries in the evaluation should help to develop within them the characteristics of responsibility, authority, and control which are the essential aspects for community management. And this, in turn, is one of the approaches for promoting sustainable projects.

Geneva
26 June 1990

ZAOUDE



UNIFEM'S KNOWLEDGE BANK

**A model for monitoring and evaluation
of development projects**

by

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GENEVA

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water supply and sanitation, 25 - 29 June 1990, Geneva, WHO**

UNIFEM's KNOWLEDGE BANK

A Model for Monitoring and Evaluation of Development Projects

INTRODUCTION

UNIFEM, as a development agency, occupies a special position because its project-support interventions interface two priority concerns of the United Nations - sustained development and advancement of women.

Due to its specific mandate and its principally catalytic and innovative role, UNIFEM has established a partnership with women and grass roots organizations. It has promoted women's awareness of their own potentials and provided alternative bridges for their access to development resources.

"UNIFEM has been an effective innovator and catalyst in promoting women's issues and women, themselves, into mainstream thinking, policies and programmes and, at the same time, in raising fundamental questions about the efficacy of the mainstream as it exists." (re. **Women on the Agenda: UNIFEM's experience in mainstreaming with women 1985-1990** by Mary B. Anderson).

THE CHALLENGE

Today, the central role that women play in economic and social development is almost a given for national Governments and international bodies. Women have gained their way to national and international development agendas. In fact, beyond the centrality of women in development, the **centrality of people in development** has brought to the development paradigm a new dimension. The debates on human development, people's participation and the need to unleash human potentials and capabilities stem from the new human development strategies. However, the gap persists between intentions and actions, between actions and results and also between results and impact.

One of the issues of wide and increasing interest is focused on "participatory development". In this context, the concept of participatory evaluation of projects is being explored as a *modus operandi* for effective evaluation. And yet, it is not clear nor evident that peoples' participation in the earlier stages of the project cycle (designing projects and monitoring them), the need to be flexible in the implementation, the need to decentralize decision-making processes and ultimately the empowerment of the participants to make the changes in the course of project implementation, have received the commitment required to make the participatory development process a real and effective one. UNIFEM's experience in this respect will be of great use.

The challenge remains for UNIFEM to build on its rich experience in working with people and to share this experience with other development agencies by demonstrating "what works and why", as well as "what doesn't and why not".

Through its support to micro level grass roots projects as well as to macro policies and programmes, UNIFEM tries to identify and test effective models and efficient approaches for broader application and for replication.

The model developed by UNIFEM for project monitoring and evaluation should be examined with the potential for a full blown model in this direction.

THE MODEL

It would be an impossible task for the Fund to respond to the increasing demand for applied methodologies and tested models on WID issues, without developing a system which facilitates cumulative, comparative, cross-sectoral and cross-regional analysis of project experiences, of their results and most importantly of their impact on women and development.

To this genuine challenge, UNIFEM responded by developing the Knowledge Bank Project in May 1983 as a model for project monitoring and evaluation. The concept and the structure of the Bank are gender neutral which means that it can be applied by other development agencies as well.

The Knowledge Bank is intended to serve as a resource for:

- **local community baseline and impact information;**
- **trend analysis on women's participation in the development process at the micro (community) and national development planning levels; and**
- **sharing experience in project design and implementation facilitated by the Bank's feedback capabilities.**

The purpose and the main focus of the Knowledge Bank is to create an information resource which includes an **impact analysis capability** and which will enable development planners and participants to share and compare their **learning experiences**. This value-added evaluative dimension of the system offers a potential to improve the capability of information systems in the development field.

THE METHODOLOGY

Generally, the K/B methodology makes use of the normal procedures of project documentation and monitoring currently practiced by the UNDP and other development agencies in its Information Baseline System (Tier I) e.g. project document, progress reports and final report. However, the methodology calls for the addition of certain documentation to place a given project within its particular context – i.e. country profile, community analysis and participant profile data (descriptive characteristics of their pre-project situation).

The methodology also systematizes progress reporting in consistent categories throughout a project's life. It starts with the project document which is designed to assist formulators in defining clear objectives and in projecting concrete results and measurable impact. The project document is indeed the first step towards a good evaluation. The contextual placement and systematized reporting gathers and organizes project experiences, as reported, for the Impact Assessment System of the Bank (Tier II).

Because of the nature of development projects in general, and UNIFEM's mandate in particular, the Knowledge Bank is designed to reflect as closely as possible the multiple facets of projects. Its methodology is tuned to capture qualitative nuances as well as quantifiable consequences of UNIFEM supported development activities. Thus, impact is not measured by the usual indicator system, "success" or "failure" of a project, but rather by a ranking and rating system which indicates the direction and degree of accomplished change.

These impact assessments are made by evaluators (a review/evaluation committee has three members) who, combining the systematized project experiences documented during the project cycle and their particular expertise, rate and rank the project's various impacts, first individually, (in accord with certain criteria), and then meet to argue out a set of common ratings. The latter is fed back into the Knowledge Bank's impact assessment system.

Provisions are made in the evaluation procedures, to ensure that each quantitative rating and ranking is backed with a qualitative statement i.e. an example and a reason for assigning that particular measure. It is hoped that risks of subjectivity and easy-marking by individual evaluators will be further contained when the evaluators meet, discuss their individual judgements and arrive at a consensus rating and ranking of the project.

THE SYSTEM

The Bank's storage and retrieval system is designed to give three basic levels of outputs, fulfilling the substantive and procedural needs of UNIFEM:

- a) **Project Information Baseline data** - procedural documents (i.e. project document, progress reports, final report) plus additional contextual placement documents (i.e. country profile, community analysis, participants profile). Baseline documents, which contain lengthy prose descriptions are stored in the traditional manner, in filing cabinets. Abstract data is processed and stored in the computerized system.
- b) **On-going monitoring/impact data** - this intermediate level provides abstracted *cumulative* baseline data. It is computerized and therefore, immediately retrievable for quick scanning on line or in printed form for intensive review.
- c) **Impact data** - consensus ratings or rankings of completed projects by committees of evaluators. Results are retrievable in both printed and computerized form for **comparative** and trend analysis of selected categories of projects or of the Fund's total project portfolio.

POTENTIAL USERS

The Bank's design and operational format have been tailor-made to expedite the implementation process of the UNIFEM mandate. The Bank, therefore, has very specific capabilities to enhance the UNIFEM's policy-making process, the management of project implementation and administrative support-system.

The following inventory does not exhaust the full range of possible outputs, but summarizes the main user services the Bank can provide:

- a) **For Policy and Decision-Makers**, the Bank offers the results of its primary objective - impact and trend analyses of completed project-support activities in both qualitative and measurable forms. This includes both field and headquarters perspectives as well as third party technical expertise.

The Bank also offers the by-product of on-going impact information from its Project Monitoring/Impact system. The Fund has a large portfolio of on-going projects that can benefit from the monitoring of anticipated and unanticipated results during implementation.

- b) **For Programme Officers and Project Field Managers, the Bank through its country, community and participants profiles offers the possibility to appraise and readjust projects so that objectives and workplan relate to local and national priorities and rely on feasible resources.**

For programme officers, the abstracted and computerized data allows them to easily and quickly review their projects on the computer or to generate printed reports.

Combined with financial data bases and networking systems, there are wider possibilities for sharing and transferring information between program officers, field project managers and executing agencies.

The Project Monitoring System is especially designed to flag on-going implementation accomplishments, unexpected project consequences, problems and problem/solution processes.

- c) **For the UNIFEM Administrative Support, the Bank offers quick and easy access to current and cumulative project factual and status data. UNIFEM will use this reference data base for record-keeping and reporting function.**

A Substantive Abstract of each completed project will be useful for functions such as fund-raising, public relations, specialized publications and inter-agency communications.

- d) **External users - The Bank will offer other development agencies, governments, and non-governmental organizations as well as such associations as bilateral groups at least two new resources possibilities to enhance goals which are similar to those of the Fund.**

In the first instance, they will be able to use, by request, the Bank's baseline and impact outputs to get a more objective and realistic "rule of thumb" on the concrete results of the interplay between development efforts and their effects on women.

Secondly, since the Bank is a prototype impact analytic system, these entities can broaden the Bank as a common resource by either adding to it their experiences or by adopting the system as a whole. Either possibility enlarges the systematized pool of "knowledge" about the consequences of interfacing development programs and women.

CONCLUSIONS

The Knowledge Bank system of UNIFEM is a unique model. It is expected to be a useful tool for designing a project within a feasible context and in response to the needs expressed by its ultimate beneficiaries. It is designed to assist in monitoring and evaluating project efficiency and impact and for making the necessary adjustments based on expected and unexpected directions of the project.

Moreover, the Knowledge Bank is expected to serve as an institutional memory, a systematic building block, where lessons drawn from each project experience are documented and disseminated to be used for future projects by project participants, development agents and policy makers.

An overriding concern of the entire process is not only to find out "what was done" and "how", but also to identify "what was learned". Each project provides a learning experience for all the partners in the project - project participants and project managers in the field, as well as for UNIFEM programme officers, national level policy makers and other partners.

This process is facilitated in two ways: first, the project is placed within its socio-economic context with the three new elements i.e. a country profile, a community analysis and a participant profile. Secondly, project reporting on expected and unanticipated results in reference to measurable and qualitative targets keeps the monitoring system open to capture the on-going impact of the project (both negative and positive).

It may be worth simply noting that, it is often difficult to establish causality between project inputs and the impact observed overtime.

The merits of the participant profile is two fold. It provides a quick picture of the participants family, education, income and living conditions. It also serves as the basis for a sample survey, taken at the beginning of the project, to assess the participants' expectations of the project. The same sample survey taken upon completion of the project examines the extend to which the participants' expectations were fulfilled, as well as the problems and frustrations that the participants were faced with. This is the embryo of an evaluation of projects achievements and failures by the participants themselves.

Finally, it is to be emphasized that the Knowledge Bank system is not a blueprint for impact assessment of women's projects. The system has the flexibility to respond to changes in order to meet new challenges. The major lesson we have learned from our project experience over the years is that the beneficiaries of the project will reap the maximum benefit, if they themselves are involved in the identification, formulation and the management of the project. This exercise necessitates a bottom-up participatory approach

in all phases of a project cycle. It also necessitates the development of participatory monitoring and evaluation methodologies with indicators of impact updated all through the project execution. The development of such methodologies constitutes a new challenge for UNIFEM.

WANG



LAJBERG

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Planning for
Monitoring and Evaluation.

A case from a Danida-assisted
Water Supply Project in Tanzania

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1. Background

1.1 Policy for Water Supply and Sanitation

Danida adheres to the principles of the IDWSSD. In doing so, it puts great emphasis on community based water-and sanitation projects. Evaluation of Danida-assisted projects have shown that they often become non-functioning after a short time, unless they have been developed on basis of the communities' felt needs and include a gradual build-up of local capacities to operate and maintain the installations.

Steps were taken already in the late 1970'es to assign sociologists/antropologist as technical assistance personnel on Danida assisted water - and sanitation projects. Planning with the communities has throughout the 80'es been considered as a pre-condition for the development of ownership. Some of the activities used to establish functioning village based water-and sanitation systems include:

- carry out village inventories,
- establish village water-and sanitation committees,
- involve end users in site selection,
- train villagers as caretakers/mechanics,
- establish village funds for O & M,
- train villagers as health promoters,
- provide skills for village mason for latrine construction,
- etc...

It is well known that provision of clean water and sanitary latrines in themselves does not lead to improved health. It is, however, recognized among epidemiologists and project planners that the principal contribution of improvements in water supply and excreate disposal is that they facilitate improvements in domestic and personal hygiene which - in turn - interrupt numerous pathways for diseases related to contaminated water and poor hygiene.

Water and sanitation installations are only conducive to improved health if they are used in a proper and hygienic way. Contamination of drinking water between the point of collection and that of consumption is not under direct control of project or government interventions. Within a social and physical infrastructure, improved through water supply and sanitation facilities, better health conditions depend on modifications of individual behaviour patterns. Hence the emphasis on health promotion, community participation and communication in Danida supported water-and sanitation projects.

1.2 Sustainability and Replicability Problems

Tanzania was the first country in which Danida made serious attempts to assist with the establishment of a community based water supply. An external evaluation carried out by IRC (1988) showed that success was noticeable with regard to the organization of community management. The villagers had established water committees - with half of the members being women - who had taken responsibility for the daily operation of the schemes.

However, proper back-up from administrative levels above the village does not yet function adequately. The success of the project is primarily due to a strong project organization, managed mainly by expatriate staff. The benefits of the project will most likely not be sustainable, since government agencies had not been prepared to provide the necessary support for village based water supplies. Moreover, those achievements that had been made, for instance with regard to establishing procedures for mobilizing the communities have not yet been replicable outside the project area, since sector responsible institutions have not been systematically strengthened during project implementation.

Many explanations could be given for this situation, but hardly any of them would justify the fact that the project was very much implemented parallel to the government structure.

The project began more than 10 years ago, and was until recently guided by an objective which only referred to construction related interventions. It was of less importance how the production targets were reached than actually reaching them. In spite of this, expatriate staff responsible for community development with support from (mainly) project recruited staff, succeeded in mobilizing the communities and preparing them for operating the schemes.

There was no overall planning document - except for an implicit understanding among project staff about the importance of involving the communities. This meant that there was no basis for undertaking regular monitoring of project activities and outputs. Without performance/output indicators there was no way the project could monitor/control achievements made. This made it difficult for the project to "reward" personnel - especially Tanzanian staff.

As a consequence of this there could hardly be any manpower development plan which in a systematic manner prepared Tanzanian staff to take over the project, nor did any indicators exist to determine when a particular community was considered capable of operating and maintaining the project installations. Lack of operational indicators also meant that there was a lack of incentives especially to guide the performance of Tanzanian staff. The project was designed as

if the donor for ever would be present to ensure an uninterrupted service of the installations. Limited attention - if any - had been given to question of getting groups of people organized for the purpose of long term sustainability and replicability. Attempts at operationalizing the concept of institutional development were not made until 1988.

3 Project Planning takes a new turn

Internal project reviews as well as evaluations carried out by external agencies made convincing arguments for introducing a more firm basis for project implementation. Consequently, in 1989, it was decided to use the Logical Framework Approach (LFA). It is still too early to draw any conclusions from its use.

The expected benefits to be derived from the LFA can be summarized as follows:

- highlights disagreements on project components,
- improves design of people-oriented projects,
- facilitates preparation of monitoring instruments at central and community levels,
- improves institutional performance.

Assuming that the project designer has identified the real problems and carried out proper analysis, the LFA's main advantage is that it guides its users in the formulation of objectives.

Arturo Israel (1989) discusses at length the need to be as specific as possible when setting objectives that involve institutional performance. The degree of specificity has precise effects on the actors and accordingly on the performance of the institution. Israel notices that the degree of specificity is higher for some activities than for others. Those related to people-oriented activities have low specificity.

Israel states that the concept of specification consists of the potential for defining objectives, methods for achieving objectives, and control systems and the length of time for which these definitions are valid.

The more precisely we have formulated objectives and the methods (outputs and activities) we intend to use in order to achieve them, the easier it will be to monitor (control) activities as well as project results (outputs). In Israel's words: "...the ability to control achievement, is a result of the ability to specify objectives and methods and thus to verify achievement" (p.55, 1989).

The implications for planning of people-oriented projects, such as water and sanitation projects, are that although one may start out with a rather clear formulation of objectives

it will seldom be of the same high degree of specificity as for instance for a "jet engine repair project".

But it is not only a question about how specific one can be, but also for how long. In people oriented projects conditions change constantly. Socio-cultural and political events change the environment of the project, thereby changing the relevance of activities. But if attempts have been made to be specific during formulation of objectives and establishment of indicators, there is a good chance that one shall be able to monitor progress and thereby discover when activities do not serve their intended purpose. When this happens, there is a need to revise the objectives of the project.

It is worth noticing that Israel's analysis is in line with conclusions made by Rondinelli (1983) who advocates an adaptive planning approach.

A major problem in people-and socially oriented projects is that the effects of performance are weak, delayed, less identifiable and diffuse. Often the effect of an activity do not occur until years later and then the actor(s) cannot be traced. This is another reason for determining objectives and outputs as specific as possible.

4 The Case of Tanzania

4.1 Pre-Plan of Operation

With a view to overcome the problems discussed above, Danida initiated the preparation of a plan of operation for the third phase of a water-and sanitation project in Tanzania. The preparation was made with use of the LFA. It was the wish of the Tanzanian government as well as that of the donor that the sector responsible authorities should be strengthened to play a stronger role in the implementation of the project and that the communities ultimately should be given formal responsibility for operation and maintenance.

Although the project was almost ten years old, it was necessary to undertake a number of studies to establish baseline data in order to decentralize functions which used to be centrally located. Following these studies a three day workshop took place to familiarize project staff with the LFA and to analyse problems facing the project at its present phase. Subsequent to this, the project staff returned to the project sites (in three regions) to work on the preparation of a plan of operation for their respective regions. The whole exercise from the time studies were carried out by external consultants, through workshop to final write-up of the plan of operation, lasted approximately six months.

4.2 Plan of Operation

Sector institutions are in Tanzania placed at three administrative levels: Central, regional and district levels. The institutions in need of strengthening deal with water, health and community development. All functions at district level are the responsibility of the Ministry of Local Government.

Since capacity building will take place at these three levels, project objectives have, accordingly, been formulated to cover all three levels, as shown below. For each of them a number of major outputs have been established.

Attempts have been made to determine appropriate verifiable indicators for each objective and for each output in order to arrive at indicators which may form the basis for subsequent monitoring and evaluation.

	<u>Project Objectives</u>	<u>Indicators.</u>
1.	District and village capacity improved for operation and maintenance of village water supply schemes, and sanitation at village primary schools and dispensaries, with a view to ensuring their sustainable utilization.	<u>Mbeya:</u> 4 districts with functioning O & M capability <u>Iringa:</u> 3 districts <u>Ruvuma:</u> 3 districts
2.	Capacity improved at regional level for undertaking activities related to the water and sanitation sector with a view to increasing the population served through the construction of new village water supply schemes, and sanitation facilities at village primary school dispensaries.	Gradual phasing out and reduction of expatriate advisers/Danida-funded personnel.
3.	Capacity improved at national level for undertaking activities related to rural water supply and sanitation sector.	Design approval and final inspection of completed schemes carried out by Maji HQ staff before end of project period.

When these three objectives had been determined, questions were raised regarding the outputs necessary for achieving them. The outputs have been arranged in a corresponding manner with the objectives. Outputs 1.1 to 1.5 are considered necessary - although not necessarily sufficient - for achieving the first objective.

<u>Project Output</u>	<u>Indicators</u>
1.1 Community Decelopment support office for O&M established in Reg. C.D. office.	1.1.1 VPC transferred from Maji to CDO by: Mbeya: January 1992 Iringa: January 1991 Ruvuma: January 1992
1.2 Effective district O&M support to village water supplies established.	1.2.1 Down-time period not exceeding two days after major incidents reported by village to DWE.
1.3 Effective village O&M system established	1.3.1 Water supplies interrupted for less than 24 hours after minor incident being reported to scheme attendant.
1.4 Effective maintenance procedures for institutional latrines established	1.4.1 Latrines in daily use. CDA monitoring report.
1.5. Project relevant catchment areas protected	1.5.1 Water quality and quantity not deteriorating from time of preliminary design report.

Outputs for objectives number three were determined to be as follows below:

- | | | | |
|-----|---|-------|--|
| 2.1 | Efficiency of Maji and Maendeleo regional staff to plan, implement and manage water supplies/ sanitation facilities improved. | 2.1.1 | Average implementation rate and quality maintained with a decreasing number of advisory staff. |
| 2.2 | 155 villages provided with water supplies in accordance with WMP criteria. | 2.2.1 | Mbeya: 65 villages
Iringa: 50 villages
Ruvuma: 40 villages |
| 2.3 | Institutional sanitation facilities constructed at 155 villages. | 2.3.1 | Sanitation facilities:
Mbeya: 65 villages
Iringa: 50 villages
Ruvuma: 40 villages |

Outputs necessary to achieve objective number three:

- | | | | |
|-----|--|-------|--|
| 3.1 | Project management systems developed at Department of Design, Construction and Materials Testing through PICU support. | 3.1.1 | Effective control of programming, designing and implementing Danida-assisted project activities carried out by Maji HQ staff before project termination. |
| 3.2 | Experience necessary to achieve a sustainable rural water supply and sanitation sector developed. | 3.2.1 | Effective monitoring and evaluation plan for O & M activities established within project period. |

4.3 Activities.

Major activities have been indicated for each output to indicate the project strategy. Naturally, the plan of operation does not replace a detailed workplan which are worked out quarterly on basis of the plan of operation. An overview of the plan of operation is facilitated by a schematic presentation - examples of which have been annexed. These schema contain also information on who is responsible for specific activities.

5 Principles for Field Monitoring

The plan of operation with indicators shown above serves as a monitoring instrument for project management, typically placed at central or regional level in a country. Efforts have been made to establish indicators which can be monitored by field staff without specialized personnel.

If we - by way of an example - look at output no. 1.3.: "Effective village operation and maintenance system established" it will be noticed that the Community Development Assistant (CDA) will collect the data necessary for monitoring of project activities at field level:

Output no. 1.3.

Effective village O & M systems established.

Activity.

Support village water Committee (VWC) and Group Scheme Committee (GSC) to undertake O & M responsibilities, incl. development of procedures for recovery of maintenance costs.

Indicator.

- Job description for attendants.
- agreement with attendants.
- village records on scheme performance.
- bank accounts established.

Means/sources of verification.

- Village records submitted to District Maintenance Unit.
- Bank accounts.

Responsible Dept./persons.

Staff at the community development department and in the office of the district engineer.

Additional examples are shown in the annex.

6. Literature References.

Danida: Handbook on Logical Framework Approach. LFA - for Project Preparation. Vol.I Procedures and Examples, Vol. II Clarifications, Copenhagen 1990.

Israel, Arturo: Institutional Development, Incentives to Performance. Johns Hopkins University Press, 1989.

Rondinelli, Dennis: Development Projects as Policy Experiments. An adaptive approach to development administration. Methuen, 1983.

Kristian Laubjerg

Danida

PLAN OF OPERATION RUVUMA REGION			GoT/Danida RURAL WATER SUPPLY PROJECT					PLANNING PERIOD: 1990-94		DATE: JUNE 1989		SHEET No: 2										
ACTIVITIES	INDICATORS	MEANS/ SOURCES OF VERIFICATION	RESULT/OUTPUT NO.: 1.2 Effective District O&M Support to Village Water Supplies Established															RESPONSIBLE		EQUIPMENT MATERIAL REQUIRED	COSTS DKK x 1000	REMARKS/assumpti
			TIME SCHEDULE															GoT	Project Staff/ Danida			
			1990			1991			1992			1993			1994							
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4			
1.2.1 Sign agreement between District Councils and Maji for transfer of O&M facilities to DWE.	agreement signed	minutes of RSCM																RWE/DED	Danida Project Advisers in Region (O&M advisers)		1.2.1 Incl	1.2.1 Phasing of agreements based on experiences gained in the first district. Ref. to 1.2.7
1.2.2 Establish adequate office yard and store facilities for DWE.	1.2.2 Workshop and offices established in all districts.	1.2.2 Quarterly Progress Reports																RWE/DWE/DED	RPA	1.2.2 office furniture workshop equipment, hand drill, fencing (see budget lines)	1.2.2 2295	
1.2.3 Provide logistical support to Maendeleo staff at district level and below as appropriate for O&M activities.	1.2.3 3 vehicles 25 ward motor bikes, up-grading existing office facilities at district level.	1.2.3 -ditto-																RCDO	VPC	1.2.3 see budget lines in annex	1.2.3 970	1.2.3 all three districts shall have an O&M system established:
1.2.4 Up-grade O&M involved staff through appropriate training, incl. training in use of communication mat.	1.2.4 - DMUs - DWE - DCDO - CDA (see annex)	1.2.4 Quarterly Progress Reports																	short-term consultant	1.2.4 Training mat. communication materials (see consultant's reports)	1.2.4 37.75	
1.2.5 Establish mobile maintenance units (DMU) in selected districts.	1.2.5 DMUs in Ruvuma (all by end of 1994)	1.2.5 Quarterly Progress Report																RWE, DED, DWE	O&M adviser	1.2.5 Drivers mechanics (technicians) CDAs	1.2.5 732	1.2.5 Districts must be capable of employing staff, adequately trained and experienced.

PLAN OF OPERATION RUVUMA REGION			GOT/Danida RURAL WATER SUPPLY PROJECT												PLANNING PERIOD: 1990-94		DATE: JUNE 1989		SHEET No: 3					
ACTIVITIES	INDICATORS	MEANS/ SOURCES OF VERIFICATION	RESULT/OUTPUT NO.: 1.2 (cont.) Effective District O&M Support to Village Water Supplies Established												RESPONSIBLE		PERSONNEL REQUIRED	EQUIPMENT MATERIAL REQUIRED	COSTS DKK x 1000	REMARKS				
			TIME SCHEDULE												GoT	Project Staff/ Danida								
			1990			1991			1992			1993									1994			
			1	2	3	4	1	2	3	4	1	2	3	4							1	2	3	4
1.2.6 Stock spare parts and tools at DWE's stores.	1.2.6 spares and tools stocked in 3 districts and available without delay for purchase by villagers by end of 1994.	1.2.6 -ditto-																	RWE, DED		1.2.6 Storekeepers	1.2.6 Initial spares and tools.	1.2.6 500	1.2.6 Availability of spares and central level.
1.2.7 Improve financial and management procedures of DWEs' offices incl. establishment of revolving fund for recovery of maintenance costs.	1.2.7 accurate budgeting, well kept accounts and a plan for cost recovery: Account no. in Bank.	1.2.7 - review mission - Quarterly Progress Report - Bank statement																	RWE, DED DWE	PICU + Accountancy advisers, O&M	1.2.7 Short term consultant (cost recovery and local government)	1.2.7 Training materials and initial spares for sale to VWCS.	1.2.7 7.5	1.2.7 District councils must budget for running cost ahead of transferring maintenance responsibility.
1.2.8 Strengthen lines of communication between concerned regional and district institutions for effective monitoring	1.2.8 one regional monitoring unit provided for District level O&M support	1.2.8 Quarterly Report																	RWE/RCDO	RPA	1.2.8 Reg. mobile maintenance + monitoring	1.2.8	1.2.8 451	1.2.8 A mobile monitoring unit shall advise DWE O&M support at the initial system set-up with assistance from RCDO.
1.2.9 Findings from monitoring activities communicated through RSCM to DED for subsequent action	1.2.9 Monitoring carried out by RWE/RCDO staff of District O&M personnel.	1.2.9 Monitoring reports submitted to RSCM.																	RWE	O&M adviser (VPC)	-	-	1.2.9 Incl	1.2.9 DED shall take action when monitoring indicates excessive down time periods.

PLAN OF OPERATION (MBEYA REGION)			GOT/Danida RURAL WATER SUPPLY PROJECT					PLANNING PERIOD: 1990-94		DATE: JUNE 1989		SHEET No: 4																		
ACTIVITIES	INDICATORS	MEANS/ SOURCES OF VERIFICATION	RESULT/OUTPUT NO.: 1.3 Effective Village O&M System Established															RESPONSIBLE		PERSONNEL REQUIRED	EQUIPMENT MATERIAL REQUIRED	COSTS DKK x 1000	REMARKS/assump:io							
			TIME SCHEDULE															GOT	Project Staff/ Danida											
			1990			1991			1992			1993			1994															
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4											
<p><u>1.3.1</u> Support VWC and GSC to undertake O&M responsibilities, incl. development of procedures for recovery of maintenance costs.</p> <p><u>1.3.2</u> Train and equip SA/H PAs to become competent caretakers.</p> <p><u>1.3.3</u> Develop an adequate reporting system between the village level and district authorities.</p> <p><u>1.3.4</u> Provide training/communication materials for villagers, stressing womens involvement.</p>	<p><u>1.3.1</u> job description for attendents, agreement made with attendants village records on scheme performances bank accounts</p> <p><u>1.3.2</u> New attendants and equipped with tools. Existing attendants given refresher courses</p> <p><u>1.3.3</u> Break-downs reported to VWC at time of occurrence and to DWE within 72 hours.</p> <p><u>1.3.4</u> - O&M involved villagers trained. - Development Communication Support Unit Established in Iringa</p>	<p><u>1.3.1</u> - village records submitted to DMU - bank statement.</p> <p><u>1.3.2</u> DMUs monitoring report</p> <p><u>1.3.3</u> records at VWC and DWE/RWE</p> <p><u>1.3.4</u> Report from Training coordinator/ Quarterly Progress Reports</p>	[Hatched bar]															RCDO/ DCDO/ CDA/ DWE	VPC O&M Adviser	<u>1.3.1</u> CDO assigned to RCDO	<u>1.3.1</u>	250	<u>1.3.1</u> VWC becomes standing committee under village govern.							
			[Hatched bar]																					DMU	O&M advisers	<u>1.3.2</u> CDAs	<u>1.3.2</u> Training and communication materials	<u>1.3.2</u>	225	<u>1.3.2</u> Attendants' bicycles are the property of the VWC.
			[Hatched bar]																											
			[Hatched bar]																					DWE CDA, Training coordinator	VPC	<u>1.3.4</u> Training Coordinators, Short-term communication specialist	<u>1.3.4</u> - Communication materials (see consultant's report)	<u>1.3.4</u>	580	<u>1.3.4</u> Training for Rural Development Centres to be used as Development Communication Support Units whenever available.
[Hatched bar]															RCDO	PICU	- graphic Maendeleo A-V Unit.	<u>1.3.4</u> - Film strips & 12v -batteries etc. - communication support vehicles	<u>1.3.4</u>											

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MANAGEMENT BY MONITORING: THE WATER AND SANITATION SECTOR

by

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FOR COMMUNITY WATER SUPPLY AND
SANITATION

1. Introduction

It is imperative to regularly monitor the water and sanitation sector, during the 1990s, to determine performance and needs.

As a consequence of monitoring, it is necessary to manage the mobilization for the provision of these needs, in relation to sector performance.

Thus, monitoring will be the principal management tool, for the 1990s, to continually apprise the sector's co-ordinating body, both nationally and globally, of the sector's "health" so that the appropriate remedy, where required, can be prescribed and mobilized. In the 1980s, there was no systematic and sustained purpose around which to build sector management and co-ordination. Sector monitoring on an annual basis provides this purpose in the 1990s.

(Annex I and II which were Papers originally developed for internal UNICEF use, respectively provide a more detailed framework for the monitoring mechanism and the management body).

2. Monitoring

To monitor the sector during the 1990s, it is necessary to at least know the actual situation at the "beginning" and the expected results at the "end". The status of water and sanitation, on a country basis, as of 1990, and the determination of goals to be achieved by the year 2000, are fundamental to the process.

The two goals to be monitored are:

- Universal access to safe drinking water.
- Universal access to sanitary means of excreta disposal.

The terms "access" and "universal access" should be defined at the country level though an indicative global definition of "access" can be offered as a guide only.

Monitoring should be executed at the country and at the global level, with the latter being largely a co-ordination of the former.

To determine how the sector performs in terms of access to water and to sanitation, three areas can be considered as representative of the pulse of performance, as it is necessary to keep the items to be monitored relatively few and simple.

W/...
...
...

At the country level, the three areas are:

- Coverage (national + others)
- Cost ~~efficiency~~ *effectiveness* { *cost efficiency*
cost sharing
- Sector funding (divided according to proportion for low-cost and high cost-systems).

Indicators for the first two areas are as follows:

- Coverage indicator(s):
 - Systems functioning (Number of persons served by functioning systems).
 - Systems utilized (Number of persons using functioning systems).

- Cost ~~efficiency~~ *effectiveness* indicator(s):
 - *cost efficiency:* Unit and per capita costs of a handpump-equipped borehole.
 - *cost sharing:* % contribution to O & M by communities

At the global level, the areas for monitoring are:

- Coverage (internationally) largely to determine rate of acceleration.
- Global funding for the sector (to identify changes relative to the 1980s and to note the proportion spent on low-cost technologies vs. high-cost ones).
- *cost effectiveness.*

Monitoring will be executed annually, based on the status in December of the previous year. At the country level, governments, assisted by the External Support Agencies (ESAs), will be responsible for the area-wide data collection which will be computerized via the modified WHO CESI-PROFILE system when the latter is adjusted and in place. UNICEF is prepared to assist with computer hardware at the country level. But as data has to be collected on a country by country basis from 1990 (base year) UNICEF and WHO country offices must necessarily carry the data-base initially until the system can be properly established in the governments' institutions.

At the global level, UNICEF and WHO will jointly be responsible for the monitoring.

3. Co-ordination and Management

In accordance with the foregoing monitoring framework, country and global information on the performance of the water and sanitation sector will be available during the second half of each year, based on data as of December of the previous year. This information is collected to assist the sector in making course corrections at regular intervals.

At the country level, the government is the co-ordinator and manager to manage the results of monitoring and to make the necessary course corrections. Where the government prefers to delegate this responsibility, the major actors in the sector, at the country level, can decide amongst themselves which agency or person is best suited to play the co-ordinating role.

At the international level, a global co-ordination committee (GCC), comprising about 15 persons with the developing countries having a majority presence on the committee, should have the responsibility for dealing with the global implications of the results of the monitoring. The committee should note the trends to see whether they are positive or negative and respond accordingly; should determine whether the global inflow of funds to the sector is adequate and, if not, decide on actions to improve the situation; should note the causes and indicate solutions for those countries or geographic regions that are falling behind their expected coverage targets; and should be regularly promoting the sector and its goals, and mobilizing the world via all available means of information/communications so that the water and sanitation thrust can be kept perpetually at the forefront of world affairs. These are just some of the major tasks of the global co-ordination committee.

4. Conclusion

If the sector were to have the courage and will to link monitoring and management in such a meaningful way, it would have pragmatically answered the question: How can we make a difference in the 1990s?

GLOBAL AND NATIONAL MONITORING OF THE
WATER AND SANITATION SECTOR

1. Introduction

The principal reason for monitoring key areas of the water and sanitation (WATSAN) sector, is to provide management with information regarding sector performance, at reasonable and regular intervals, in order that corrective action could be taken, if necessary.

Because of the many agencies assisting government with sector development at the country level, the thrust is to assist the government in establishing and operating its own monitoring system. The local UNICEF office will establish an effective working relationship with this government-operated monitoring system.

Within the Water and Sanitation Section at UNICEF Headquarters, New York, an Officer will serve as focal point for global monitoring of the sector.

The two WATSAN goals to be monitored are:

- Universal access to safe drinking water.
- Universal access to sanitary means of excreta disposal.

2. Definitions

"Access" and "universal access" must be defined in detail at the country level. For water, the definition should be in terms of quantity per person daily, quality, and distance from the consumer's dwelling. An indicative one can be, about 20 litres of safe water per person daily, located at a total distance of within one kilometre from the user's dwelling. Since sanitary means of excreta disposal cannot be confined only to latrine use, the sanitation definition can be broader and may encompass the following: hygienic practices manifested by sanitary means of excreta/waste disposal.

3. Priority Areas and Indicators

3.1 Country Level Monitoring

At the country level, the areas to be monitored are to be kept few and simple but at the same time, they should be an effective barometer of the sector performance and also reflect the major thrust of the sector workplan for UNICEF (1990-95). The following three areas are to be monitored:

- Coverage (national + UNICEF-assisted segment).
- Cost efficiency (Government systems in general + UNICEF-assisted systems).
- Proportion of total annual investment, nationally, in low-cost relative to high-cost WATSAN systems. (Low-cost describes those systems such as boreholes/wells with handpumps, gravity-fed systems, rainwater catchments, latrines, etc. where the per capita cost for water is US \$30.00 or less and for sanitation US \$20.00 or less. High-cost refers mainly to mechanized high technology ones with per capita cost for water in the order of US \$200.00 and sanitation US \$350.00.

*Annex to Paper entitled, "Management by Monitoring: The Water and Sanitation Sector", by J. Christmas, UNICEF.

Indicators for two of the areas to be monitored at the country level are:

- Coverage Indicator(s): - Systems functioning (Number of persons served by functioning systems).
- Systems utilized (Number of persons using functioning systems).
- Cost-efficiency Indicator(s): Unit and per capita costs of a handpump-equipped borehole.

At the country level, each different type of water supply system has its number of beneficiaries, e.g. in Africa one handpump-equipped borehole serves about 500 persons, but about 250 persons in Asia; a dug well with a windlas may serve 100 persons; a gravity-fed system may be designed to serve hundreds or thousands of persons, etc. Functional systems are to be identified to provide the apparent coverage. The ratio of functioning systems to the total number of systems will give valuable information regarding maintenance and sustainability of systems. On the other hand, utilization of the provided systems by the consumers, will give the actual coverage. But it is far easier to monitor functioning (apparent-coverage) than utilization (actual coverage) thus, the monitoring frequencies for each can be different. The ratio of actual coverage based on number of people actually utilizing the systems, to the apparent coverage based on the number of people having functional systems, can be revealing in terms of outcome.

Since handpump-equipped boreholes represent the water system most widely used among many developing countries, the evolution of the unit cost of such a system can give an indication of cost efficiency. Africa is expected to bring its unit cost down to below \$5,000.00 and Asia below \$3,000.00 by 1995. This cost reduction can fuel the rate of acceleration by providing "additional" funds to the sector via savings.

For sanitation, the coverage indicator is to be based on utilization, i.e., the utilization of any hygienic means for the sanitary disposal of excreta/waste. This is more difficult (than in the case of water supply) to measure, but as latrines are not the only mode for sanitary disposal of excreta/waste, the indicator cannot be based on latrines.

3.2 Global Monitoring

The Water and Sanitation Section at UNICEF Headquarters will monitor, globally, the following three areas:

- Global funding for the sector (to identify the proportion spent on low-cost technologies vs. high-cost ones).
- Expenditure per Project Code (PIDB system) -- to determine, among others, the allocations for sanitation and for hygiene.
- Coverage (internationally) -- to determine rate of acceleration relative to the 1980s.

The global monitoring from UNICEF Headquarters will focus not only on the UNICEF-assisted WATSAN programmes but also on the sector as a whole. It is necessary to monitor the total financial input to the (global) sector and the percentage which goes to low-cost technology systems and to high-cost ones, as the respective percentages are currently 20:80. Efforts are being made to move them in the direction of 30:70. UNICEF's total financial contribution more or less goes to the low-cost option. Sanitation (and hygiene), two of the three components of the

WATSAN sector, lag significantly behind water supply coverage for several reasons, one of which is that insufficient financial resources are allocated to them. It is necessary to increase the sanitation expenditure from its less than 10% of the ATSAN budget to about 20% thus, the necessity to monitor the expenditure on the three project codes of the sector's PIDB system. Implementation (coverage) rates for urban and rural water supply for the 1990s need to be respectively increased about 2.5 and 1.5 times those for the 1980s, to achieve 100% coverage by the year 2000 whilst urban and rural sanitation rates respectively require a 3-fold and 4-fold increase. These rates, therefore, have to be monitored globally.

4. Reporting, Frequency and Timing

Generally, reporting should be done at least annually via the Field Annual Report. For water supply coverage, the indicator which is based on functioning systems give only the apparent coverage whilst that based on utilization gives the actual coverage. As utilization is a more difficult and time-consuming indicator with which to work, it is recommended that apparent coverage (functioning systems) be monitored annually but actual coverage (utilization) be monitored every two years - that is, for those countries that are unable to make surveys annually based jointly on functioning and utilization.

The reporting should reflect the status for December of the previous year. For example, the Annual Report for 1991 should report on the situation as of December 1990, and the 1992 Annual Report on the situation as of December 1991, etc.

Reporting should commence from 1991. Thus, the 1991 Annual Report from the Field should report on coverage and cost-efficiency as described in the foregoing.

5. Required Resources

At the country level about \$30,000.00 is required for computer systems to assist the government to establish its monitoring unit. For UNICEF Headquarters, a Level 5 Project Officer, as focal point for monitoring, plus computer systems, are required in the Water and Sanitation Section. The foregoing should be considered as minimum resources needed, initially.

OUTLINE OF PROPOSED ORGANIZATIONAL ARRANGEMENTS FOR
WATER AND SANITATION SECTOR MANAGEMENT DURING 1990s

Introduction

With respect to the water and sanitation sector, the 1980s was characterised by formalities, institutional bodies, and a high U.N. profile. The U.N. profile was so marked, that the Decade of the 1980s was called the U.N. Water and Sanitation Decade thereby diluting, somewhat, the efforts and initiatives of developing countries with respect to their rightful role in the sector.

For the 1990s, we should change this radically so that ownership of the water and sanitation sector can be "returned" to the developing countries for their management, ably assisted by the external support agencies (ESAs) which should support (not lead) the efforts in these countries.

Main Thrust

The major tenets of this management endeavour should be the following:

- Downplay the formal role of the U.N. Let the governments and other national institutions of developing countries be at the forefront.
- Rather than have any formal declarations, per se, from the U.N., the global water and sanitation sector should launch/promote the 1990s from the perspective of a "moral mission" to achieve universal access for water and sanitation by the year 2000. From a practical standpoint, all that the sector needs to know have been learned from the lessons of the 1980s. Armed with these lessons, the sector (with governments of developing countries in the lead role) can take care of itself without having to hide under another U.N. declaration. The sector has the moral obligation and the know-how to target and achieve universal coverage of water and sanitation facilities, by the year 2000.
- The goals set, the strategies developed, and the implementation mechanisms devised, must all have ownership at the country level. Water and sanitation programmes are national responsibilities -- and this must not be forgotten in the 1990s; on the contrary, it should be the guiding light.
- At the country level, it has been accepted, in principle, that developing countries' governments must co-ordinate sector endeavours. But where governments prefer not to play such a role, the major actors in the sector, at the country level, should elect an agency or individual to execute the co-ordination (as is done in Kenya).

*Annex to Paper entitled, "Management by Monitoring: The Water and Sanitation Section", by J. Christmas, UNICEF.

OUTLINE OF PROPOSED ORGANIZATIONAL ARRANGEMENTS FOR
WATER AND SANITATION SECTOR MANAGEMENT DURING 1990s

- 2 -

- At the global level, a global co-ordination committee (GCC) should be formed, albeit a very "loose" one -- as the sector should avoid a rigid institutionalized organ with formal staff, etc. This GCC should reflect the fact that the developing countries are responsible for their water and sanitation programmes and must therefore play the lead role. Thus, it is proposed that a 15-person GCC be established with 8 of these persons representing the entire developing world, as follows:
- Global Co-ordination Committee Membership (15 total):

WHO (multi-lateral)	1 member
UNDP (multi-lateral)	1 member
IBRD (World Bank - multi-lateral)	1 member
UNICEF (multi-lateral)	1 member
Bilaterals Representative	1 member
NGOs Representative	1 member
Professional Institutions Representative	1 member
Asia	3 members
(South Central Asia -- 1 person)	
(Southeast Asia -- 1 person)	
(China -- 1 person)	
Africa (sub-Saharan)	2 members
(East/Southern Africa -- 1 person)	
(West/Central Africa -- 1 person)	
Middle East and North Africa	1 member
Latin America	1 member
Caribbean	1 member

As WHO, UNDP, IBRD (World Bank) and UNICEF are the multi-laterals most heavily involved in the water and sanitation sector, they are each represented. The chairmanship of the GCC should rotate among these four multi-laterals every two years, so as to avoid any agency having this position in perpetuity. The bilaterals, NGOs, and the professional institutions are each represented by one member. This accounts for a total of 7 members, not necessarily representing developing countries. Thus, the remaining 8 members should represent geographic regions among developing countries, as indicated. (One may wish to include a representative from the new democracies of East/Central Europe. This should be done, if necessary, at the expense of one of the geographic regions' representations so as to keep the total membership to a manageable 15).

OUTLINE OF PROPOSED ORGANIZATIONAL ARRANGEMENTS FOR
WATER AND SANITATION SECTOR MANAGEMENT DURING 1990s

- 3 -

The multi-lateral agency which holds the chairmanship for any two-year period, will also be responsible for funding the one/two staff members required as executive secretary to the GCC. The GCC may meet once per year with the possibility of responding to unscheduled meetings, if necessary. The ESAs will jointly/separately pay the travel costs of the regional representatives from developing countries when they are preparing for, and participating in, GCC meetings.

- The GCC is being created to avoid the donor-receptient approach which existed all through the 1980s to the present. We need to establish a "participants" modus operandi for the 1990s. With this approach, the ESAs, Collaborative Council, Technical Working Group, etc., of the 1980s must lose their high-profile significance. The term ESAs may remain, in as much as it represents an informal, non-institutional group, comprising essentially the developed countries which provide about 35% of the global sector finances. If and when the ESAs wish to meet among themselves, this can easily be executed via the GCC or without the GCC. A formal body with a secretariat may not be required, as a parallel entity to the GCC, just for arranging meetings of the ESAs. The other terms should give way to the foregoing new thinking which should characterize the 1990s. Sustainability will be achieved if developing countries accept and practise their management role, within the sector, with all other agencies critically supporting the efforts of the said countries. The GCC provides a forum for this "new" management approach to blossom and bear fruit.

WET/102/90
J. Christmas, UNICEF
23 April 1990

MONITORING AND EVALUATION TO PAR

(vi) COUNTRY LEVEL

- AREAS FOR MONITORING ::

- COVERAGE (NATIONAL + OTHERS)

⊗ - COST EFFECTIVENESS

- COST EFFICIENCY

⊗ - COST SHARING

- SECTOR FUNDING (TOTAL, PROPORTION OF LOW-COST/HIGH-COST)

- INDICATORS FOR FIRST TWO AREAS

- COVERAGE INDICATORS ::

- Systems Functioning

- Systems Utilized

⊗ - COST EFFECTIVENESS INDICATOR(S) ::

- COST EFFICIENCY :: Unit and per capita costs of a hand pump - equipped by people

⊗ - COST SHARING :: % contribution to O&M by communities

(vii) GLOBAL LEVEL

- AREAS FOR MONITORING

- COVERAGE (GLOBAL)

- Global Funding For Sector

⊗ - COST EFFECTIVENESS

BACKGROUND MATERIALS

IRC

UNITED NATIONS
INTERNATIONAL RESEARCH
AND TRAINING INSTITUTE FOR THE
ADVANCEMENT OF WOMEN



NACIONES UNIDAS
INSTITUTO INTERNACIONAL
DE INVESTIGACIONES Y CAPACITACION PARA
LA PROMOCION DE LA MUJER

INTERNATIONAL RESEARCH AND TRAINING INSTITUTE
FOR THE ADVANCEMENT OF WOMEN
(INSTRAW)

INSTRAW EVALUATION METHODOLOGIES AND TECHNIQUES
ON
'WOMEN, WATER SUPPLY AND SANITATION'

Workshop on Goals and Indicators for Monitoring and
Evaluation for Water and Sanitation

(JUNE 25-29, 1990, Geneva, WHO)

RECEIVED
MAY 15 1990
INSTITUTO INTERNACIONAL
DE INVESTIGACIONES Y CAPACITACION
PARA LA PROMOCION DE LA MUJER

Santo Domingo
May 1990
INSTRAW

I. BACKGROUND

INSTRAW is mandated by its Board of Trustees in accordance with Economic and Social Council, resolution 1987/25 to carry out a long-term research programme related to monitoring and evaluation methodologies for programmes and projects on women in development. Subsequently, in its resolution 42/65, the General Assembly requested the Institute to promote general awareness of the need to integrate women into policy design, which would include the elaboration of special methodologies for monitoring and evaluation purposes. It is also requested the Institute to secure the feedback of research results into the operational systems.

Accordingly, the first stage of INSTRAW's programme in that field focused on the collection of the relevant information from the organizations in the United Nations System. A survey of the existing methodological approaches had been carried out and the findings were presented during the 'Consultative Meeting on Evaluation Methodologies for Programmes and Projects on WID; organized by INSTRAW and facilitated by UNFPA, from 8 to 10 November 1989, in New York. The meeting was attended by 43 participants from 25 United Nations organizations, three regional commissions and three bilateral donor organizations.

The survey on the evaluation methodologies and guidelines from several United Nations bodies and agencies which was carried out during 1988-1989 indicated that although the majority of organizations of the United Nations have developed evaluation manuals on guidelines, few give special consideration to the monitoring and evaluation of the integration of women in development issues within their programmes and projects. Twelve organizations made no mention of women, on whether they had evaluation guidelines. Ten organizations gave special consideration to WID issues, but did not link it to the monitoring and evaluation methodologies and procedures applied in the management of their programmes and projects. The survey, has underlined that there is a positive response to the Nairobi Forward-looking Strategies (paragraph 317) call for the integration of women in development by special studies, policy statements and strategies on WID.

II. INSTRAW Evaluation Techniques for Preparing Training Module on "Women, Water Supply and Sanitation" and Evaluating Their Impact

INSTRAW in co-operation with ILO/Turin Training Centre prepared multi-media training packages on Women, Water Supply and Sanitation in the biennium 1987-1988, INSTRAW gave priority to the modular approach by using its innovative methodologies and techniques in programme activities relating to training the trainers on women in development and sectoral activities such as water and energy. The innovative multi-media modular training methodology is a non-conventional form of training, with defined objectives, target groups and pedagogical scheme.

The training package, as developed by INSTRAW and ILO-Turin Centre contain three major parts: (a) general or specific objectives which clearly specify what trainees will be able to do upon completion of the unit; (b) the training content, or the material to be taught/learned; and (c) key-issue checklists from which the trainees will acquire and practice their skills. The exercises are designed to encourage maximum participation of trainees. Audio-visual materials are used as a component of the training packages or alone in both formal and informal training.

One of the most crucial components of INSTRAW training materials, modules, manuals are evaluation techniques. The evaluation techniques for training seminars and modules differ from evaluation procedure for research or information analysis. Evaluation is an integral part of all INSTRAW training modules and a way of establishing to which extent the goals set up by the project have been achieved. It is a participatory process which seeks to determine as systematically and objectively as possible the relevance, effectiveness and impact of training modules.

As applied in the preparation phase of INSTRAW-ILO-Turin Centre training packages, formative evaluation was conducted before finalizing the training packages. The training methodology and sound-slide packages were formatively evaluated in three major sections: subject-matter (content), instructional design, and technical presentation. The target audiences were interviewed on the effectiveness of sound-slide package as a possible innovative leading media for training purposes in the developing countries. The formative evaluator was asked to review factors, such as content accuracy, comprehensiveness, objectives and content for target population, language, clarity of objectives, sequence and relationship of ideas within content, technical quality, media compatibility of materials with training programme. The formative evaluators were experts in "Subject-matter", "Pedagogical", "Instructional design", and "Presentation and curriculum" categories.

The primary role of formative evaluation for INSTRAW was to enable us to verify a product with the target group in the development stages in order to provide feedback and improve the training modules and sound-slide packages.

From 1987 to 1989 INSTRAW organized, in co-operation with United Nations agencies and bodies and national counterparts four national training workshops in East Africa, one regional workshop for the Asia and Pacific region, to field-test INSTRAW/ILO/Turin Centre training modules "Women, Water Supply and Sanitation". The four training workshops were funded by a grant of the Italian Government. More than 200 participants attended the four national training seminars, and 38 participants attended the regional training seminar. In addition in co-operation with ZONTA International, a national training workshop was organized in May 1989 in Nigeria, and 50 participants attended the workshop.

In order to test the content, training packages and participants' comprehension, two types of evaluation forms were used at each training session, one during and one after the session, as a technique of summative evaluation which included information of training methodology, pedagogical scheme, training text, instruction, etc.

Beside the formative evaluation conducted during the testing stage in workshops, INSTRAW applied parallelly another form of evaluation to assess the effectiveness of training workshops. That is, we used the indicators to measure: level of interest of non-governmental organizations (NGO), number of them participating in seminars, statements made at seminars; level of press coverage, number of reference to programme on output cost, etc.; level of interest of inquires, group briefings, etc. INSTRAW had an excellent response in all training seminars on the above mentioned indicators as we were also interested to measure actions taken by the host-countries and NGO's as our primary target groups.

The basic tasks in evaluation methodology for training modules was to formulate a design which will help to ensure that the evaluation exercise would provide relevant and valid findings on which reliable conclusions can be drawn.

Consideration was given to particular problems that need to be addressed, how the evaluation findings will be used to improve the formulation and/or application of the training modules, the period and outputs to be reviewed, methods of collecting data and analytical tools.

Basic to any INSTRAW training programme, was to establish indicators which are analytical tools and which enable the goal and objective of an activity to be represented in a form that can be measurable against its actual outcome. To assess the effectiveness of training, indicators are used to determine the quality of contents of the training modules. Using the form of scalar rating (Likert Scale) by end users (participants), INSTRAW training seminars evaluated the timeliness and utility of the modules, their objectivity, comprehensiveness, text and audio-visual materials, and their responsiveness to the needs of the intended recipients.

The crucial task in evaluation methodology was to choose one of the three main techniques for collecting data, which vary in terms of costs, practicality, advantages and drawbacks. The Institute designed a questionnaire, based on the survey approach and aggregated analysis, which is addressed to all participants. This method is considered more practical and less costly than interviews or desk-review techniques.

On the basis of the data collected by applying Likert Scale evaluation methodology in training seminars, INSTRAW assessed the extent to which the training modules were able to meet its objectives, and more importantly, what was their impact on the training of participants. Conclusions concerning the relevance, effectiveness and impact of training modules were derived from the analysis of data in the questionnaire. Applying Likert Scale methodology (1 to 4), modules were evaluated on a daily basis as well as at the end of the seminar so as to secure an overall, final evaluation.

As an example, in the five African countries, the training seminars comprised 34 or 35 participants. In applying the evaluation methodology to those seminars, the Institute obtained the highest scores, i.e. 98 out of 100, and reached the conclusion that the multi-media training packages on women, water supply and sanitation were applicable and useful in East Africa. The objectives of the training modules and seminars were fully reached, the training methodology and content was highly accepted and the audio-visual aids meet their objective as a supplementary training aid. The suggestion of participants for expanding the modules were fully taken into account during the process of up-dating the modules.

Apart from evaluating INSTRAW training modules, evaluation was considered as a special topic at the training seminars. In Ethiopia (Addis Ababa, 23-28 November 1987), the participants in the seminar indicated parameters "that would recognize and integrate women's concern and enhance women's involvement" in the evaluation of water supply and sanitation projects. It was agreed that the evaluation should specifically focus on identifying concerns of women related to the installation of water supply and sanitation facilities. It was recommended "that the evaluation should highlight those areas where no attempt was made to focus on women as users and decision makers" vis-à-vis the utilization of water supply and sanitation facilities, and "that the evaluation team should include women members", who should be trained in evaluation techniques as well.

In Kenya (Nairobi, 9-13 November 1987), the participants established criteria for evaluation of water supply and sanitation projects on a long-term basis. They concluded that "all projects should have built-in continuous evaluation methods and procedures". They also recommended that there should be deliberate action to involve actively "women in evaluation of water supply and sanitation projects at all stages of the project cycle"; this would enhance and ensure the effectiveness of the project.

In Somalia (Mogadiscio, 13-18 February 1988), the participants discussed the evaluation process and presented four case studies. "It was agreed that the evaluation should be part of the total programming process". It was pointed out that women must be taken into account in the following stages of the project development and evaluation process: situation analysis, acceptability of facilities to women, resource distribution, monitoring and evaluation measuring the specific impact on women, involvement of the community, especially women and effects of the programme on women.

In the Sudan (Kadugli, 16-21 January 1988), the participants discussed evaluation of water supply and sanitation projects, with particular emphasis on evaluating the role of women in the functioning and utilization of water supply and sanitation facilities. They also elaborated other issues, for example, how to evaluate the impact of water supply and sanitation projects, on women and how to evaluate the impact of women's participation in water supply and sanitation projects. Generally, it was recommended that the evaluation should reflect "women's involvement as a positive contribution in all aspects of the project"; this should include the impact of the project on women and on whether or not they play an active role in its design, and the formulation and execution of any evaluation process.

In the regional training seminar held in Thailand (Bangkok, 23-27 January 1989), the participants discussed two major issues: the role of women in functioning of water supply and sanitation projects-how can this be evaluated?; The impact of water supply and sanitation projects on women-how can this be evaluated? It was pointed out that the degree of women's involvement in WSS projects should be evaluated in three stages: operation, performance and impact, as well the need to compare the functioning and utilization of a project with and without women's involvement. It was generally recommended that when evaluating the impact of WSS projects on women two main areas should be underlined, namely impact (health improvement, social improvement, economic improvement) and evaluation - interviewing women with checklist and visual inspection on water-borne and sanitation - related diseases; number of undernourished children in the family, income indicators, etc.

From the evaluation questionnaires filled in by more than 350 participants it became evident that it is crucial for monitoring and evaluation to follow an integrated community - based approach since most projects/programmes on women, water supply and sanitation are participatory and should be adapted to the needs and culture of the given community without basing sight of the changes to be introduced. The relevance of developing close interaction with mainstream organizations and the institutions of a given community so as to increase community commitment to the projects should be further strengthened.

As well, the community-based approach require continuous monitoring as an in-built element of the programme/project, and monitoring should start from the basis of needs assessment which should include identification of the extent to which the community-based approach should not only evaluate the outcome of the project/programme but provide information on the programme/project impact.

III. Concluding Remarks

It is obvious that a number of different evaluation guidelines, procedures, techniques have been developed within and outside the United Nations System. The question is how many of them considered WID dimension when designing evaluation forms and evaluating projects? Rather few. The Nairobi Forward-looking Strategies for the Advancement of Women and the various resolutions of the General Assembly stressed the necessity to expand evaluation and monitoring methodology for programmes and projects on women, water supply and sanitation.

The following recommendations might be considered by this working group as innovative tools and methodologies for evaluation and monitoring procedures in water supply and sanitation projects and programmes:

Data bases

Most data bases on WID are not user-friendly enough to be easily utilized by planners and programmers and the existing country profiles, at macro and national level, have limited usefulness for programme/project design. It is recommended that:

- United Nations organizations promote the production of disaggregated data at the country level, through institutional development support;
- The bases for general backstopping for women, water supply and sanitation programmes be prepared on a user-friendly basis;
- An inventory of existing country profiles that have data on women, water supply and sanitation or are WID-specific be developed and made available to international and national users;

Cost-effectiveness of data collection

Considering the funding constraints to, particularly, impact evaluation, the achievement of greater cost-effectiveness beginning with data collection is considered important. To this end it is recommended:

- The use of national consultants, local experts and project participants themselves, as data collection agents;
- Greater exchange of data among organizations in the United Nations system, bilateral technical co-operation agencies; and institutions involved in water supply and sanitation programmes and projects at national level;
- Constant updating of available data.

Purposes of evaluation

Given the importance attached to advocacy and awareness raising and the innovative nature of most WID projects and project components, the evaluation exercises should:

- Continue to be viewed as one means to raising awareness of the importance of including women's participation and needs in mainstream water supply and sanitation programmes/projects.

- In developing evaluation research strategies, the influence of factors such as culture, gender, age, ethnicity and class in shaping programme/project implementation effects and impact be taken fully into account;
- Evaluation should be done by both internal and external evaluation teams throughout the project cycle, that is, design, monitoring of implementation and final evaluation.

Feedback and follow-up

In view of the observation that the relevance of evaluation for the improvement of water supply and sanitation programmes and projects and for further refinement of evaluation methods was often lost because of inadequate follow-up to and analysis of evaluation exercise, it is recommended that:

- In order to assure follow-up evaluation, donor and executing agencies be required to include in the evaluation report a plan of action for implementation of all the recommendations made, which should include the identification of local agencies and capacities;
- Current evaluation exercises be analysed and evaluated selectively with the purpose of drawing lessons for the improvement of existing and development of new evaluation frameworks.

UTILISATION DES OUTILS D'EVALUATION ET DE SUIVI
DU PROJET D'HYDRAULIQUE VILLAGEOISE AU TOGO

BRANK
MISE EN OUVREMENT
FONCTIONNEMENT
D'UN PROJET

CUSO, JUIN 1990

SOMMAIRE DU PROJET

Historique

EN 1979, le gouvernement canadien s'est engagé à supporter le programme togolais visant à fournir de l'eau potable à toute sa population d'ici 1990. Suite aux études de faisabilité, l'agence canadienne de développement international (ACDI) signe un accord avec CUSO comme maître-d'oeuvre, pour la réalisation d'un projet d'hydraulique villageoise dans la Région Maritime. La finalité du projet est d'améliorer le niveau de vie et de bien-être de quelques 65,000 bénéficiaires des préfectures du Zio et du Yoto par l'adoption de pratiques améliorées d'assainissement et d'accès à l'eau potable.

Le projet a comporté deux phases, une première phase de réalisation et une deuxième phase de consolidation. Cette dernière étape servira à poursuivre le processus d'auto-développement auprès des populations rurales participantes. Durant cette période, le projet a encadré 270 villages, soit une population de 154,566 habitants qui bénéficient de 354 points d'eau.

Les réalisations

Les réalisations du projet peuvent être regroupées sous trois rubriques, l'organisation communautaire des villages, les réalisations techniques et les campagnes d'éducation à la santé portant essentiellement sur les thèmes de l'eau potable, l'assainissement, et l'immunisation.

L'organisation des villages a consisté à mettre en place :

- . Des comités villageois de développement avec ouverture de caisses villageoises (compte bancaire)
- . Des micro-projets lucratifs pour l'alimentation des caisses villageoises
- . Un volet femmes et développement visant à encourager l'apport des femmes dans le processus d'auto-développement du village et à améliorer leur autonomie.
- . Des centres d'alphabétisation pour faciliter l'implication des villageois et principalement des villageoises dans des fonctions décisionnelles.

Les réalisations techniques ont consisté à :

- . Exécuter des nouveaux forages munies de pompes manuelles et à réhabiliter des pompes défectueuses de projets précédents.
- . Mettre en place un système d'entretien des pompes à trois palliers tel que conçu par l'UNICEF.
- . Construire environ 600 latrines concessionnelles et familiales.

Le volet sur l'éducation pour le maintien de l'eau potable , de l'assainissement , et de la santé inclut les activités suivantes:

- . Des campagnes d'éducation pour le maintien de la potabilité de l'eau, de l'assainissement du milieu, de la lutte contre le vers de Guinée et de la lutte contre les gîtes larvaires (Paludisme) .
- . Une campagne d'immunisation pour enrayer les six principales maladies mortelles infantiles par la vaccination.

Dans cet exposé , nous examinerons les divers outils de suivi et d'évaluation mis en place par le projet. La démarche proposée est de faire une description de l'outil et de son application , l'analyse des forces et faiblesses de celui-ci et les améliorations à y apporter .

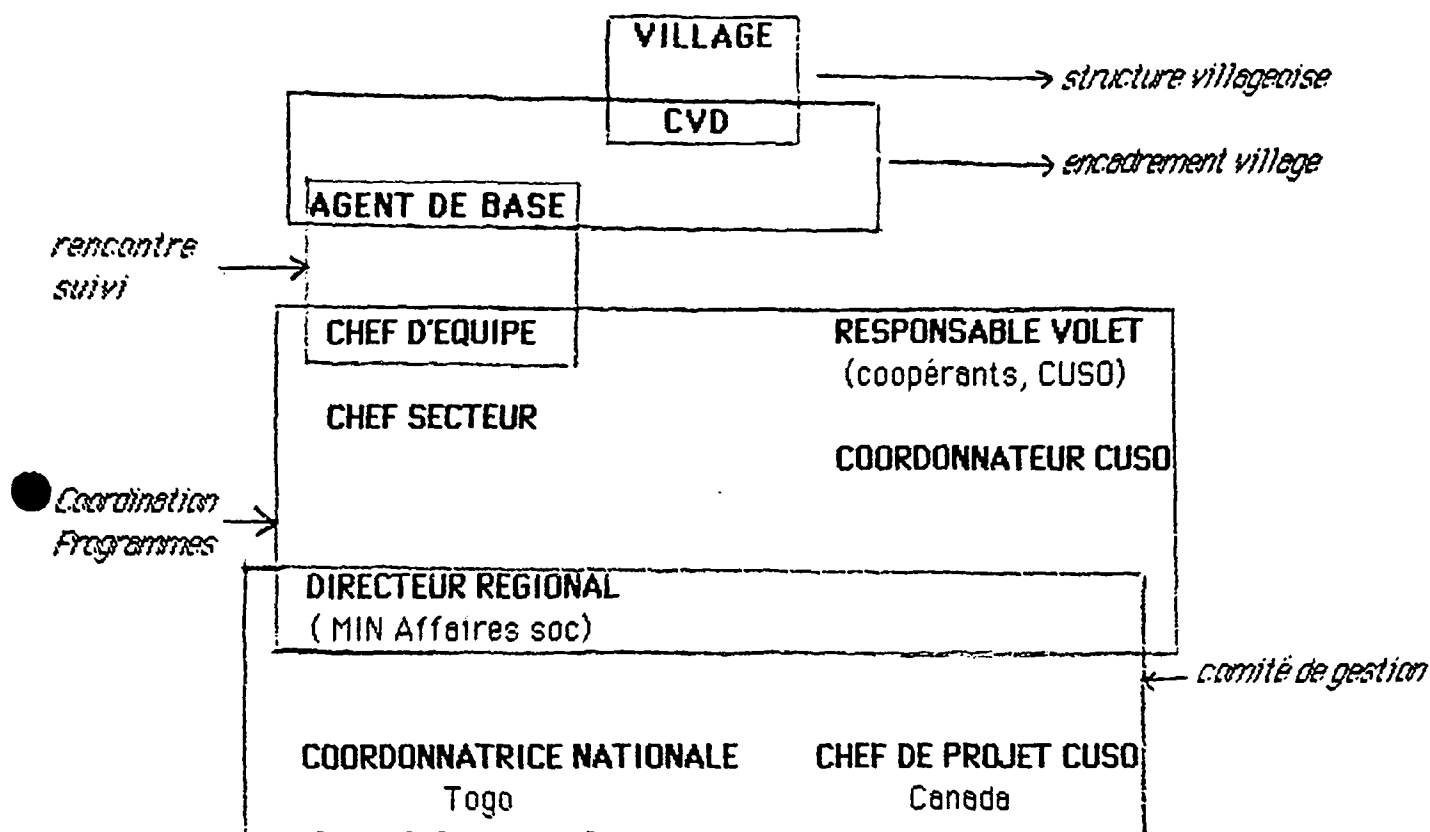
STRUCTURE DU PROJET

Afin de mieux comprendre les mécanismes de suivi et d'évaluation du projet dans son ensemble , il est important de se pencher sur la structure d'encadrement terrain, et sur le mode de circulation des informations qui en découle.¹

Dans le tableau 1, nous comptons 270 villages réparties en six zones géographiques et organisés en autant de " *comité villageois de développement* ". A la tête de chaque zone , se retrouve un *chef d'équipe* que encadre de six à huit *agents de base* . Ces derniers ont la responsabilité d'animer de six à neuf comités villageois de développement. Les deux préfectures de la zone d'intervention du projet ont à leur tête chacun, un *chef secteur* qui agit comme encadreur des chefs d'équipe .

¹. VOIR TABLEAU NO 1

TABLEAU 1



Ces chefs secteurs répondent au directeur régional des Affaires sociales et de la condition féminine de la région maritime. Du côté CUSO, nous retrouvons primo, des coopérants responsables de divers volets d'interventions, encadrés par un coordonnateur terrain lequel répond au chef de projet. Au sein de cette structure, l'information circule de la façon suivante:

Des *villages au CVD*, au cours de rencontres hebdomadaires

Des *CVD aux agents de base* au cours de visites hebdomadaires que ces derniers effectuent au village.

Des *AB aux chefs d'équipes*, lors des rencontres hebdomadaires d'évaluation et de suivi.

Des *chefs d'équipe, à la structure de coordination* (chefs secteurs, coordonnateur, coopérants, directeur régional Affaires sociales) lors de la réunion mensuelle de coordination.

De la *structure de coordination à la direction du projet* lors de la réunion mensuelle du comité de gestion. Cette structure facilite le suivi et l'évaluation permanente des activités par la circulation des informations entre les divers intervenants du projet, qu'ils soient bénéficiaires, encadreurs, chefs d'équipe ou directeurs.

LES OUTILS D'EVALUATION ET DE SUIVI

Parmi les principaux outils utilisées par les intervenants du projet, nous retrouvons certains mécanismes de suivi tel que rencontres entre encadreurs et bénéficiaires, entre encadreurs et gestionnaires, des systèmes de collectes de données permanentes, des enquêtes-terrain pré et post actions, rapports aux deux partenaires bilatéraux et les recherches appliquées .

Les mécanismes de suivi

Le principale mécanisme de suivi s'effectue à travers la structure de fonctionnement décrite ci-dessus. Ce mécanisme a ses avantages et ses désavantages .

L'intérêt de ce modèle est :

- . de faciliter la transmission fonctionnelle des informations.
- . de faciliter l'identification des besoins de la base d'une façon continue.
- . de construire des programmes et des formations en étroite corrélation avec les besoins.
- . d'offrir la flexibilité nécessaire pour réajuster périodiquement les stratégies et les interventions à la lumière des expériences acquises dans l'action sur le terrain .
- . de permettre une interaction constante entre les différents intervenants projet et nationaux.

Les limites de ce modèle sont:

- . une structure bicéphale créant des distortions dans les prises de décision, le contrôle et le suivi des interventions et dans la transmission des informations. Par exemple , nous ne pouvons déterminer si un agent de base national est redevable à un responsable de volet provenant de la structure projet (coopérants) .
- . une déperdition du contenu des informations due à multiplicité et à la nature des intervenants . (agents de base , chefs d'équipe , chefs secteurs, coopérants , etc.)
- . des agents possédant une formation initiale et des expériences

différentes, sont affectés aux mêmes tâches et dans tous les volets, ce qui a pour conséquence, de réduire la qualité professionnelle des interventions. Il serait préférable que des agents soient affectés à des volets spécifiques suivant leur spécialisation. On aurait donc ainsi, d'une part des agents polyvalents responsables des CVD, (animation, organisation des villages) et d'autre part des agents spécialisés dans tel ou tel volet (santé, hygiène, agriculture, alphabétisation, femmes et développement).

Les enquêtes et recensements terrain

Avant les forages

Afin de choisir les deux cents villages devant être bénéficiaires de nouveaux forages et les villages devant bénéficier d'une remise en état d'une pompe existante, le projet a effectué un ensemble d'enquête terrain. Ces enquêtes ont fournies les informations pertinentes sur la situation socio-économique, la situation socio-sanitaire et les données techniques d'un ensemble de 521 villages. Ces enquêtes nous ont fournies les informations sur les besoins en eau (accessibilité en quantité et en qualité de l'eau), sur les distances d'approvisionnement, le nombre d'habitants par villages, l'évaluation des maladies liées à l'eau et la morbidité. Nous avons aussi récolté des données sur l'organisation sociale des villages, la distance du marché, les cultures, l'élevage, les autres productions ainsi que la condition des voies d'accès et le potentiel de mobilisation des villageois. Elles ont aussi fournies des données techniques, tel que l'étude des sols et le potentiel de forages positifs, les possibilités de captages alternatifs en cas de forages négatifs et enfin les usages domestiques possibles, agricoles ou autres. L'intérêt de cette approche a été d'effectuer un choix de villages sur des données objectives afin de limiter les pressions extérieures de tout ordre. Elle a permis aussi de mieux cerner les populations les plus nécessiteuses. Toutefois, la finalité de l'enquête étant le choix des villages d'intervention du projet, les données recueillies dépassaient largement le besoin. Par contre, de telles données devraient être répertoriées de façon systématique dans une deuxième étape, lorsque que le choix des villages est complété.

Après les forages

Suite aux installations des pompes dans les villages., nous avons procédé à une enquête environnementale pour inventorier la plupart des éléments qui contribue à la contamination de l'environnement en général et du sol et de l'eau en particulier. L'outil utilisé dans une première étape a été une série de trois rencontres entre encadreurs, agents de base et villageois afin d'identifier les causes majeures de pollution du village.

Comme les villageois ont identifiés eux-mêmes le facteur principal de pollution, ils ont par la suite recherché et retenu des stratégies à adopter pour enrayer ce problème.

A différents stades du projet, des recensements relatifs à l'état de santé des villageois ont été effectués et nous ont permis d'une part de faire le portrait santé du village à ce moment et de déterminer la nature et l'ampleur de l'action et des programmes à entreprendre. D'autre part, en fin de campagne, ces recensements nous ont permis de mesurer l'ampleur de l'effet des actions entreprises et de pouvoir réajuster nos stratégies d'intervention. Nous avons complété un recensement des cas de vers de guinée, des cas de paludisme et l'observation de l'état de l'eau stockée pour les besoins domestiques. Nous avons aussi fait des études de concentration de cyclopes dans les eaux de consommation.

La construction des latrines a aussi fait l'objet de cinq campagnes, chacune étant pilote par rapport à la suivante. En effet, au niveau technique des évaluations ont permis de modifier les designs pour les rendre plus appropriés aux besoins et conditions du village.

Suite à la construction d'environ 500 latrines familiales et concessionnelles, une double enquête exhaustive au plan technique et socio-sanitaire a permis de constater que l'entretien et l'utilisation des latrines n'étaient pas compris par les utilisateurs et de souligner que des modifications techniques étaient encore nécessaires. Ces enquêtes nous ont permis de poser un temps d'arrêt et de repenser notre approche à savoir d'intégrer à la construction même des latrines une éducation sanitaire relative à l'utilisation et à l'entretien. Donc cette nouvelle approche a fait l'objet d'une campagne pilote de construction et d'éducation intégré dans 6 villages pour un total de cinquante-six latrines.

Quelques constats relatifs aux enquêtes socio-sanitaires

Les outils d'enquête ont été construits par les responsables de volet non spécialisés dans le domaine de l'élaboration de questionnaires, ce qui a limité la capacité d'interprétation des données recueillies. Au niveau de la collecte de données, le nombre important de villages à enquêter a entraîné une surcharge de travail pour agents de base et a certainement entraîné une réduction de la fiabilité des données recueillies. De plus, l'absence d'un système de collecte et de traitement uniformisé de données a certes favorisé la créativité de chacun, mais a limité la capacité de constituer une banque de données complète et accessible. La circulation des informations entre intervenants internes au projet, et la diffusion des données aux autres partenaires (ONG, chercheurs, etc) en a sûrement été affecté. Par contre, l'intérêt de cet outil a été de faciliter le choix des actions à entreprendre dans les divers volets. Par exemple, la campagne

contre le vers de guinée et des cas de paludisme a permis de déterminer des villages-cibles où nous avons concentré nos efforts d'éducation et de mobilisation. L'enquête sur les latrines a permis une amélioration constante des designs de latrines et aussi une mise sur pied d'un système d'éducation relatif à leur utilisation et à leur entretien.

Etude socio-économique auprès des femmes de villages.

Cette étude commandée par le projet à des enquêteurs extérieurs, a été à la base du volet *femmes et développement*. Les objectifs de l'étude étaient de déterminer le degré d'utilisation de l'eau des forages par les femmes, de déterminer s'il y a lieu le temps libre disponible des femmes après l'approvisionnement en eau, et enfin de recueillir les besoins et les activités prioritaires des femmes. 1225 femmes, réparties dans 222 villages constituaient l'échantillon de l'enquête.

Celle-ci a été faite à partir de deux fiches distinctes, la première relative à l'estimation de la population totale et féminine, au nombre de forages fonctionnels et non-fonctionnels, à la réglementation de l'usage de l'eau, aux sources d'eau disponibles dans le village, à leur nature et à leur degré d'éloignement. La seconde fournit des informations relatives au degré d'utilisation de l'eau du forage, aux activités et besoins des femmes et au temps consacré à la recherche de l'eau.

Les données recueillies ont confirmé que la femme consacre trois fois moins de temps à la corvée de l'eau depuis l'installation des forages. Ceci lui permet de consacrer davantage de temps aux activités domestiques et économiques et pour près de la moitié, de jouir de temps libre. Aussi, il semble qu'une bonne partie des femmes dispose suffisamment de temps pour des activités productives (agriculture, maraîchage, commerce, élevage, transformation alimentaire). De plus, des réalisations, permettant de résoudre des besoins prioritaires d'éducation et de santé ont été initiées. Les résultats nous ont permis d'orienter nos actions vers le secteur économique dans un premier temps, à savoir l'augmentation de l'autonomie financière des femmes.

Evaluation de la couverture vaccinale

Enfin dans le domaine de l'immunisation, le projet a commandé à des professionnels externes, des évaluations pré- et post campagnes pour déterminer la couverture vaccinale de la population-cible. La méthode utilisée par les évaluateurs a été la méthode proposée par l'OMS.

Les rapports d'activités aux partenaires bilatéraux

Ces rapports comprenaient des rapports trimestriels des activités et des programmes en cours, de l'évolution des dépenses ainsi que des rapports du bureau d'étude et de la firme forage, et des rapports-synthèse de fin de phase. L'ensemble de ces rapports ont permis de faire une synthèse permanente du projet et de servir de référence aux diverses évaluations et revues du projet faits par les partenaires.

Evaluations et revision de projet

Il y a eu deux évaluations et une revision par les partenaires bilatéraux :

- . Une courte évaluation par le ministère de tutelle du projet, à six mois de la fin de la première phase du projet.
- . Une évaluation complète par les deux partenaires (Canada-Togo) à la fin de la phase 1, d'une durée de trente deux mois.
- . Une revision approfondie de l'ensemble du projet au milieu de la seconde phase.

Ces évaluations sont des outils indispensables pour identifier les divers points de vue de l'agence d'exécution, des bénéficiaires du projet et des bailleurs de fonds et par la suite apporter les correctifs nécessaires. Ces évaluations ont l'avantage d'apporter une interprétation nouvelle quant à la gestion et à la programmation du projet, puisque faite par des agents externes au projet. Toutefois, celles-ci peuvent provoquer l'effet contraire, soit d'éloigner les partenaires ou de renforcer les incompréhensions si elles ne tiennent pas compte suffisamment du contexte développemental dans lequel se réalise les projets.

Les Recherches appliquées

Le projet d'hydraulique villageoise, a aussi bénéficié d'un outil inestimable de rétro-action, soit une collaboration avec les milieux universitaires de recherches appliquées. Cinq recherches ont été entreprises en utilisant le projet comme milieu d'observation.

L'Université du Bénin à Lomé a entrepris une recherche de l'effet de l'eau potable sur de la dracunculose. (Vers de guinée).

. Cette même université a entreprise conjointement avec l'université du Québec à Hull au Canada, une recherche sur l'approche de développement

communautaire utilisée par le projet.

. L'Université Carleton (Ottawa, Canada) a entrepris une recherche sur l'approvisionnement en eau potable sur les femmes bénéficiaires.

. L'Université du Québec à Montréal, réalise une recherche sur l'impact du projet sur l'environnement.

. Le Centre Inter-africain d'étude en hydraulique, réalise une étude sociologique sur la capacité de prise en charge des points d'eau par les villages participants.

Ces recherches nous permettent de bénéficier de points de vue différents. Les constats dégagés par de telles études empiriques contribuent à une réflexion stratégique sur les programmes et interventions futures. En résumé, nous estimons que le projet est un lieu d'apprentissage et que la recherche appliquée a été un outil de réflexion privilégié et d'échange de connaissances. Toutefois nous devons tenir compte que de telles recherches imposent des contraintes additionnelles non-prévues sur l'infrastructure du projet et les populations participantes. L'analyse des données recueillies ne peut pas souvent être utilisable à court-terme, et il est souvent facile de sous-estimer les bénéfices par rapport à l'investissement en temps et en énergie.

CONCLUSION

Au cours de la première phase, le projet a réussi à se maintenir largement au rythme des capacités villageoises. Les outils de suivi ont été utilisés entre autres pour respecter le rythme et la capacité des communautés de réaliser les activités prévues. Citons comme exemple, le réarrangement du calendrier des forages en fonction du degré de préparation des villages le lancement des micro-projets lucratifs selon la volonté des villages d'y participer, et le report de toute autre activité pour lesquels les villages n'étaient pas encore mobilisés (ex: éducation pour la santé, construction de latrines, activités lucratives).

Toutefois, malgré un processus imposant de collectes de données au début du projet pour identifier les besoins des villages participants, les mécanismes d'évaluation et de suivi mis en place dans la deuxième phase, répondaient davantage à des préoccupations reliés à la gestion des intrants et des extrants prévues du contrat avec les bailleurs de fonds qu'au cheminement des villages. Aussi, ces mécanismes répondaient davantage au modèle conceptuel de développement intégré que le projet voulait mettre en place au cours de cette phase de consolidation qu'au suivi du processus de développement des villages. En conséquence, les outils de

contrôle et de suivi, à l'exception des enquêtes préliminaires, ont été développés et ont servi davantage au cours de cette phase à produire les informations nécessaires aux évaluations externes. Dans la deuxième moitié du projet, nous avons mis en place un ensemble de programmes permettant de justifier nos objectifs de contrat et notre modèle conceptuel de développement intégré incluant les secteurs santé, hygiène, productivité villageoise, alphabétisation, assainissement, femmes et développement. Nous avons donc mis en place un ensemble de campagnes d'informations sur la santé, la potabilité de l'eau, l'utilisation sanitaire de villages et autres sujets plutôt que d'accompagner les villageois dans leur réalisations et leur préoccupations. Il en résulte donc une approche de transmission d'information, des coopérants vers les agents de base, des agents de bases vers les CVD, et enfin des CVD vers les villageois. Les agents de base qui étaient vu davantage comme des animateurs des communautés villageoises au début du projet, sont devenus progressivement des exécutants dont la tâche principale était de transmettre des informations. Nous constatons aujourd'hui, que cette transmission d'information n'est pas garante de la compréhension du message et moins encore de la capacité des villageois d'interpréter cette information et de la transformer en changement de comportements. L'approche projet, crée aussi une autre distorsion importante, soit de circonscrire dans un temps prédéfini (soit trois ans, soit 5 ans) l'atteinte des objectifs. Aucun village n'a le même rythme et le travail d'animation doit répondre davantage à des considérations issues des priorités et du calendrier fixé par le village qu'à un modèle "par campagne".

En définitive, le projet d'hydraulique villageoise a été un milieu fertile et créatif, dans lequel nous croyons avoir amorcé un processus significatif de prise en charge dans les villages, malgré les faiblesses au niveau du suivi. Nous devons dans le futur développer des outils efficaces pour être de plus en plus capable de nous adapter au rythme d'apprentissage et aux priorités des villages.

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**ON MONITORING AND EVALUATION OF WATER AND SANITATION
PROJECTS**

by Erik Nordberg

This brief paper is based on a report "Environmental hygiene in SIDA-supported programmes in Africa. Review and recommendations" by myself and Uno Winblad, dated February 1990 and prepared on request from SIDA as a basis for a revised SIDA strategy in the area of environmental hygiene. As regards monitoring and evaluation of water supply and sanitation programmes we emphasize the following problems.

- Most project documents are far too vague and imprecise with regard to project objectives and targets; this complicates all kinds of evaluation, including monitoring and assessment of end of project accomplishments.
- Project-related expenditure is not usually presented in a way that allows comparison with project outputs, and this makes it difficult to assess effectiveness.
- Water supply and sanitation projects are associated with multiple benefits, health benefits being one category among several. A fair evaluation of benefits in relation to resource inputs must, therefore, consider several - if not all - benefits; this problem is usually side-stepped or neglected.
- Resources available at target households, such as average household income in the specific target group, are not usually properly presented, and this makes it difficult to judge the relevance and affordability of the programme in relation to its own objectives.
- Impact evaluation, assessing project or programme impact on health among intended beneficiaries, is a methodologically complex exercise, requiring considerable resources and expertise. Only rarely, therefore, should such evaluations be attempted, and, if so, methods should be carefully described as well as the resources allocated for this purpose.

- Health benefits of water supply and sanitation projects are likely to appear only very slowly, mainly because a number of interdependent changes must all occur before the full health impact is accomplished - and possible to demonstrate. Health impact evaluations should therefore be attempted only after a project has been under implementation for a considerable time, usually several years; meanwhile, monitoring of the implementation process is more useful.
- Reviews of the intended beneficiaries, usually representatives of the local communities concerned, are not properly consulted as a part of the monitoring and evaluation process.
- The rate of unsubsidized replication of installations in the project area and in the surrounding areas is an important indicator but too often neglected in monitoring and evaluation of environmental health projects.

Solutions to some of these problems are indicated in the above mentioned report. I would like to add a few comments.

Pre-implementation appraisals of project documents should preferably be done by people with practical experience from project implementation as they are best suited to identify project formulation weaknesses, for instance those of importance for the monitoring of the project. Affordability and sustainability of the recommended technologies in relation to the stated target groups are then more likely to get proper attention. This will also ascertain the realism of the implementation time plan.

In most projects, priority should be given to fairly simple but careful monitoring of progress in relation to the stated objectives and targets in the implementation plan, and the methods for doing this should be clearly formulated in project documents. Any baseline studies should generate data for this specific purpose. The temptation to try to conduct prospective studies of health conditions at the start of the project and after a few years of project implementation should be resisted in almost all cases. Still, whenever impact studies are conducted it is necessary to consult experts on methods and also, later on, to publish the results widely.

9. MONITORING AND EVALUATION

There are several different kinds of evaluations having different objectives. Examples are pre-project appraisals, regular reviews of the implementation process (through written reports or site visits with or without external expertise), mid-term evaluations to guide the planning of the rest of the project period, end-of-project evaluations which again could be restricted to critical review of project implementation against stated objectives (targets) or, alternatively, include assessment of impact, possibly also costs. Different degrees of beneficiary participation and external expert involvement are possible.

Our impression is that too many project documents fail to state clear objectives and targets and that this makes subsequent evaluations difficult and unhelpful. There is a lot of superficial, uncritical and unsystematic project monitoring while methodologically satisfactory end-of-project evaluations are few. It is also becoming increasingly clear that proper assessment of water and sanitation projects impact on health is a methodologically difficult exercise with research-like components, requiring well-trained staff and plenty of time; few projects can accommodate such evaluations, which may, therefore, be more effectively conducted as separate research projects with their own budget. A couple of recent publications on the subject are mentioned in chapter 3 above. This may also help overcome a natural reluctance of those deeply involved in project planning and management, both among donors and recipients, to have poor project design or managerial mistakes scrutinized and exposed. There is considerable room for improvement of SIDA as a "learning institution."

We advocate increased attention to project documents as regards formulation of objectives/targets and as regards monitoring and evaluation procedures. More standardized methods need to be developed for each type of evaluation, for instance concerning beneficiary involvement and use of external experts. There is also a need for simple standardized procedures based on field testing. Important problems tend to escape attention unless monitoring is systematic and professionally done. Who benefits? Are target groups reached? How are the selected technologies applied? Are inputs balanced against each other? What are the views of beneficiaries and non-beneficiaries in project areas? How are resources utilized? A check-list of questions to be raised during project monitoring would probably be helpful in structuring the information collected and in standardizing the methods.

The "Minimum Evaluation Procedure for water supply and sanitation projects" (WHO 1983) has been proposed by WHO to assess function, utilization and impact of facilities. Its methods need to be further refined.

We are of the opinion that impact evaluation of environmental hygiene projects is a difficult exercise requiring considerable planning and resources if it is to be done well; only a few carefully selected projects should be subject to such evaluations. At the same time monitoring and process evaluations may be considerably improved at modest cost, and standard procedures should be developed by SIDA to be applied to its own projects in the future.

OBJECTIVES - ORIENTED MONITORING AND EVALUATION

by Clifford Wang, NORCONSULT A.S.

Paper presented at UNDP/PROWESS Workshop on Monitoring & Evaluation,
WHO, Geneva, 25-29 June 1990

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1. Introduction

"... there is usually no clear understanding of the (monitoring and evaluation (M&E)) information needs of different groups. ... Users frequently complain that M&E reports are too long, come too late, do not focus on the key issues, or do not provide the required kinds of data."

- From "Monitoring and Evaluating Development Projects, The South Asian Experience", The World Bank, EDI Seminar Series, 1989.

A common problem? Representatives from Bangladesh, India, Pakistan, Nepal, Sri Lanka, Myanmar and China attending a seminar on monitoring and evaluation (M&E) in Lahore in April 1987 seemed to think so when discussing effective use of M&E. They identified other problems too:

- a. Most M&E agencies do not clearly identify the stakeholders to be served by M&E studies. This can have consequences later on in that "each stakeholder tends to have different interests and priorities with respect to the kinds of studies that should be conducted and how the data should be used".
- b. Many people simply assume that M&E consultants and experts are responsible for defining what information is required.
- c. Many evaluators come from academic rather than managerial backgrounds, and often have difficulties understanding management information needs.
- d. Project managers frequently see M&E studies as potential threats.

Though the above relates to development projects in general, all problems are probably equally relevant to water/sanitation sector projects.

In this paper, I would like to propose that objectives-oriented planning methods that expand on logical framework techniques can contribute to more effective use of M&E by mitigating the above-stated problems.

2. Logical Frameworks

Most of you are quite familiar with logical frameworks, or log frame matrices. A typical example of a log frame is shown in Figure 1.

Overall Goal 1	Indicators 5	Key Assumptions 9
Project Purpose 2	Indicators 6	Key Assumptions 10
Results/Outputs 3	Indicators 7	Key Assumptions 11
Activities 4	Inputs 8	Key Assumptions 12

Figure 1. Typical Log Frame.

A completed log frame represents a one-page summary of the project, showing objectives, expected outputs, activities, inputs, indicators and key assumptions:

- WHY (in what context) the project is being carried out. Square 1
- WHAT the purpose of the project is. Square 2
- WHAT results the project expects to achieve. Square 3
- HOW the project will achieve these results. Square 4
- WHICH external factors are crucial for project success. Squares 9-12
- HOW project success will be measured and WHERE required data needed for measuring will be found. Squares 5-7
- WHAT the project will cost. Square 8

Log frames have been used, with varying degrees of success, by many external support agencies (ESAs) as tools for development assistance planning and evaluation. On the other hand, their use by recipient and local executing agencies in developing countries has been rather limited to my knowledge, and then usually in response to policy guidelines or project document formats stipulated by ESAs.

How are log frames filled in in practice? Maybe all too often:

- i) By one person or by very small teams of the ESA's own project officers or short-term consultants hired by the ESA. (This phenomenon is probably particularly true early on in the project cycle, i.e. during identification, appraisal and preparation.)
- ii) With time a constraint, meaning that efforts are primarily concentrated on Squares 3, 4 and especially 8. Squares 1 and 2, being "obvious" (e.g. Overall Goal = Better health for all, and Project Pur-

pose = Sustainable water supply and sanitation systems), are quickly filled in, and other squares receive only limited attention.

Some logical, structured thinking is much better than none. But it seems likely that potential benefits to be gained by using log frame methods properly are lost when i) and ii) occur. The setting of too high goals and resultant gaps in logic are almost certain to occur. And little has been done to alleviate such problems affecting overall effectiveness of M&E mentioned in the Introduction of this paper.

What to do then? I would suggest that the objectives-oriented planning method developed by the Germans, known by the acronym ZOPP (Zielorientierte Projektplanung), and currently applied in preparation and implementation phases of GTZ-supported development projects offers one possible direction for future water/sanitation sector M&E activities. Flexible use of ZOPP techniques can produce better project and M&E programme designs that are more appropriate to the situation-in-the-field than has been the case in the past.

3. Objectives-Oriented Planning (ZOPP)

What is ZOPP? To my mind, Logical Framework improved, plus made participatory. With ZOPP, systematic, vertically-linked thinking is still the order of the day, but with opportunities for lateral thinking using structured brainstorming and visualization techniques built in. ZOPP "opens up" Logical Framework with the addition of several new features intended to:

- * encourage a participatory team approach
- * improve communication and cooperation between ESAs, implementing agencies, project staff and other project stakeholders
- * generate consensus of opinions through joint participation.

One important advantage of ZOPP is the possibility to bring target group characteristics, interests, potentials and deficiencies into planning discussions at the earliest-possible stage. Another is the clear specification of indicators of project success and how monitoring will be conducted at project outset. Both these advantages make ZOPP a tool especially appropriate for planning community-based projects.

The main steps of the ZOPP method are shown in Figure 2 (next page). As can be seen, work on the log frame follows four initial analytical steps:

- a. Participation Analysis: To identify project stakeholders and analyze characteristics and interests of those most significant.
- b. Problem Analysis: To identify major problems, select a central problem, and establish cause-effect relationships in the form of a "problem tree".
- c. Objectives Analysis: To identify project alternatives by examining means-ends relationships representing end-of-project conditions.
- d. Alternatives Analysis: To assess potential alternatives, then select the project strategy(ies) to be implemented.

The level of detail to which each of the four analyses should be carried out varies with situation. Sometimes cursory treatment is sufficient; other times much more thorough handling is required.

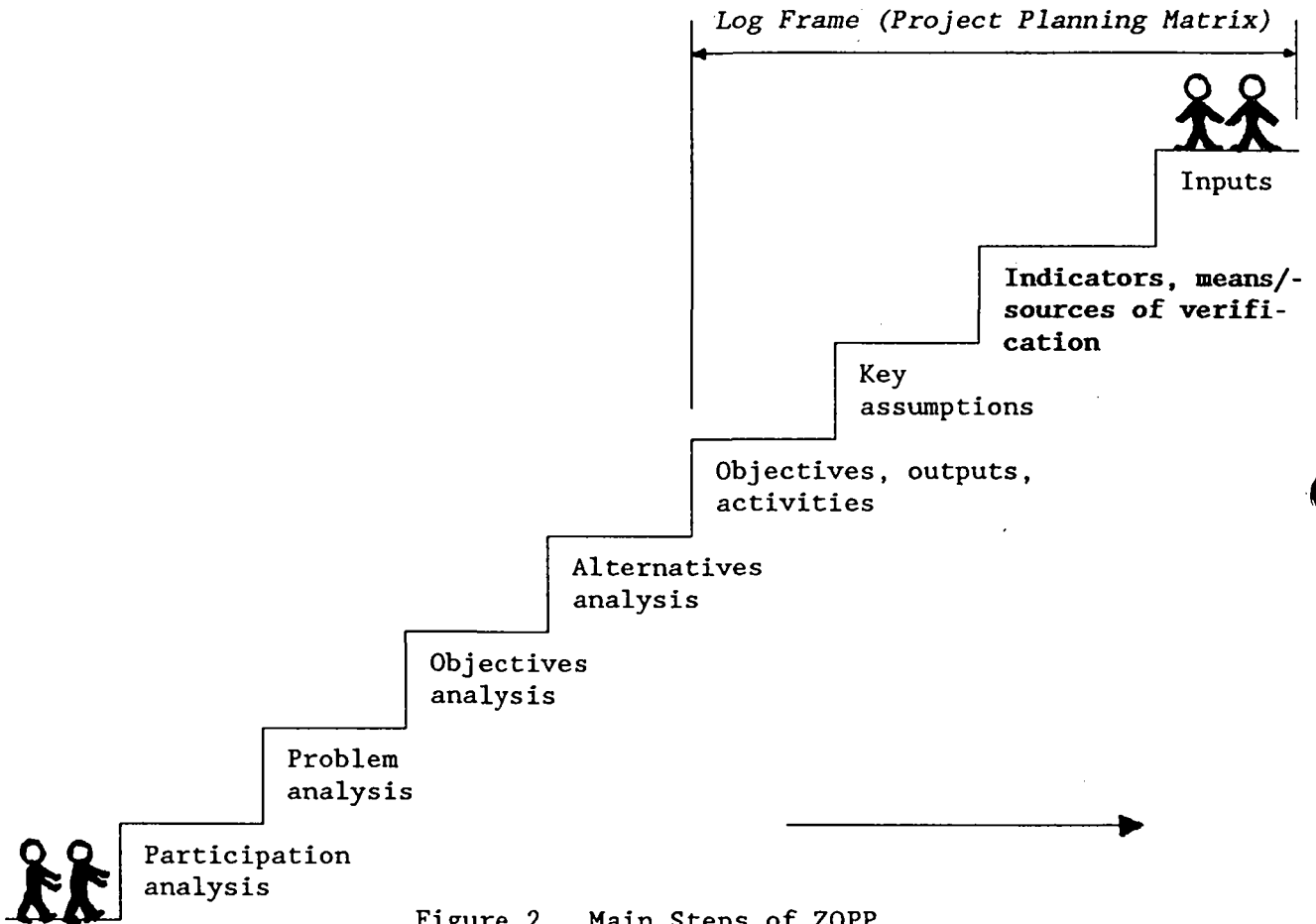


Figure 2. Main Steps of ZOPP.

4. M&E Implications

With respect to M&E, there are several potential advantages of ZOPP that I think deserve mention. These are A) greater potential to focus on the Community's interests, B) greater potential for multidisciplinary planning teams, C) greater potential to get good indicators, and D) M&E based on what project designers are willing to call success. Each point is briefly commented on below:

A. Greater Potential for Focus on the Community's Interests

The ZOPP method begins with the participation analysis. In this step, potential parties directly involved or affected by the project are identified, and there is discussion on whose interests and views should be given priority in further steps of the planning process. An important part of this analysis involves taking a detailed look at a few selected groups -- main problems they face, their needs and interests, strengths and weaknesses, and possible conflicts and linkages with other groups. Identifying implications and "hints for action" for project planning is also done.

The participation analysis is especially useful for community-based projects; it promotes openness and willingness among project designers to con-

sider situations, perspectives and viewpoints of different groups at the beginning of the planning process. Within the structure of the participation analysis and using visualization techniques, it becomes relatively easy to focus on target group needs in a constructive, non-threatening manner. That this occurs produces greater likelihood, for example, that relevant social-cultural issues, administrative constraints and training requirements of target groups will be discussed, and that resultant implications for planning will be identified at the earliest possible stage.

B. Greater Potential for Multidisciplinary Planning Teams

ZOPP planning exercises are carried out in workshop settings, which can be especially advantageous for community-oriented projects having significant "software" components. Participants at the workshops can and should be carefully selected to ensure proper balance of technical and non-technical project activities. Potential participants include key project implementors, advisors/experts, and representatives from ESAs, relevant government ministries and departments, cooperating institutions, and positively or negatively affected groups.

Whenever possible, workshops should include target group representatives. This may not always be feasible, however, due to language difficulties, class distinctions or potential counter-productive effects on overall group dynamics. In these situations, "surrogate representatives" of the community -- sociologists, anthropologists, NGO representatives, etc., who are intimately familiar with the project area, target group characteristics and potential implementation difficulties -- are appropriate.

C. Greater Potential to Get Good Indicators

Indicators should be precise, defining in detail the intended contents of project objectives and intended results in terms of target group, desired quantities, expected quality, time period, location, and so on. Their selection is one of the last, and most exact, tasks of the ZOPP process. In reflecting the essential content of an objective, good indicators must be directly relatable to project inputs (i.e. not recording changes possibly brought about by other factors), objectives-oriented, and objectively verifiable.

Once indicators are formulated, sources of information necessary to monitor and evaluate these indicators must be specified, i.e. Where will information be found? In what form? Who will collect information? When?

Virtually all GTZ manuals on ZOPP include the statement, "ZOPP results are as good as the planning team". This is especially true in the case of indicators. Indicators selected for a project can be good or not-so-good, depending on how well the planning team performs this step of the process. In any case, ZOPP methodology makes it impossible to ignore indicators or future M&E requirements during planning, i.e. with reference to Figure 1, who would dare submit a matrix with 25 percent of all squares empty?!

With reference to Figure 2, please note that specification of indicators and means of verification occurs after specification of objectives, outputs, activities and key assumptions, and before project inputs. This order is deliberate. It increases the probabilities that:

- Project objectives and project targets will be realistic.
- Gaps in logic will be reduced or eliminated.
- M&E costs and resource implications will be built into the project.

D. M&E Based on What Project Designers Are Willing to Call Success

In "The Logical Framework, A Manager's Guide to a Scientific Approach to Design and Evaluation" (Practical Concepts Incorporated (PCI), 1979), it is stated:

"The discipline (of using objectives-oriented planning) in the design process facilitates the production of an evaluable design -- objectives are clearly stated, the development hypotheses have been explicitly stated and indicators of success at each level of the project hierarchy have been established. Most importantly, these indicators express what the designers are willing to call success; thus, the evaluation task is simply to collect the data for those key indicators and "evaluate" the project against its own pre-set standards of success."

While M&E results may be intended to serve the needs of many, among those that must be considered most relevant, at least in the short-term, are those of the project manager -- the person in-charge having ultimate responsibility for achieving results. The completed ZOPP matrix is a tool for him/her and his/her project team. It clearly lays out to them as project implementors the targets they are expected to meet, and by which standards and in what time frame their performances will be measured. From both personnel and objectives-oriented management points of view, this can only be positive.

Lastly, the establishment and acceptance of M&E rules for a project in the beginning reduces chances that M&E exercises will later be carried out using indicators and evaluation criteria subsequently defined by persons or groups having their own interests at heart -- regardless of whether these are good or bad! (M&E exercises reflecting the evaluators' or donor agency's well-intentioned desire to "save" a project that is being badly executed and which was poorly planned in the first place can create confusion and be demoralizing to the project team. And to the recipient agency. And, not least importantly, to intended target groups who may suddenly see their created expectations for new facilities dashed.)

5. Concluding Remarks

In this paper, I have suggested that ZOPP techniques can be used with special advantage to design community management-oriented projects, and to plan objectives-oriented M&E activities for measuring project progress and ultimate impact.

Please note, however, that ZOPP does not come for free. It requires firm commitments of time, resources and flexibility by donor and recipient country alike. If these commitments cannot be assured, then ZOPP may not help much. If, on the other hand, they can be, then I would suggest that attainable benefits from its use can include greater potential for project success, more relevant M&E, and more effective use of limited resources over the long-term.

1. HEALTH IMPACTS IN DEVELOPING COUNTRIES: NEW EVIDENCE AND NEW PROSPECTS

By Sandy Cairncross, PhD, MICE (member)*

RECENT HISTORY

Attempts to measure the health impact of water supplies and sanitation have a long and chequered history. Many of them have been made by amateur epidemiologists, at the behest of the agencies financing the construction of the facilities, and with insufficient planning and rigour. Even some of those supervised by eminent specialists have come up with practically useless or meaningless results, after taking years to complete and costing very large sums of money. This unhappy experience led a panel of experts, convened in 1975 by the World Bank, to conclude that the Bank should not undertake any long-term longitudinal studies of the question (World Bank, [1]).

A more sanguine mood prevailed, however, at the international workshop convened in 1983 at Cox's Bazar, Bangladesh, on "Measuring the health impact of water and sanitation programmes". Agencies such as UNICEF, WHO and IDRC supported the meeting, which gave rise to a set of methodological guidelines (Briscoe et al., [2]), and a document (Briscoe et al, [3]) explaining how a new technique, the case-control method, could be used to measure impact on diarrhoeal disease, in less time and at lower cost than with conventional methods.

Since that time, about a dozen studies focussing on diarrhoeal disease have been carried out by reputable research groups, which strove to incorporate in their methodology the lessons learned at Cox's Bazar. The results of most of them are summarised in Table 1. As the Water Decade draws to its close, the time is opportune for a review of the results of this activity, for a synthesis of the lessons to be learned from them so far, and for careful consideration of their implications for future work.

A review of the published and unpublished results of this new generation of health impact studies suggests two important conclusions. First, health impact studies are not an operational tool for project evaluation or "fine tuning" of interventions. Not only are the results unpredictable; they are sometimes so surprising that they offer no firm interpretation. In

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particular, the small, quick studies sometimes advocated as an operational tool are those which offer least information to assist the interpretation of their results; if no health impact is detected by such a study, the design is too basic, and the sample too small, to offer any clue as to why this might be so.

Second, notwithstanding the unpredictability of the results of these studies, taken as a whole they provide firm evidence that water supplies, excreta disposal and hygiene education can have a significant impact on diarrhoeal disease, of roughly the same order as that indicated by Esrey *et al.*, [4]. Indeed, the overall picture suggested by the recent studies is not very different from that offered by the older ones. Most, but not all, suggest that access to water in quantity and improvements in hygiene may have a greater impact on diarrhoea than water quality and excreta disposal.

A MAJOR PROBLEM

However, any conclusion such as this can only be a personal assessment of the literature, because considerable (sometimes insuperable) methodological problems beset anyone seeking to conduct such a study (Blum and Feachem, [5]; Kirkwood and Morrow, [6]) and can cast doubt on the results. One of these problems is confounding at the household level, which deserves more thorough treatment than it has received so far. It arises because it is rarely possible to test the impact of water and sanitation in the way that drugs and other medical interventions are evaluated, by allocation to one group, while another is given a placebo. Quite apart from any ethical misgivings it might arouse, the strategy is not politically feasible in most circumstances.

This means that most studies are essentially observational; the researcher simply observes the health of groups who have and who have not benefitted from water or sanitation facilities and tries to eliminate any bias due to the way they have been allocated. In the case of water supply, the allocation is often made to whole communities at a time - for instance, a whole village when a hand pump is installed - and is dictated by administrative or technical convenience, political patronage or other factors only loosely associated with health. In the case of sanitation, however, and in some cases the use of a protected water source, the allocation depends on a decision taken at the level of the individual household.

Serious problems arise because the households most likely to invest in a latrine, or to prefer a protected source of water are likely to be untypical in other respects. They may be wealthier than average, their members more educated, or simply more aware of the benefits of hygiene. Various studies have shown that this is indeed the case. Now, these other factors - wealth, education and hygiene consciousness - are also associated with a lower incidence of disease. Hence those using water and sanitation facilities will tend to have less disease, whether or not the facilities have any protective effect.

This phenomenon is known as confounding. Statistical techniques exist to control for confounding, but they are only effective if the confounding factor is accurately measured for each household. In practice, wealth is usually assessed from one or more proxy variables, such as possession of a metal roof, watch or bicycle, and education in terms of years of schooling of the adults in the household. Hygiene consciousness, as expressed in hygiene practices, is measured very crudely or not at all.

Esrey and Habicht [7] found, in their very thorough review of the literature, that sanitation seemed to have a greater impact on diarrhoea incidence than water supply improvements; it is quite possible that this apparent finding simply reflects the degree to which studies of the health impact of sanitation have been bedevilled by confounding at the household level, and have only partially succeeded in controlling for it. Many of the studies where water quality improvements seemed to reduce diarrhoea, even when conducted by eminently competent researchers, are also open to suspicion on this count.

TARGETTING FOR HEALTH IMPACT

It is probably not very productive for anyone other than academic researchers to agonise any longer about such methodological problems and whether an impact on diarrhoea exists at all. Some studies have shown very conclusively that it does. Most studies, if less conclusive, tend to support the view that water and sanitation can reduce diarrhoea incidence by about 25% (Esrey et al., [4]).

Moreover, water supplies and sanitation can, in the right conditions, have a powerful impact on other infections. Water supplies can almost completely eliminate Guinea worm (White et al., [8]) and substantially reduce the prevalence of trachoma

(Prost and Négrel, [9]) and schistosomiasis (Unrau, [10]). Excreta disposal is a prime control measure for intestinal parasitic worms. Most studies of the impact of water and sanitation on the parasitic diseases have underestimated its public health importance by focussing on how many people have worms, but if they had looked at how many worms those people have, they would have found a greater public health impact (Feachem et al., [11]).

It is perhaps more constructive to ask under what conditions the greatest benefit to health may be obtained. Some researchers have focussed on whether the groups likely to benefit most are in a particular socio-economic group (Shuval et al., [12]), or have a particular set of infant feeding practices (Butz et al., [13]) or level of education (Esrey and Habicht, [14]). However, the policy implications of such studies are obscure. It would often be administratively impossible, and usually politically unacceptable, to target water and sanitation investments explicitly at such groups.

There is another approach to targetting which is clearly politically equitable, but has largely been neglected in the health impact literature, most of which considers water supply and sanitation as interventions defined by the level of service provided. These interventions can only be fully defined with respect to the conditions prevailing before they were implemented. Piped water in a household which previously used a handpump in the backyard is unlikely to have the same impact as in one which collected its water from a muddy puddle a mile away. Where prior water and sanitation conditions are least hygienic, provision at a given level of service is likely to have the greatest impact. Few would dispute that it is equitable to target such environmental improvements on those whose environmental conditions are worst; for example, those whose water sources are furthest away, or whose environment is most faecally polluted.

Such target groups are also most likely to feel a need for water and sanitation, and therefore most likely to pay for it (Churchill et al., [15]). They are also most likely to respond to them by improvements in their hygiene. While the evidence from health impact studies is hard to interpret in this respect, it is clear that in most of those where a significant health impact was found, the provision of water supply or sanitation had been accompanied by improvements in hygiene.

MEASUREMENT OF HYGIENE

"Hygiene" in this context refers to practices such as the washing of hands, food and utensils, or the disposal of children's stools. It may be promoted by better access to water and sanitation or by hygiene education. Improvements in hygiene may be reflected in increased water consumption. It appears that the most significant impacts on disease incidence stem from the behavioural changes which constitute hygiene improvements, and which interventions in the water sector seek to bring about. If no such change in behaviour results from improved water supply or sanitation then the only health benefits likely to occur are those stemming from improved water quality; in many settings, it seems, these are relatively minor or even negligible.

It follows that, unless we know more about the conditions for these behavioural changes to occur, or the particular changes most likely to reduce the transmission of disease, we do not know much about how or in what circumstances a health benefit can be expected. However (and this is a third conclusion to be drawn from the recent health impact studies), all of them had difficulty in measuring the even quite simple behavioural factors such as household water consumption. In some studies these factors were neglected because of an emphasis on water quality. In others, an effort was made to examine them but the study team lacked the necessary expertise or resources. In several, only a simple questionnaire was used, and the results showed too many discrepancies for detailed analysis to be considered worthwhile.

However, the objective study of human behaviour is clearly not impossible, as a wealth of anthropological literature can testify. The problem is that the necessary techniques are not well known in the water and sanitation sector, and no coherent attempt has been made to adapt them to the sector's needs. A set of guidelines for the study of hygiene practices would serve several valuable purposes.

First, they would provide practical tools for the operational evaluation of water and sanitation projects. A study of behavioural factors can be carried out more quickly, and much more cheaply, than a health impact study, and its results would offer far greater power to diagnose problems in an existing programme. For example, a finding that health impact is small does not indicate how the impact can be increased; on the other hand, a finding that, say, latrines are not widely used will suggest measures to improve the situation. In fact, the

guidelines envisaged would greatly facilitate implementation of the Minimum Evaluation Procedure for Water Supply and Sanitation Projects (WHO, [16]).

Operational tools for the assessment of changes in hygiene practices would be particularly valuable for the evaluation of hygiene education programmes. Little is known about the relative cost-effectiveness of the various possible approaches to hygiene education, and without objective (preferably standardised) methods to measure the impact on behaviour of each approach, our understanding of this subject is unlikely to improve. Finally, methodological guidance on the measurement of intervening factors would be invaluable to researchers planning any future health impact studies. It would help them to design their investigations in such a way as to permit a better examination of the pathways by which, and conditions under which, water and sanitation may influence health. Future interventions can then be designed to maximise their health benefits, although this, it must be stressed, is not a short-term goal.

Acknowledgements

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TABLE I - Summary of recent health impact studies

LOCATION; SECTOR (SOURCE)	TYPE OF STUDY	PROBLEMS	FINDINGS
MIRZAPUR, BANGLADESH; RURAL WS; SANITATION AND HEALTH EDUCATION {17}	Longitudinal, children under 5	o Difficult to distinguish between effects of different interventions.	o Combined package of WSS and health education resulted in significant decrease in diarrhoeas and dysentery; relative proportion of children suffering from diarrhoea at any one time fell by 46 per cent in intervention area. o Closeness to handpump and use of latrine for disposing of children's faeces also significant.
MOHALE'S HOEK, LESOTHO; RURAL SANITATION {18}	Case control, children under 5	o Water use not studied in detail. o Private water source associated with 38 per cent reduction in diarrhoeas, but this may be largely socio-economic effect. o Surprisingly significant improvement in children's height-for-age associated with latrine ownership arouses suspicion that results may be due to latrine owners being unrepresentative of population.	o Latrine ownership appears to be associated with 24 per cent reduction in children's diarrhoeas, but this is not quite statistically significant at 5 per cent level. o Impact of water supply seems likely to be connected with increased use and better hygiene, rather than improvements in water quality. o Preliminary analysis of data showed no apparent difference between VIP, pit and bucket latrines, in respect of health impact.
KURUNEGALA, SRI LANKA; RURAL WS {19}	Case control, children under 5	o Apparent impact varies widely between the 5 hospitals at which cases and controls were recruited, ranging between 90 per cent reduction in diarrhoea incidence and no significant reduction at all.	o No association between childhood diarrhoea and sanitation, access to water or quantity of water used. o Quality of water used has an impact: use of protected sources resulted in about 35 per cent reduction in the risk of diarrhoea on average, even among people claiming to boil their water. Hygienic disposal of children's faeces was also associated with 34 per cent less diarrhoea.
PORTO ALEGRE AND PELOTAS, BRAZIL; URBAN WS {20}	Case control, infant mortality	o Small sample size leads to few statistically significant results after correcting for confounding factors. o No measurement of factors such as water consumption or quality.	o Infants in houses sharing a tap with neighbours are 50 per cent more likely to die of diarrhoea (even after adjusting for confounding factors) than those from houses with in-house piped water (but this result is not statistically significant). o Infants from houses using a public standpipe or well are 4.8 times more likely to die of diarrhoea than those from houses with in-house piped water (significant at the 1% level).
VILLA CARLOS FONSECA, NICARAGUA; RURAL WS {21}	Case control, children under 5	o Relationship between distance to source and water consumption not studied, despite finding that distance linked to diarrhoea incidence.	o Wide variations in level of faecal contamination. o Relationship with proximity to water source (especially during dry season) detected, and just significant.
WEST ZOMBA MALAWI; RURAL WS {22}	Longitudinal, children under 5	o Problems in implementing the intervention to be evaluated.	o Inconclusive
EAST ZOMBA MALAWI; RURAL WS {23}	Case control, children under 5	o Sample too small to provide significant results. o Distance to both improved and traditional water sources almost the same so water consumption (as reported) did not vary much.	o No significant association was found between risk of diarrhoeas and type of water source or presence of latrine.

TABLE I (continued)

<p>CEBU, PHILIPPINES: URBAN WS {24}</p>	<p>Case control, children under 2</p>	<p>o Sample too small to provide significant results. o No direct measurement of water consumption.</p>	<p>o Improved water supply and possession of a latrine might reduce diarrhoea risk by 23 per cent - but this conclusion is not statistically significant due to small sample size (15% probability it arose by chance). o No consistent relationship was found between type or quality of water supply, presence of a latrine, and risk of diarrhoea (note that adjustments were made for effects of boiling and proper storage of water).</p>
<p>IHO STATE, NIGERIA: RURAL WS, SANITATION, HEALTH EDUCATION {25}</p>	<p>Longitudinal study: mainly diarrhoea in children under 6; nutrition in children under 3, and guinea worm for entire population.</p>	<p>o Emergence of a new spring in the control area confounded water source comparisons. o Improved water supply still not very accessible (median distance 500m) o KAP changes also detected in control area, probably due to exposure to project monitoring.</p>	<p>o No consistent reduction in diarrhoea was found, nor any relationship between water source quality and diarrhoea (adults had higher incidence of diarrhoea with improved water quality). o Time spent collecting water was linked to diarrhoea incidence: if the collection time was over 2 hours, children aged between 0-4 are 2.9 times more likely to have diarrhoea in any week (for children aged 5-14, 2.0 times). o Distance to a borehole is also important: children aged 0-4 from houses more than 250m from a borehole were 23% more likely to have diarrhoea (but this is not statistically significant).</p>
<p>LESOTHO: RURAL WS {26,27}</p>	<p>Longitudinal, children under 3</p>	<p>o Detection of impact required comparison of households within the improved villages, contrary to the original intention of conducting a randomised controlled trial.</p>	<p>o Children in villages without improved water supply grew better and did not have more diarrhoea than in those which had one. They did, however, have less <i>Giardia</i> and <i>E. coli</i>. o In the improved villages, growth rates (but also diarrhoea rates) were higher among exclusive users of the improved supplies. o <i>Giardia</i> infection rates were lower and diarrhoea rates among infants higher, among those using more water per capita.</p>
<p>TEKNAF, BANGLADESH, RURAL WS AND HEALTH EDUCATION {28}</p>	<p>Longitudinal, children under 2</p>	<p>o Lack of baseline data prevents distinction between impact of hygiene education and possible difference between areas. o Hygiene observed for only one day, not in peak diarrhoea season.</p>	<p>o Provision of 1 handpump to 4-6 households plus hygiene education associated with 17% less diarrhoea. o Within both intervention and control areas, diarrhoea rates were significantly lower when good hygiene practices were observed: - no faeces in yard - hands washed before serving food - ash/mud used for handwashing after defecation - use of handpump water for washing o These practices were reportedly more than 9% more common (the last two over 27% more common) in the intervention area.</p>
<p>BAKAU, GAMBIA: URBAN WS {29}</p>	<p>Retrospective child mortality under 3</p>	<p>o Probable confounding at household level.</p>	<p>o Risk of death in households using public taps twice as high as for those with yard connection.</p>

CESI
PROFILE

SAMPLE
SECTOR DOSSIER

DRINKING WATER SUPPLY AND SANITATION



Prepared from
data provided
by:
**Instituto
Costarricense de
Acueductos y
Alcantarillados
(AyA)**

In
collaboration
with:

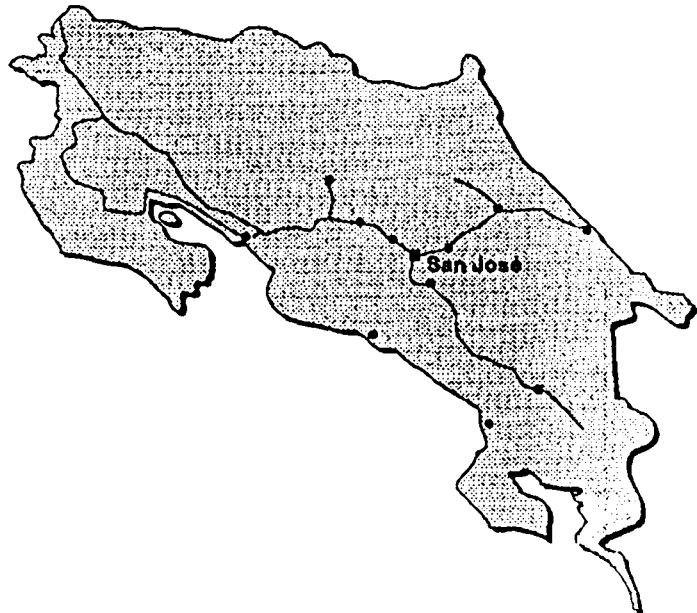
- WHO (Global
Monitoring
System, CESI)
- USAID-WASH

FOR THE
REPUBLIC OF
COSTA RICA

SAMPLE COMPILED BY WHO, JUNE 1990.

PART I:

SUMMARY FACT SHEET



COSTA RICA

Area:	50.700 km ²
Official language:	Spanish
Capital:	San José

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STATISTICS

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SECTOR
OVERVIEW

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STATISTICS

1. *Basic indicators* (1990 statistics unless noted otherwise)

Population:	Total:	2,940 M
	Urban:	1,370 M (46.6 %)
	Rural:	1,570 M (53.4 %)

Population growth rate:	Total:	2.5 %
	Urban:	3.5 %

GNP per capita:	US \$1670
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Adult literacy rate:	Total:	92 %
	Female:	91 %
	Male:	93 %

Life expectancy:	Total:	75 years
	Female:	77
	Male:	73

Child/infant mortality (1987):	per 1000 births	
	under 5 years:	18
	under 1 year:	14

Currency:	Costa Rica Colón(CRC)
	83.45 = 1 US \$ (May 1990)

Inflation rate (%):	28.6
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2. *Sector Statistics*

Water resources:

Population receiving water from surface sources:	Total:	30 %
	Urban:	30 %
	Rural:	00 %

Population receiving water from ground sources:	Total:	70 %
	Urban:	70 %
	Rural:	100 %

Water related diseases:

Incidence of waterborne diseases per 100,000 population:	350
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Water consumption(litres/per capita/day):

Urban:	250
Rural:	200

Figures used in project design (litres/per capita/day):

Urban:	250
Rural:	150

STATISTICS

3. Coverage

Present Coverage (in 1,000 inhabitants)

URBAN	House Connections:	1,300
	Public Standposts:	34
	Sewer Connections:	722
	Latrines:	648
RURAL	Water Supply:	1,320
	Sanitation:	1,460

Estimated Population for 1990 (in millions)

Urban:	1,370
Rural:	1,570

- Present (Targets) Coverage for 1990 (percentage of population)

Urban Water:	100
Rural Water:	84
Urban Sanitation:	100
Rural Sanitation:	93

Estimated Population for 1995 (in millions)

Urban:	1,620
Rural:	1,730

- Estimated (Targets) Coverage for 1995 (percentage of population)

Urban Water:	100
Rural Water:	88
Urban Sanitation:	100
Rural Sanitation:	95

Estimated Population for 2000 (in millions)

Urban:	1,980
Rural:	1,910

- Estimated (Targets) Coverage for 2000 (percentage of population)

Urban Water:	100
Rural Water:	95
Urban Sanitation:	100
Rural Sanitation:	98

4. National Agencies

Key agencies concerned with sector:

MDS	Ministerio de Salud
MPNPE	Ministerio de Planificación Nacional y Política Económica
IFAM	Instituto de Fomento y Asesoría Municipal
M	Municipalidades
BCMh	Banco Central y Ministerio de Hacienda
MVAU	Ministerio de Vivienda y Asentamientos Urbanos
INVU	Instituto Nacional de Vivienda y Urbanismo
SNASRA	Servicio Nacional de Aguas Subterráneas; Riego y Avenamiento
SNE	Servicio Nacional de Electricidad
AyA	Instituto Costarricense de Acueductos y Alcantarillados, MDS

STATISTICS

5. *Sector Financing*

Construction costs per capita (in US \$):

URBAN	House connections: average	177	
	Public standposts: average	68	
	Sewer connections: average	54	
	Latrines: average	14	
RURAL	Water supply: average	45	
	Sanitation: average	26	

Water tariffs (in US \$/m³):

Average urban tariff:	0.20
Urban production costs:	0.19
Average rural tariff:	0.10
Rural production costs:	0.08

National plan duration: 4 years

Current plan ends in year: 1990

Total investment budget for plan period (in million US \$): 993
of which external funds: 230

Total sector investment for plan period (in million US \$): 120
of which external funds: 75

Total investment for community water supply and sanitation as percentage of total investment during plan period: 12.1 %

Estimated Cost (1981-1990) of Attaining Targets (in million US \$):

Urban Water:	42.07
Urban Sanitation:	43.35
Rural Water:	20.07
Rural Sanitation:	6.65

Funding shortfall as of April 1990 (in million US \$)

Urban water:	35.38
Urban sanitation:	35.10

SECTOR OVERVIEW

Background

Costa Rica has the highest life expectancy rate, the greatest GNP per capita, and the lowest infant and child mortality rates in Central America. Investment in public health is a priority for the Government of Costa Rica (GOCR), and high levels of health service coverage are maintained in rural and urban parts of the country. As a result of these policies and investments, infant and child mortality rates have dropped, and sizeable reductions have been achieved in the incidence of preventable diseases, such as acute diarrhea. Despite this progress, however, nearly one in six rural Costa Ricans lacks access to potable water, and, in the poorest areas of the country mortality rates are twice the national average.

Sector Administration

Water supply and Sanitation development has been limited by the low capacity of institutions to absorb and handle funds. Municipalities in particular do not have adequate administrative systems. There is a need for greater planning coordination among the agencies dealing with water supply and sanitation. The country also needs a continuous and systematic data collection, analysis and retrieval programme to give a firm basis for sector planning. There is no water quality control and surveillance by the Ministry of Health and no control of systems under municipal administration. Three local institutions work in the water and sanitation sector: *Instituto Costarricense de Acueductos y Alcantarillados (AyA)* is Costa Rica's national water and sewerage agency and has the authority to determine policies in water and sanitation, *Instituto de Fomento y Asesoría Municipal (IFAM)* and the *Ministerio de Salud*, through its Department of Wells and Sanitation, are also active in the sector.

Investment - Current projects

External assistance to Costa Rica in the supply of water and sanitation services is limited: USAID/Costa Rica has a project in operation through mid-1990. The IDB has one loan programme totaling \$28.3 million, while a major project for San José, carried out under a World Bank loan, ended this year with a follow-on loan programme yet to be negotiated. Other external support agencies working in the country include UNICEF, WHO/PAHO and KfW. (See project summary listing)

Current coverage

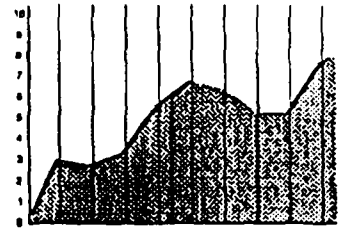
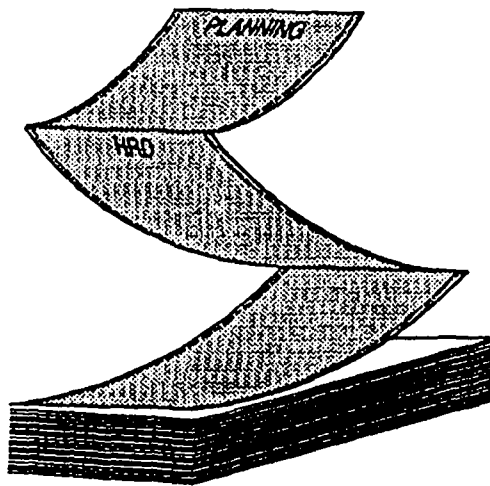
Costa Rica has the highest level of water supply and sanitation in Central America. It has maintained full (100 percent) coverage in urban water and in 1989 attained full urban sanitation coverage. In the rural areas, an increase in rural water coverage of 1 percentage point (to 84 percent of the population) has been achieved; rural sanitation coverage remains at 93 percent.

SECTOR OVERVIEW

Meeting the 1995 Urban Water and Sanitation Targets

Although Costa Rica attained full coverage in urban water and sanitation in 1989, significant levels of funding will be necessary to sustain those levels over the next six years. Over this period of time, an additional 305,000 people are estimated to require these services, and the cost to meet this growth is projected at approximately \$ 85 million: \$42 million to fund water system construction and expansion and \$ 43 million for additional sanitation facilities and sewerage expansion. The 1995 targets aim at providing an additional 542,000 people with access to safe water supply and an additional 525,000 people with access to sanitation facilities. Of the \$42 million needed to maintain full urban water coverage, \$4 million is currently committed to this effort, leaving a deficit of \$ 38 million. Committed investments to sustain full urban sanitation coverage total \$ 7 million, leaving a shortfall of \$ 36 million. These calculations are based on the assumption that the projected increases in the size of the urban population of Costa Rica over the next six years will have to be met with added coverage for each additional urban resident.

PART II: PLANNING DATA



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PROJECT
SUMMARIES
•
SECTOR
ANALYSIS
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PROJECT SUMMARIES

1. PLANNING

NATIONAL AGENCY	STATUS	TYPE	SUPPORT AGENCY	TITLE	ID N°
AyA	Ongoing	Study	InterAm. Dev. Bank	Estudios de Preinversión - IV Etapa	COS/89/002
AyA	"	"	World Bank	Agua Potable, II Etapa (Agua Urbano)	COS/88/001
IFAM	Requested	"	Government request	Ampliación y Mejoramiento de los Servicios de Aseo Urbano	COS/86/017
AyA	Compl.	Plan	World Bank	Agua Potable, I Etapa	COS/82/001

2. INSTITUTION DEVELOPMENT & TRAINING

NATIONAL AGENCY	STATUS	TYPE	SUPPORT AGENCY	TITLE	ID N°
AyA/DDF	Proposed	Institution Dev.	Government request/PAHO	Programa de Optimización de Sistema	COS/86/007
AyA/DDF	"	HRD	"	Racionalización de Cuadrillas en el Area Metropolitana y Divisiones Regionales	COS/86/010
AyA/DDF	"	Institution Dev.	"	Cooperación Técnica para el Desarrollo Institucional del Instituto Costarricense de Acueductos y Alcantarillados	COS/86/012
CAPRE/Comité	"	Training	"	Centro Regional de Capacitación (Instituciones de Centro America, Panamá y Rep. Dominicana)	COS/86/013
AyA	"	"	"	Proyecto de Capacitación Administrativa	COS/86/014
Min.Salud/DRP	"	"	"	Atención primaria para Zonas Deprimidas	COS/86/018
AyA/Min Salud	Completed	"	PAHO	Saneamiento Ambiental	COS/86/023
AyA/Min Salud	"	"	"	Saneamiento Ambiental	COS/84/003

PROJECT SUMMARIES

3. RESEARCH

NATIONAL AGENCY	STATUS	TYPE	SUPPORT AGENCY	TITLE	ID N°
AyA	Requested	Study	Sweden/SIDA Government request	Water Supply and Environmental Health in Central America (see also AM/89/2)	COS/89/001
AyA	"	Research	Government request/PAHO	Control de la Contaminación de Cuerpos de Agua	COS/86/019

4. HYGENE EDUCATION

NATIONAL AGENCY	STATUS	TYPE	SUPPORT AGENCY	TITLE	ID N°
AyA	requested	Training	Sweden/SIDA	Water Supply and Environmental Health	COS/89/001

5. COMMUNITY PARTICIPATION

NATIONAL AGENCY	STATUS	TYPE	SUPPORT AGENCY	TITLE	ID N°

PROJECTS ON DATE: 28 JUN 1990

***** W.H.O. / E.H.E. / C.W.S. 1211 GENEVA 27 *****

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C.E.S.I. COUNTRY EXTERNAL SUPPORT INFORMATION

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TYPE OF REPORT: 6 Number of projects: 57

COUNTRY REPORT: COSTA RICA

COUNTRY = COSTA RICA (COS)

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C.E.S.I.

ID. NO: ESTADO INFORMACAO SETORIAL

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'MEETINGS COS 86 21 INFORM.

A Decade Consultative Meeting was held in October 1986 in Guatemala for six Central American States including Costa Rica. Organized by WHO/PAHO and supported by GTZ the meeting served the presentation of the countries' strategies and priority projects to the external support community. Full report is available from WHO/EHE/CWS, Geneva.

'NAC COS 85 12 INFORM.

National Action Committee.
No hay descripción.

'PLANS COS 85 11 INFORM.

National Plan for Potable Water Supply prepared by Aya 1982.
A National Health Plan prepared by MH 1981-1986.
No hay descripción.

'PLANS COS 85 16 INFORM.

The National Development Plan which is continuous, is revised every four years by presidential mandate. A national plan for drinking water and sanitation was drawn up in Aug. 1980. The national Health Plan is prepared for 6-year intervals (1981-87) by the Ministry of Health.

'PRIORITIES COS 85 18 INFORM.

Orosi Project US\$ 55 million; pipelines, storage and network for the Metropolitan System US\$ 14.91 million; Areas near the Metropolitan Area US\$ 3.68 million; Emergency plans US\$ 2.77 million; Expansion & Rehabilitation of Water Supply Systems in Urban Cities & Rural Communities, and Sewerage in Puntarenas US\$ 43.40 million; Water Supply Systems US\$ 25.00 million; IFAM-AID programme US\$ 6.00 million.

'TARGETS COS 85 14 INFORM.

Drinking Water Urban 1985: 100%; 1990: 100%
Drinking Water Rural 1985: 85%; 1990: 90%
Sanitation Urban 1985: 98%; 1990: 100%
Sanitation Rural 1985: 75%; 1990: 80%

+STATUS COS 83 1 INFORM.

Service levels-1983 (% of population connected or access to services).
Drinking water: Urban 98.0%; Rural 82.3%.
Sanitation: Urban sanitary sewerage 47.2%; Septic tanks and latrines 50.8%; total 98.0%.
Sanitation: Rural septic tanks and latrines 73.8%.
Total sanitary sewerage 28.3%. Total septic tanks and latrines 60.0%.

COUNTRY = COSTA RICA (COS)

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C.E.S.I.

ID. NO: ESTADO INFORMACAO SETORIAL
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.RESULTS COS 85 10 INFORM.
Results for the Period 1981-1985 in Term of Additional Coverage.
No hay descripción.

.AGENCIES COS 85 20 INFORM.
Ministry of Economic Policy & National Planning (MIDEPLAN) responsible for national planning; Ministry of Health (MS) responsible for monitoring public health; Costa Rican Institute for Water Supply & Sewerage Systems (AYA), national agency responsible for problems related to drinking water supply & the collection & disposal of excretae.
Heredia Public Service Company handles drinking water supply in Heredia Municipalities & Committees for Community Development: many municipalities & community committees administer their own water systems. (Continued - see COS/85/021.)

.AGENCIES COS 85 21 INFORM.
(Continued - see COS/85/020.)
General Office for Family Allocations, which is a public agency that finances programs for rural water supply systems. National Electricity Service (SNE) which is responsible for approving service rates.

.BUDGET COS 85 4 INFORM.
The 1982-85 investment programme includes priority projects in all the areas of the country. Use has been made of external funds from the IBRD and CDC, which accounts for 73% of the contribution (US\$39.8 million). The estimated investments for the Decade are US\$216.96 million and are considered to be acceptable approximate estimates.
Estimated Investment in the Sector:
Urban Drinking Water and Sanitary Sewage 1981-85: US\$54.8 mio, 1986-90: US\$123.76 mio.
Rural Drinking Water 1981-85: US\$11.4 mio, 1986-90: US\$27.0 mio

.CENTERS COS 85 13 INFORM.
Collaboration Centers in the Sector in Costa Rica.
No hay descripción.

.CONTACTS COS 85 17 INFORM.
UNDP RR Apartado postal 4549 San José; WHO Representante OPS/OMS Apartado 3745 San José; UNICEF Representative; Aya Apartado 5120 San José, telex 2427 AYA; Instituto de Fomento y Asesoría Municipal (IFAM) Apartado 10-187 San José; Oficina de Planificación Nacional y Política Económica (OFIPLAN) C14 Aus 3&5 Edif Alfa, San José, telex 2962; Servicio Nacional de Electricidad (SNE) Apartado 936, San José; Ministerio de Salud Pública, San José; Servicio Nacional de Aguas Subterráneas.

COUNTRY = COSTA RICA (COS)

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C.E.S.I.

ID. NO: ESTADO INFORMACAO SETORIAL

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.INDICES COS 85 7 INFORM.

Gross Domestic Product (GDP): Growth in 1978-82 Period 0-12%
National income for period: US\$ 14.33 billion. At current
prices (1985) 1982 per capita. GDP was US\$ 968.00. Inflation
in 1982 was estimated at 90.1%.

.INDICES COS 85 8 INFORM.

Economy: Sectoral contributions to GDP in 1982.
Agriculture 24.7%. Industry 20.3%. Trade 19.5%
Transportation 5-7%, plus others; Unemployment rate
1982 8.7%; AYA investment in the public sector was
0.80% for 78-82 period totalling US\$ 32.4 million.

.INDICES COS 85 9 INFORM.

Education: illiteracy rate based on 1973 census was 10%
Water Born Diseases: responsible for 0.12% of infant morta-
lity (1985 estimate).
Life Expectancy: for 1985 this was estimated at 73 years.
Infant Mortality: in 1982 this was estimated at 18.8 cases
per 1000 births.

.INDICES COS 85 22 INFORM.

Demography 1982: Urban 1.442.269, Rural 961.512;
1986: Urban 1.526.018, Rural 1.017.346;
1990: Estimated Urban 1.681.129, Rural 1.120.753;
Growth Index Equal to 2.2.

.ISSUES COS 85 3 INFORM.

Development in the Sector has been limited owing to low ca-
pacity of its institutions or entities to absorb & handle
funds especially municipalities that do not have adequate
administrative systems. There is a need for greater combina-
tion in planning among the various agencies with sectorial
interest. Need for continuous, systematic data collection
analysis & retrieval program to permit firm basis for order-
ly sector planning. Information regarding existing systems is
inadequate. There is no water quality control & surveillance
by MH & no control of systems under municipal administration

.REFERENCES COS 85 5 INFORM.

Reliable information available on: Demography; National
Statistics Bureau and Censuses, Ministry of Economy.;
Socioeconomic indicators: Central Bank of Costa Rica; Sector
description; Legal framework, urban drinking water; Sanita-
tion information acceptable for urban, barely for rural
areas (continued - see COS/85/006).

COUNTRY = COSTA RICA (COS)

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C.E.S.I.

ID. NO: ESTADO INFORMACAO SETORIAL

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.REFERENCES COS 85 6 INFORM.

(Continued - see COS/85/005.)

Reliable information available in following areas: Demography provided by National Statistics Bureau and Censuses of Ministry of Economy, Industry and Trade; Socioeconomic indicators from Central Bank of Costa Rica; description of sector reliable information exists on the legal framework & on urban drinking water, information available on sanitation is acceptable for urban areas but not for rural areas.

.TARIFFS COS 85 19 INFORM.

AYA has established a pricing policy with the objective of financial autonomy of the Institution and equitable distribution of costs among different types of users. However the rates are not able to support the imminent burden of depreciation and debt servicing and an acceptable rate of return on investments in order to finance development in the sector between 1985-1990.

.TRAINING COS 85 15 INFORM.

Health education: Health education programmes have been set up under AyA and the Ministry of Health.
No hay descripción.

COUNTRY = COSTA RICA (COS)

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AGENCIA EXT		C.E.S.I.		TITULO Y DESCRIPCION DEL PROYECTO				COMP. EXT.
/GOBIERNO	NO. ID:	ESTADO	PROPU	ACRDO	FECHA INICIO	FECHA TERMI	x 1000 US\$	

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:GOVREQUEST COS 86 1 PROPUESTO OCT86 9750.0

III Etapa Acueducto Metropolitano Programa Tanques y Redes.
Construcción del almacenamiento necesario y mejoramiento y
ampliación de las redes de distribución del Area Metro-
politana, a la capacidad necesaria para su integración al
proyecto Orosi. Duración estimada del proyecto: 3 años.
Propuesta elaborada con la colaboración WHO/PAHO.

APORTES NACIONALES:

EQUIVALENTE EN \$ EEUU (x1000): 5250.0

COSTO TOTAL DEL PROYECTO:

EQUIVALENTE EN \$ EEUU (x1000): 15000.0

ORGANISMO NACIONAL ENCARGADO DE LA EJECUCION:

AyA (Instituto Costarricense de Acueductos y Alcan-
tarillado), DDF (Dirección de Desarrollo Físico), San José.

:GOVREQUEST COS 86 2 PROPUESTO OCT86 2500.0

III Etapa del Acueducto Metropolitano Programa Zonas
Aledanas.

Construcción y rehabilitación de ocho sistemas de agua pota-
ble, en localidades aledanas al Area Metropolitana, con el
propósito de dotar a su población de un buen servicio de
agua en cantidad, calidad y continuidad y lograr una mayor
cobertura. Duración estimada del proyecto: 3 años.
Propuesta elaborada con la colaboración WHO/PAHO.

APORTES NACIONALES:

EQUIVALENTE EN \$ EEUU (x1000): 1300.0

COSTO TOTAL DEL PROYECTO:

EQUIVALENTE EN \$ EEUU (x1000): 3800.0

ORGANISMO NACIONAL ENCARGADO DE LA EJECUCION:

AyA (Instituto Costarricense de Acueductos y Alcan-
tarillado), DDF (Dirección de Desarrollo Físico), San José.

:GOVREQUEST COS 86 3 PROPUESTO OCT86 9950.0

Programa de Construcción y Rehabilitación de Acueductos en
Localidades Rurales.

Construcción y rehabilitación de aproximadamente 373 acue-
ductos rurales en todo el país, con el propósito de garanti-
zar la potabilidad, cantidad y continuidad del servicio de
agua que recibirán alrededor de 195.159 habitantes del área
rural. Duración estimada del proyecto: 3 años.

Propuesta elaborada con la colaboración WHO/PAHO.

NUMERO DE PERSONAS ATENDIDAS:

195159

APORTES NACIONALES:

EQUIVALENTE EN \$ EEUU (x1000): 5300.0

COSTO TOTAL DEL PROYECTO:

EQUIVALENTE EN \$ EEUU (x1000): 15250.0

ORGANISMO NACIONAL ENCARGADO DE LA EJECUCION:

AyA (Instituto Costarricense de Acueductos y Alcan-
tarillado), DDF (Dirección de Desarrollo Físico), San José.

COUNTRY = COSTA RICA (COS)

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TITULO Y DESCRIPCION DEL PROYECTO							
AGENCIA EXT	C.E.S.I.	FECHA	FECHA	FECHA	FECHA	COMP. EXT.	
/GOBIERNO	NO. ID:	ESTADO	PROPU	ACRDO	INCIO	TERMI	x 1000 US\$

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:GOVREQUEST COS 86 4 PROPUESTO OCT86 29250.0

Tercera Etapa Alcantarillado Sanitario Ciudades Intermedias: Cartago, Paraíso, Tres Ríos, Palmares, Ciudad Quesada, Tilarán, San Isidro, Ciudad Neilly, Paso Canoas, Quespos y Bagaces. Construcción de sistemas de alcantarillado sanitario para 18 ciudades del área urbana; recolección, tratamiento y disposición de las aguas servidas.

Propuesta elaborada con la colaboración WHO/PAHO.

APORTES NACIONALES:

EQUIVALENTE EN \$ EEUU (x1000): 15750.0

COSTO TOTAL DEL PROYECTO:

EQUIVALENTE EN \$ EEUU (x1000): 45000.0

ORGANISMO NACIONAL ENCARGADO DE LA EJECUCION:

AyA (Instituto Costarricense de Acueductos y Alcantarillado), DDF (Dirección de Desarrollo Físico), San José.

:GOVREQUEST COS 86 5 PROPUESTO OCT86 2660.0

Necesidad de Medidores y Cajas de Protección.

Instalación de 85.000 hidrómetros y 59.000 cajas de protección en todos los sistemas administrados por AyA, con el propósito de racionalizar el consumo y evitar el desperdicio. Duración estimada del proyecto: 1 año.

Propuesta elaborada con la colaboración WHO/PAHO.

NUMERO DE PERSONAS ATENDIDAS:

354000

APORTES NACIONALES:

EQUIVALENTE EN \$ EEUU (x1000): 1140.0

COSTO TOTAL DEL PROYECTO:

EQUIVALENTE EN \$ EEUU (x1000): 3800.0

ORGANISMO NACIONAL ENCARGADO DE LA EJECUCION:

AyA (Instituto Costarricense de Acueductos y Alcantarillado), DDF (Dirección de Desarrollo Físico), San José.

:GOVREQUEST COS 86 6 PROPUESTO OCT86 1300.0

Mejoras a Sistemas en Operación.

Proyecto de obras múltiples para la rehabilitación de sistemas administrados por AyA, incluyendo proyectos menores de mejoras inmediatas y prioritarias a los sistemas de abastecimiento de agua potable y alcantarillado sanitario. Duración estimada del proyecto: 1 año.

Propuesta elaborada con la colaboración WHO/PAHO.

APORTES NACIONALES:

EQUIVALENTE EN \$ EEUU (x1000): 700.0

COSTO TOTAL DEL PROYECTO:

EQUIVALENTE EN \$ EEUU (x1000): 2000.0

ORGANISMO NACIONAL ENCARGADO DE LA EJECUCION:

AyA (Instituto Costarricense de Acueductos y Alcantarillado), DDF (Dirección de Desarrollo Físico), San José.

COUNTRY = COSTA RICA (COS)

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		TITULO Y DESCRIPCION DEL PROYECTO					
AGENCIA EXT	C.E.S.I.	FECHA	FECHA	FECHA	FECHA	COMP. EXT.	
/GOBIERNO	NO. ID:	ESTADO	PROPU	ACRDO	INCI	TERMI	x 1000 US\$

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:GOVREQUEST COS 86 7 PROPUESTO OCT86 200.0

Programa de Optimización de Sistemas.
Proyecto de inversión para la adquisición de equipo para la realización continua de estudios de actualización permanente de los sistemas administrados por los gobiernos locales (municipalidades) para el manejo eficiente de los sistemas de agua potable. Duración estimada del proyecto: 4 años.

Propuesta elaborada con la colaboración WHO/PAHO.

APORTES NACIONALES:

EQUIVALENTE EN \$ EEUU (x1000): 800.0

COSTO TOTAL DEL PROYECTO:

EQUIVALENTE EN \$ EEUU (x1000): 1000.0

ORGANISMO NACIONAL ENCARGADO DE LA EJECUCION:

AyA (Instituto Costarricense de Acueductos y Alcantarillado), DDF (Dirección de Desarrollo Físico), San José.

:GOVREQUEST COS 86 8 PROPUESTO OCT86 630.0

Plan Maestro para el Abastecimiento de Agua Potable del Area Metropolitana de San José (IV Etapa).

Proyecto de preinversión para definir los lineamientos necesarios para el desarrollo físico y administrativo del acueducto metropolitano. La III Etapa comprende el Proyecto Orosí, Programa de Emergencia, Programa de Zonas Aledanas y Programa de Tanques y Redes. Duración estimada del proyecto: 18 meses. Propuesta elaborada con la colaboración WHO/PAHO.

APORTES NACIONALES:

EQUIVALENTE EN \$ EEUU (x1000): 70.0

COSTO TOTAL DEL PROYECTO:

EQUIVALENTE EN \$ EEUU (x1000): 700.0

ORGANISMO NACIONAL ENCARGADO DE LA EJECUCION:

AyA (Instituto Costarricense de Acueductos y Alcantarillado), DDF (Dirección de Desarrollo Físico), San José.

:GOVREQUEST COS 86 9 PROPUESTO OCT86 315.0

Desarrollo e Implantación de los Sistemas de Plantamiento para el Area Urbana (SIPAAU), el Area Rural (SIPAR), para el Banco de Datos de Recursos Hídricos y Calidad del Agua.

Establecimiento de un banco de datos como instrumento de planificación y de inventario de recursos hídricos, etc. Duración estimada del proyecto: 1 año.

Propuesta elaborada con la colaboración WHO/PAHO.

APORTES NACIONALES:

EQUIVALENTE EN \$ EEUU (x1000): 35.0

COSTO TOTAL DEL PROYECTO:

EQUIVALENTE EN \$ EEUU (x1000): 350.0

ORGANISMO NACIONAL ENCARGADO DE LA EJECUCION:

AyA (Instituto Costarricense de Acueductos y Alcantarillado), DDF (Dirección de Desarrollo Físico), San José.

COUNTRY = COSTA RICA (COS)

=====		TITULO Y DESCRIPCION DEL PROYECTO					
AGENCIA EXT	C.E.S.I.	FECHA	FECHA	FECHA	FECHA	COMP. EXT.	
/GOBIERNO	NO. ID: ESTADO	PROPU	ACRDO	INCI	TERMI	x 1000 US\$	
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:GOVREQUEST	COS 86 10	PROPUESTO	OCT86			135.0	
Racionalización de Cuadrillas en el Area Metropolitana y Divisiones Regionales. Evaluación completa de las funciones e integración de las diferentes cuadrillas de acueducto y alcantarillado sanitario a cargo del instituto. Además definir los procedimientos que permitan darle un uso más racional a los recursos humanos y materiales para la ejecución de tales labores. Duración estimada del proyecto: 6 meses. Propuesta elaborada con la colaboración WHO/PAHO.							
APORTES NACIONALES:							
EQUIVALENTE EN \$ EEUU (x1000): 15.0							
COSTO TOTAL DEL PROYECTO:							
EQUIVALENTE EN \$ EEUU (x1000): 150.0							
ORGANISMO NACIONAL ENCARGADO DE LA EJECUCION:							
AyA (Instituto Costarricense de Acueductos y Alcantarillado), DDF (Dirección de Desarrollo Físico), San José.							

:GOVREQUEST	COS 86 11	PROPUESTO	OCT86			630.0	
Tercera Etapa Alcantarillado Sanitario, Ciudades Intermedias (Estudio de Preinversión). Estudio y evaluación de las condiciones en los aspectos relativos al saneamiento ambiental existente en 18 ciudades del área urbana del país, estudiando también a nivel de factabilidad la inversión que requiere la solución de esta problemática. Duración estimada del proyecto: 1 año. Propuesta elaborada con la colaboración WHO/PAHO.							
APORTES NACIONALES:							
EQUIVALENTE EN \$ EEUU (x1000): 70.0							
COSTO TOTAL DEL PROYECTO:							
EQUIVALENTE EN \$ EEUU (x1000): 700.0							
ORGANISMO NACIONAL ENCARGADO DE LA EJECUCION:							
AyA (Instituto Costarricense de Acueductos y Alcantarillado), DDF (Dirección de Desarrollo Físico), San José.							

:GOVREQUEST	COS 86 12	PROPUESTO	OCT86			513.8	
Cooperación Técnica para el Desarrollo Institucional del Instituto Costarricense de Acueductos y Alcantarillados. Fortalecimiento de la capacidad gerencial y operacional del Instituto por medio del desarrollo institucional, modernizando y adaptando a las necesidades reales de toma de decisiones, control interno, desarrollo de recursos humanos, imagen institucional y comercialización, etc. Duración estimada del proyecto: 2 años. Propuesta elaborada con la colaboración WHO/PAHO.							
APORTES NACIONALES:							
EQUIVALENTE EN \$ EEUU (x1000): 57.0							
COSTO TOTAL DEL PROYECTO:							
EQUIVALENTE EN \$ EEUU (x1000): 570.3							
ORGANISMO NACIONAL ENCARGADO DE LA EJECUCION:							
AyA (Instituto Costarricense de Acueductos y Alcantarillado), DDF (Dirección de Desarrollo Físico), San José.							

COUNTRY = COSTA RICA (COS)

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AGENCIA EXT		TITULO Y DESCRIPCION DEL PROYECTO				COMP. EXT.
/GOBIERNO	C.E.S.I.	FECHA	FECHA	FECHA	FECHA	x 1000 US\$
	NO. ID:	ESTADO	PROPU	ACRDO	INCIO	TERMI

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:GOVREQUEST COS 86 13 PROPUESTO OCT86 495.9

Centro Regional de Capacitación (Instituciones de Agua Pot. y Alcantarillado de Centro America, Panamá y Rep. Dominicana). Constitución, organización y funcionamiento de una escuela regional de capacitación para las instituciones de agua potable y alcantarillado, cuyos servicios estarían orientados a la operación y mantenimiento, al desarrollo de los servicios, y a la área administrativa y gerencial. Duración estimada del proyecto; 10 meses. Propuesta elaborada con la colaboración WHO/PAHO. ORGANISMO NACIONAL ENCARGADO DE LA EJECUCION: CAPRIE (Comité Regional)

:GOVREQUEST COS 86 14 PROPUESTO OCT86 241.8

Proyecto de Capacitación Administrativa. Creación del área de capacitación administrativa del Instituto AyA sobre la base de la realización de análisis ocupacional y detección de necesidades, para racionalizar el apoyo administrativo a las necesidades de producción de los servicios de agua potable y alcantarillado del país. Duración estimada del proyecto: 21 meses. Propuesta elaborada con la colaboración WHO/PAHO. APORTE NACIONALES: EQUIVALENTE EN \$ EEUU (x1000): 93.2 COSTO TOTAL DEL PROYECTO: EQUIVALENTE EN \$ EEUU (x1000): 335.0 ORGANISMO NACIONAL ENCARGADO DE LA EJECUCION: AyA (Instituto Costarricense de Acueductos y Alcantarillados), San José, Telex: AyA 2724

:GOVREQUEST COS 86 15 PROPUESTO OCT86 486.0

Ampliación y Mejoramiento de los Servicios de Aseo Urbano Provinciales. Elaboración de un diagnóstico de la situación existente en los servicios de aseo de las principales ciudades provinciales al desarrollo de un programa de mejoras inmediatas y a la elaboración de un proyecto para la ampliación y mejoramiento de los servicios de aseo del país. Duración estimada del proyecto: 5 años. Propuesta elaborada con la colaboración WHO/PAHO. APORTE NACIONALES: EQUIVALENTE EN \$ EEUU (x1000): 118.7 COSTO TOTAL DEL PROYECTO: EQUIVALENTE EN \$ EEUU (x1000): 604.7 ORGANISMO NACIONAL ENCARGADO DE LA EJECUCION: IFAM (Instituto de Fomento y Asesoría Municipal) PERSONA A CONTACTAR: Ing. Juan Bta Lugari, Ministerio de Salud.

COUNTRY = COSTA RICA (COS)

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TITULO Y DESCRIPCION DEL PROYECTO

AGENCIA EXT	C.E.S.I.	FECHA	FECHA	FECHA	FECHA	COMP. EXT.	
/GOBIERNO	NO. ID:	ESTADO	PROPU	ACRDO	INCIO	TERMI	x 1000 US\$

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:GOVREQUEST COS 86 17 PROPUESTO OCT86 1115.7

Ampliación y Mejoramiento de los Servicios de Aseo Urbano en la Gran Area Metropolitana del Valle Central.

Elaboración de un diagnóstico de la situación existente en los servicios de aseo , al desarrollo de un programa de mejoras inmediatas y a la elaboración de un proyecto para la ampliación y mejoramiento de los servicios de aseo del país.

Duración estimada del proyecto: 5 años.

Propuesta elaborada con la colaboración WHO/PAHO.

APORTES NACIONALES:

EQUIVALENTE EN \$ EEUU (x1000): 263.8

COSTO TOTAL DEL PROYECTO:

EQUIVALENTE EN \$ EEUU (x1000): 1379.5

ORGANISMO NACIONAL ENCARGADO DE LA EJECUCION:

IFAM (Instituto de Fomento y Asesoría Municipal)

PERSONA A CONTACTAR:

Ing. Juan Bta Lugari, Ministerio de Salud

:GOVREQUEST COS 86 18 PROPUESTO OCT86 1932.5

Atención primaria para Zonas Deprimidas.

Diagnósticos de la situación de salud; instalación de 75% de las letrinas sanitarias necesarias, perforación del 60 al 75% de los pozos con bombas manuales de agua requeridas; capacitación del personal; educación en salud a la comunidad.

Duración estimada del proyecto: 5 años.

Propuesta elaborada con la colaboración WHO/PAHO.

APORTES NACIONALES:

EQUIVALENTE EN \$ EEUU (x1000): 439.1

COSTO TOTAL DEL PROYECTO:

EQUIVALENTE EN \$ EEUU (x1000): 2371.6

ORGANISMO NACIONAL ENCARGADO DE LA EJECUCION:

MD/DRP (Ministerio de Salud/División de Regiones Programáticas)

:GOVREQUEST COS 86 19 PROPUESTO OCT86 842.4

Control de la Contaminación de Cuerpos de Agua.

Desarrollo y consolidación de un programa nacional de control de contaminación de agua por un estudio de diagnóstico, proposición de legislación, establecimiento de un sistema de permisos para las actividades contaminadoras del recurso agua, establecimiento de un sistema monitoreo de la calidad del agua de los cuerpos receptores y de los afluentes industriales y agrícolas. Duración est.: 5 años. Propuesta elaborada con la colaboración WHO/PAHO.

APORTES NACIONALES:

EQUIVALENTE EN \$ EEUU (x1000): 183.8

COSTO TOTAL DEL PROYECTO:

EQUIVALENTE EN \$ EEUU (x1000): 1026.2

ORGANISMO NACIONAL ENCARGADO DE LA EJECUCION:

MS (Ministerio de Salud)

COUNTRY = COSTA RICA (COS)

AGENCIA EXT		TITULO Y DESCRIPCION DEL PROYECTO			FECHA	FECHA	FECHA	FECHA	COMP. EXT.
/GOBIERNO	C.E.S.I.	NO. ID:	ESTADO	PROP	ACRDO	INCIO	TERMI	x 1000 US\$	
:GOVREQUEST	COS 86 20	PROPUESTO		OCT86				3325.8	
Saneamiento Rural de Costa Rica. Instalación de 4.600 bombas de agua; perforación de pozos de agua; construcción de 40 miniacueductos con llaves públicas para 4.000 habitantes; capacitación del personal, educación a la comunidad, construcción e instalación de 36.000 letrinas sanitarias. Duración estimada del proyecto: 5 años. Propuesta elaborada con la colaboración WHO/PAHO. APORTES NACIONALES: EQUIVALENTE EN \$ EEUU (x1000): 586.9 COSTO TOTAL DEL PROYECTO: EQUIVALENTE EN \$ EEUU (x1000): 3912.8 ORGANISMO NACIONAL ENCARGADO DE LA EJECUCION: MS/DRP/DSRM(Ministerio de Salud/División de Regiones Programáticas/Departamento de Salud Rural)									
GERMANY/KFW	COS 88 2	PROPUESTO		MAY88				0.0	
Abastecimiento y Alcantarillado en Areas Rurales - Medidas complementarias.al proyecto KfW no 8766446; CESI no (véase también KfW proyecto no 8766446; CESI no COS/87/002) - NO. DO PROYECTO: 8770448 PERSONA A CONTACTAR: Neuhaus, KfW, Tel: 69/7431-1, Fax. 74312944									
GERMANY/KFW	COS 87 2	PROPUESTO		NOV87				0.0	
Abastecimiento y Alcantarillado en Areas Rurales - Inversiones. (véase también KfW proyecto no 8770448; CESI no COS/88/002) - NO. DO PROYECTO: 8766446 PERSONA A CONTACTAR: Neuhaus, KfW, Tel: 69/7431-1, Fax: 74312944									
INTER-AM.DB	COS 86 22	PROPUESTO		SEP86				0.0	
Programa Control de la Malaria. No hay descripción. - NO. DO PROYECTO: CR0122 PERSONA A CONTACTAR: Chief, Public Inf. Section, IDB Washington DC, Tel: 623 3973									
INTER-AM.DB	COS 85 23	PROPUESTO		NOV85	90			0.0	
Fortalecimiento Servicios Salud. Adecuados servicios primarios de salud en zonas marginales. - NO. DO PROYECTO: CR0120 ORGANISMO NACIONAL ENCARGADO DE LA EJECUCION: MS (Ministerio de Salud) PERSONA A CONTACTAR: Chief, Public Inf. Section, IDB Washington DC, Tel: 623 3973									

COUNTRY = COSTA RICA (COS)

AGENCIA EXT		TITULO Y DESCRIPCION DEL PROYECTO			FECHA	FECHA	FECHA	FECHA	COMP. EXT.
/GOBIERNO	C.E.S.I.	NO. ID:	ESTADO	PROPUPU	ACRDO	INICIO	TERMI	x 1000 US\$	
INTER-AM.DB	COS 84 1	PROPUESTO	NOV84	90				48000.0	
Seaneamiento, Agua Potable Ciudades Intermedias. No hay descripción. - NO. DO PROYECTO: CR0117 ORGANISMO NACIONAL ENCARGADO DE LA EJECUCION: ICAA (Instituto Costarricense de Acueductos y Alcantarillado) PERSONA A CONTACTAR: Chief, Public Inf. Section, IDB Washington DC, Tel: 623 3973									
SWEDEN/SIDA	COS 89 1	PROPUESTO	FEB89	89	91			152.0	
Water Supply and Environmental Health in Central America; (Subproject of +AM/89/2). Improve water supply facilities using low-cost technology appropriate to O&M capacity in individual communities. Construction of low-cost latrines and a building up of O&M capacity and simple tariff systems. Training of local staff for hygiene education. Support to local community participation organizations and institutions. Socio-economic studies by local research institutions to increase adaption to local requirements. APORTES NACIONALES: In kind, (approximately same size). EQUIVALENTE EN \$ EEUU (x1000): 0.0 AGENCIA INTERNACIONAL/EXTERNA DE EJECUCION: UNICEF No: PERSONA A CONTACTAR: I. Andersson, SIDA Infra, Stockholm									
WB/IBRD	COS 88 1	PROPUESTO	88					20000.0	
Water Supply; Phase II. (Phase I see COS/82/1). Improvements of water supply and sewerage facilities in San José and surrounding areas, including the expansion of water supply distribution. Strengthen and improve financial management, planning and operations of AYA. Provision of technical assistance. - NO. DO PROYECTO: 6COSPA047 COSTO TOTAL DEL PROYECTO: EQUIVALENTE EN \$ EEUU (x1000): 40000.0 ORGANISMO NACIONAL ENCARGADO DE LA EJECUCION: AYA (Instituto Costarricense de Acueductos y Alcantarillados). CONSULTOR: Will be required. PERSONA A CONTACTAR: R. Halperin, WBHQ I-8100 tel: 38755									

COUNTRY = COSTA RICA (COS)

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		TITULO Y DESCRIPCION DEL PROYECTO					
AGENCIA EXT	C.E.S.I.	FECHA	FECHA	FECHA	FECHA	COMP. EXT.	
/GOBIERNO	NO. ID:	ESTADO	PROPU	ACRDO	INCIO	TERMI	x 1000 US\$

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CEC COS 85 2 EJECUCION NOV85 9950.0
Integrated Rural Development of OSA/GOLFITO Region.
Supply of equipment, infrastructural works, maintenance,
lines of credit and technical assistance.
- NO. DO PROYECTO: CR 8506
COSTO TOTAL DEL PROYECTO:
EQUIVALENTE EN \$ EEUU (x1000): 21635.0

INTER-AM.DB COS 89 2 EJECUCION MAY89 MAY89 6000.0
Estudios de Preinversion - IV Etapa.
Servicios de consultoría para la preparación de estudios ge-
nerales, estudios de prefactibilidad y de factibilidad y
diseños de ingeniería relacionados con proyectos de inver-
sión declarados prioritarios de acuerdo al Plan Nacional de
Desarrollo incluyendo los sectores de salud y saneamiento
ambiental.
COSTO TOTAL DEL PROYECTO:
EQUIVALENTE EN \$ EEUU (x1000): 9200.0
ORGANISMO NACIONAL ENCARGADO DE LA EJECUCION:
MIDEPLAN (Ministerio de Planificación Nacional y Política
Económica)
PERSONA A CONTACTAR:
Chief, Public Inf. Section, IDB Washington DC, Tel: 623 3973

WB/IBRD COS 82 1 EJECUCION DEC80 AUG82 26000.0
Water Supply; Phase I. (Phase II see COS/88/1).
To alleviate water shortages in San José & improve services
throughout the country, construction of a 27 km transmission
pipe, water mains in low-income areas of San José will be
replaced, 30,000 new water meters will be installed, and a
water supply master plan will be prepared for San José and
3 other cities. Technical assistance.
- NO. DO PROYECTO: 6COSPA027
AGENCIA DE COFINANCIAMIENTO/AGENCIA DE COOPERACION:
COMONWEALTH: US\$ 13.8 million.
ORGANISMO NACIONAL ENCARGADO DE LA EJECUCION:
AyA (Instituto Costarricense de Acueductos y Alcan-
tarillado)
PERSONA A CONTACTAR:
R. Halperin, WBHQ I-8100 tel: 38755

COUNTRY = COSTA RICA (COS)

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                          TITULO Y DESCRIPCION DEL PROYECTO
AGENCIA EXT  C.E.S.I.          FECHA  FECHA  FECHA  FECHA  COMP. EXT.
/GOBIERNO   NO. ID:   ESTADO    PROP  ACRDO  INCIO  TERMI   x 1000 US$
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WHO/PAHO    COS 90 1   EJECUCION          JAN90  DEC91   253.1
Saneamiento Ambiental.

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Asistencia para la investigación en el mejoramiento de la calidad del agua en sistemas rurales administrados por las comunidades y el AyA; cooperación en la coordinación inter-institucional para el estudio de cuencas hidrográficas; asistencia técnica para la capacitación de personal en la operación y mantenimiento de los sistemas de agua y alcantarillado.

- NO. DO PROYECTO: COR-CWS-010
 ORGANISMO NACIONAL ENCARGADO DE LA EJECUCION:
 AyA (Instituto Costarricense de Acueductos y Alcantarillado), MDS (Ministerio de Salud)
 PERSONA A CONTACTAR:
 Ingeniero Sanitario, WHO/PAHO, San José, Costa Rica

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INTER-AM.DB COS 84 2   TERMINADO          DEC84  DEC84  OCT88  28300.0
Programa Urbano y Rural de Agua Potable y Alcantarillado
Puntarenas.

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Ampliación y rehabilitación de acueductos en ciudades intermedias y comunidades rurales y alcantarillado sanitario de Puntarenas.

- NO. DO PROYECTO: CR0022
 COSTO TOTAL DEL PROYECTO:
 EQUIVALENTE EN \$ EEUU (x1000): 43400.0
 ORGANISMO NACIONAL ENCARGADO DE LA EJECUCION:
 ICAA (Instituto Costarricense de Acueductos Y Alcantarillado)
 PERSONA A CONTACTAR:
 Chief, Public Inf. Section, IDB Washington DC, Tel: 623 3973

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INTER-AM.DB COS 76 1   TERMINADO          JUL76  OCT77  MAY83  15500.0
Alcantarillado de San José. II Etapa.

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Construcción de obras en las zonas Norte y Sur incluyendo la instalación de tuberías principales y redes de alcantarillado con conexiones domiciliarias. El 77 % de las nuevas conexiones externas al sistema beneficiará a familias de bajos ingresos que residen en viviendas con frente a las redes de alcantarillado.

- NO. DO PROYECTO: CR0006
 NUMERO DE PERSONAS ATENDIDAS:
 475000 en el año 2000
 APORTES NACIONALES:
 EQUIVALENTE EN \$ EEUU (x1000): 6700.0
 COSTO TOTAL DEL PROYECTO:
 EQUIVALENTE EN \$ EEUU (x1000): 22200.0
 ORGANISMO NACIONAL ENCARGADO DE LA EJECUCION:
 SNAA (Servicio Nacional de Acueductos y Alcantarillados)
 PERSONA A CONTACTAR:
 Chief, Public Inf. Section, IDB Washington DC, Tel: 623 3973

COUNTRY = COSTA RICA (COS)

TITULO Y DESCRIPCION DEL PROYECTO						
AGENCIA EXT	C.E.S.I.	FECHA	FECHA	FECHA	FECHA	COMP. EXT.
/GOBIERNO	NO. ID: ESTADO	PROPU	ACRDO	INCIO	TERMI	x 1000 US\$
WHO/PAHO	COS 88 3	TERMINADO		JAN88	DEC89	132.6
Saneamiento Ambiental. Asistencia para la investigación en el mejoramiento de la calidad del agua en sistemas rurales administrados por las comunidades y el AyA; cooperación en la coordinación inter-institucional para el estudio de cuencas hidrográficas; asistencia técnica para la capacitación de personal en la operación y mantenimiento de los sistemas de agua y alcantarillado. - NO. DO PROYECTO: COR CWS-010 ORGANISMO NACIONAL ENCARGADO DE LA EJECUCION: AyA (Instituto Costarricense de Acueductos y Alcantarillado), MDS (Ministerio de Salud) PERSONA A CONTACTAR: Ingeniero Sanitario, WHO/PAHO, San José, Costa Rica						
WHO/PAHO	COS 86 23	TERMINADO		JAN86	DEC87	269.5
Saneamiento Ambiental. Cooperación con las autoridades gubernamentales para alcanzar los objetivos del Decenio, específicamente en los aspectos de desarrollo de sistemas de información, capacitación del personal a través de cursos de corto plazo, becas y desarrollo de centros de cooperación para el intercambio de información y documentación en AyA y otras agencias; organización de participación comunitaria. - NO. DO PROYECTO: COR-CWS-010 ORGANISMO NACIONAL ENCARGADO DE LA EJECUCION: AyA (Instituto Costarricense de Acueductos y Alcantarillado), MDS (Ministerio de Salud) PERSONA A CONTACTAR: Ingeniero Sanitaria, WHO/PAHO, San José, Costa Rica						
WHO/PAHO	COS 84 3	TERMINADO		JAN84	DEC85	229.5
Saneamiento Ambiental. Cooperación con las autoridades gubernamentales para alcanzar los objetivos del Decenio, específicamente en los aspectos de desarrollo de sistemas de información, capacitación del personal a través de cursos de corto plazo, becas y desarrollo de centros de cooperación para el intercambio de información y documentación en AyA y otras agencias; promoción y organización de participación comunitaria. - NO. DO PROYECTO: COR-CWS-010 ORGANISMO NACIONAL ENCARGADO DE LA EJECUCION: AyA (Instituto Costarricense de Acueductos y Alcantarillado), MDS (Ministerio de Salud) PERSONA A CONTACTAR: Ingeniero Sanitario, WHO/PAHO, San José, Costa Rica						