Impact evaluation of Netherlands assisted programmes in Water Supply and Sanitation, Shinyanga Region, Tanzania, 1990-2006
Terms of Reference

Water is Life

1. Rationale, purpose and scope of the evaluation

Water is essential for human life and dignity. Netherlands development cooperation has been active in water supply for over 30 years. The Policy and Operations Evaluation Department (IOB) of the Ministry of Foreign Affairs has initiated a series of impact evaluations of support to water supply and sanitation activities. The first in this series concerns the Netherlands-supported programmes in Tanzania, Shinyanga region, where the Netherlands involvement started as long ago as 1971. The evaluation coincides with a planned final Review of the 2002-2006 Shinyanga Rural Water Supply and Sanitation Programme, a joint activity of the Ministry of Water and the Royal Netherlands Embassy. It has been decided to merge the impact evaluation and the final review.

The purpose of the impact evaluation is both to account for the long term support provided to rural drinking water supply and sanitation in Shinyanga region as well as to draw lessons that will be useful for policy formulation. The impact evaluation is expected to contribute to methodological knowledge on impact evaluation in water supply and sanitation.

Tanzania and the Netherlands are signatories to the Millennium Development Goals that include the targets of halving the proportion of people without access to safe drinking water and without access to hygienic sanitation. The ultimate purpose of support to water supply and sanitary facilities goes well beyond access: this support is intended to improve health, reduce mortality, reduce women's workload, raise school enrolment and attendance and enable increased productivity. There is consensus on the importance of such ultimate impacts on human welfare but conventional evaluation studies do not usually quantify them. Quantification is a key characteristic of the proposed impact study which is therefore in two parts. The first part describes the problem, context and key inputs, outputs and outcomes of the programs since 1990. The second part attempts to estimate impacts such as health improvements and to attribute these where appropriate to the programme activities. Stakeholders (including government agencies, donor agencies and NGOs) have indicated their interest in both parts.

1. Background of the Programmes

Shinyanga region is one of the twenty one regions of Tanzania mainland and located in the Northern part of Tanzania. The region occupies an area of 50.780 square km. The current population is about 3 mln, of which 90 % is living in rural areas. The average household size is 6.3. The major economic activity on which the population depends is subsistence farming. Food crops are maize, millet, paddy, sweet potatoes and cassava. The main cash crop in the region is cotton for which about 10 % of the arable land is cultivated. Livestock keeping is the second dominant economic activity in the region.

Surface water is the most commonly used source of water, but neither its availability nor its quality is very good. Most surface water is seasonal and contaminated by cattle, human beings and insects. All rivers and streams in the region are seasonal. Groundwater does not occur in abundance. Yields of wells and boreholes are generally low and quality is variable, from excellent to extremely poor; high salinity and/or fluoride being the major quality problems. Rapid increase of the human and livestock population puts an increasing strain on the relatively scarce water resources of the region. Water for drinking and cooking is usually carried by women or hauled on to a bicycle by men, while there is a tendency to bathe and wash clothes and dishes at the water point itself[1].

Evolution of the Tanzanian National Water policy dates back to 1971 when the Government of Tanzania declared a 20-year water supply program (1971-1991) whereby it was envisaged that all inhabitants would have access to safe and reliable water sources by 1991. Ten years later it was clear that the target was far from being achieved. Among the key reasons for poor coverage were the top down approach from the Central Government and inappropriate technologies that were beyond the capability of the communities to operate and maintain, and which the government could not sustain. In 1991 the government approved the first National Water policy with community participation through village water committees, establishment of village water funds and adoption of technologies that are both affordable and easy to operate and maintain, as key features. The Government retained the role of investor and would be partly responsible for operation and maintenance cost. With the advancement of time it became apparent that the government could not continue meeting operation and maintenance costs and communities were encouraged to manage the schemes and establish their own water entities.

In the new National Water Policy (NAWAPO) of 2002 rural water supply service delivery aims at improving health and alleviating poverty of the rural population through improved access to adequate and safe water. Specific objectives are:
. to provide adequate, safe, affordable and sustainable water supply services to the rural population;
. to define the roles and responsibilities of the various stakeholders;
. to emphasize on communities paying for part of the capital costs, and on full cost recovery for operation and maintenance as opposed to the previous concept of cost sharing;
. to evolve from a traditional supply driven to a demand-responsive approach;
. to manage water supplies at the lowest possible level of the community;
. to promote the participation of the private sector in the delivery of goods, services and works;
. to promote health through integration of water supply, sanitation and hygiene education[2].

The National Strategy for Growth and Poverty Reduction (MKUKUTA) calls for improving Tanzania water supply to 65% coverage by 2010. Water supply is identified as one of the seven priority poverty reduction strategies. The MDG target translates into a target of 74% water supply coverage by the 2015 deadline. The Shinyanga region water service coverage rate was estimated in 1992 at 10, 5 % and by December 2005 at 43 % of the population. Data on coverage rate for improved sanitary facilities based on definitions used by the UN are not available.

[1] Source: Characteristics of Shinyanga region environment, 1997
[2] Source: Rural Water Supply and Sanitation Programme in Shinyanga region, background and programme status 2006

The Netherlands produced in 1989 a sector memorandum on drinking water supply, sanitary facilities, drainage and waste disposal that strongly endorsed an integrated approach in which improvements in water supply are linked to improvements in sanitation, drainage, solid waste disposal and hygiene behaviour. Furthermore it emphasized the need for user participation, which was seen as an essential element in ensuring more appropriate technology choices, a greater sense of responsibility among users, and in the long run, the devolution of operation and maintenance tasks. The memorandum underlined the importance of economic and social sustainability. In 1989 the Ministry also published the policy document 'Women, water and sanitation' that specified the role of women in user participation with a view to arrive at better management and maintenance of facilities, safer hygiene behaviour and reduction of women's workload. In 1998 the policy document 'Drinking water supply and sanitation' was published. The central principle for drinking water and sanitation laid down in this document is to ensure the sustainability of water supply and sanitation facilities by designing, implementing and operating facilities which are desired by and can be managed or co-managed by the users themselves. The construction of capital-intensive infrastructure was to be left to commercial banks and international financing institutions. Since the end of the nineties the Netherlands has been promoting a sector wide approach to development cooperation, including for water supply and sanitation[3]. In 2004 the Minister for Development Cooperation made a commitment to contribute to Millennium Development Goal 7 - to ensure environmental sustainability, by providing sustainable access to safe drinking water and basic sanitation with an additional 50 mln people by 2015[4].

The selection of Shinyanga for Netherlands support was rather arbitrary. Tanzania had no explicit regional priorities. A crucial criterion in the selection was the focus on target-group orientation, as Shinyanga was one of the poorer regions of Tanzania. The Tanzania-Netherlands Cooperation Programme for Rural Water and Sanitation Development in Shinyanga Region included the following:

1. Shinyanga Region Water Resources Survey (1971-73)
2. Shinyanga Shallow Wells Project (1974-78)
3. Shinyanga Wells Rehabilitation Project (1980-82)
4. Shinyanga Rural Water Supply Programme (1985-87)
5. Shinyanga Rural Water Supply and Sanitation Programme (1988-93)
6. Shinyanga Domestic Water Supply Programme (1993-2002)
7. Shinyanga Rural Water Supply and Sanitation Programme (2002-2006)

The current evaluation proposal covers roughly the last three programmes in Shinyanga region. The period covered follows the period for the MDG targets.

Exact figures on budgets and expenditures on the programmes between 1990 and 2005 are not readily available, which is partly explained by the fact that the Domestic Water Supply and Sanitation Project covered two regions, Shinyanga and Morogoro. The expenditures for the programme for Shinyanga region as from 1990 are estimated at approximately Euro 25 mln.

Water Supply Surveys undertaken between 1971 and 1973 formed the basis of the Shinyanga Master Plan. The Master Plan stressed the importance of shallow wells which were deemed to be least expensive in serving the rural population, to provide good quality water, and to be easily manageable at the community level. Accordingly a large number of shallow wells were constructed in the 1974-78 period. Shallow wells have remained a key element ever since.

[3] Reference to the document Sector wide approach for water and sanitation development, 2002
[4] Source: Progress of the Water Programme 2004, letter to Parliament, May 2005

Some of the Shinyanga experience has served as a basis for national policies for the sector.

Prior to 1993 wells were handed over to village governments but water users had no role in site selection, construction, operation and maintenance. This was changed in 1993 when Water User Groups were established to manage water facilities. This element of the Shinyanga programme is generally considered a successful innovation and has attracted much attention.

With a view to integrate the RWSSP Shinyanga region in government policies and structures in 2002 a new institutional strategy was adopted. The current programme falls within the Tanzanian local government system, which is based on political devolution and decentralisation of functions and finances to District Councils and lower Local Government/ communities. A big difference from the former DWSSP, whereby the project approach was practiced, is that the current programme bases its activities on prepared district plans as a main element of a sector wide approach. Other innovative elements of the new strategy include the changing functions of government institutions towards a more regulating and facilitating one and the technical backstopping, capacity building and monitoring role of the Regional Secretariat. The National Rural Water Supply and Sanitation Programme concept document that was recently presented by the Ministry of Water refers to the programme for Shinyanga as one of the implementation models that show the NAWAPO's policies in practice.[5]

This evaluation will be mainly concerned with shallow wells and it will pay special attention to the institutional innovation of the water user groups. The evaluation will also pay special attention to the new institutional strategy adopted in 2002.

2. Evaluation questions

In this evaluation the following key questions will be addressed, in order to meet the combined objectives of the impact evaluation and the final review of the 2002-2006 Shinyanga RWSSP:

1. What have been key aspects of the problem and the context for water and sanitation activities in Shinyanga region since 1990?
2. What have been the objectives and stated target groups and key targets of the successive Netherlands supported programmes of Netherlands support for rural water supply and sanitation in Shinyanga region since 1990?
3. What have been the key inputs provided, the strategies adopted, types of activities undertaken and what key results (output, outcome) have been achieved as compared to targets?
4. To what extent has the policy and institutional strategy adopted in 2002 contributed to sustainable results in drinking water supply and sanitation?
5. To what extent have the programmes been effective?
6. To what extent have the programmes been cost effective?
7. What has been the impact of the programme on target groups?
8. Which lessons can be drawn from the findings?

For an overview of indicators for key inputs, outputs, outcomes and impacts reference is made to the attached evaluation matrix.

[5] Reference the Ministry of Water, National Rural Water Supply and Sanitation Programme concept document, February 2006

Effectiveness is defined as the extent to which the key direct results of the programmes (outputs) have contributed to the (sustainable) realisation of the objectives and overall purpose (outcomes/ impact).

Cost effectiveness refers to the relation between the costs and the outcomes/ impacts (costs per capita, change in impact variables). Could the same outcomes/ impacts have been achieved against less costs?

Impact is defined as the effects of the Netherlands supported Rural Water Supply and Sanitation programmes on the target groups (male and female). The impact assessment should help better understand to which extent activities have reached the poor and the magnitude of the effects on people's welfare. The study will attempt to relate the findings on impact to programme strategies, outputs and outcomes.

4. Methodology

The methodology will be a combination of qualitative and statistical methods. Data collection will be through the study of existing data and documentation, sample based village level data collection, interviews of members of selected households and interviews of key players.

The study will comprise two parts.

The first part addresses questions 1 to 4 and establishes the facts concerning the problem, context, key inputs, outputs and (partly) outcomes.
To address question 4 towards the end of the study a short mission will be organized to assess the new institutional strategy adopted in 2002 (in light of relevant policies). This mission will benefit from the data collection undertaken on inputs etc.

The second and major part of the study is concerned with impact variables and addresses questions 5 to 7, focusing on impact at target group level. Here the central issue is to what extent observed changes in impact variables (such as under-five mortality) can be attributed to the programmes. This requires a careful consideration of other factors which may have affected the impact variables, e.g. the occurrence of a drought or interventions supported by other donors or NGOs. This widens the scope of the investigation considerably: not only the inputs and outputs under the programme have to be considered but in principle also all other influences on outcomes and impact variables. As a result the study will require a major effort of collecting both existing and new data. Obviously, the first part of the study will also benefit from this data collection.

The study will end with a workshop involving researchers and stakeholders during which the findings of the two parts of the study will be presented and discussed. Both parts will help answer question 8 on lessons that can be drawn, which will be the major theme of the workshop.

Part 1

Context
The study will outline key aspects of the context for the water supply and sanitation initiatives in Shinyanga Region since 1990:

- natural environment, including
    - climatic events and trends;

        - trends in groundwater quality and availability;
    - demography;
    - economic opportunities, constraints and trends over the study period;
    - poverty variation in the region;
    - HIV/AIDS prevalence;
    - social and cultural trends, including gender;
    - problems in water supply, sanitation and hygiene as experienced by the authorities;
    - water and sanitation initiatives supported by the Netherlands before 1990;
    - water and sanitation initiatives supported by other agencies since 1990;
    - relevant developments in the policy and institutional context:
        - water supply and sanitation;
        - local government;
        - health;
        - primary education;
        - land ownership.

Input and output
Drawing on available data and documentation, the study will outline the content of the water and sanitation programmes supported by the Netherlands in Shinyanga Region since 1990, focusing on:

- the financial inputs provided;
- the technical and institutional strategies adopted (with reference to national policy), including types of water technology supported, approaches to design, planning and delivery, monitoring and evaluation, strategies for water user participation and for addressing gender issues, and funding and cost recovery arrangements;
- strategies to involve the poor/ marginalized groups;
- the types of activities undertaken;
- the outputs achieved:
    - number and coverage of functioning water supply facilities;
    - number and coverage of improved sanitation facilities;
    - special provisions, such as for washing, bathing, vegetable gardening;
    - functioning operation and maintenance arrangements;
    - functioning water management and support institutions, with related registration and tenure arrangements;
    - water users and CBO (m/f), government and NGO personnel who have received training and on what ;
    - hygiene awareness.
- comparison of key planned and actual outputs and targeting;
- trends in the costs per facility and per capita that were incurred over the study period;
- trends in the estimated proportion of the region's population served by improved water sources and sanitation facilities.

This list is not exhaustive. Before or during the study, other variables may be identified for inclusion.

Outcomes
It will be necessary to clarify what the outcomes of these programmes have been. Have the activities and outputs (such as training and shallow well construction) led to the intended increased access to improved water sources, consumption of safe water, sanitation practice and

institutional performance? Key issues are identified below. Before or during implementation, the study team may decide to address additional outcome variables.

- the technical sustainability of the wells and hand pumps;
- access to and use of water: who collects the water, who uses the water and for what purpose; what is the nature of the user group; what happened to the traditional water sources and who benefited from the improved supplementary source in what ways; inclusion or exclusion of the poor/ marginalized groups in access to improved water sources. Although some estimates are available, there are no measured data on the amounts of water that are used per person from the improved sources installed by the programmes under review. The study will undertake a limited programme of observations at sample water points to generate indicative data on this key issue, and will determine how to adjust the observed quantities for seasonal variation, based partly on community reports;
- quality of water: the physical, chemical and biological quality of water from improved sources is measured during installation, but not systematically thereafter. The study will measure these attributes at sample points in order to estimate the aggregate water quality;
- access to and use of sanitation facilities: although detailed data are available on households' ownership of latrines and other toilet facilities, the categories used are too broad and there is uncertainty as to the proportion of the population who actually have access to latrines or toilets of adequate quality. It is also known that access to such facilities does not guarantee that they are used. In sample communities, the study will survey the types of latrine or toilet facility that households and members within the household (men and women) prefer, have and use, as well as the latrine upkeep;
- hygiene practices: much of the potential health impact of improved water supply is conditional on the adoption of the hygiene practices that the water supply facilitates, such as bathing, the cleaning of food, the washing of hands by all household members at all critical times, and washing and hygiene during childbirth and in care of the sick. The study will also assess hygiene practices in storage and drawing of drinking water;
- use of special provisions such as for washing, bathing and vegetable gardening;
- functioning of water user groups: broader institutional impacts for communities are conditional on the institutional quality of water user groups. In sample villages the study will record objective institutional variables such as WUG membership, assets, frequency of meetings, who of the members attend the meeting (all or only better of men and/ or women), who makes the decisions, who have been trained on what?. It will also undertake participatory review with WUGs and village governments of WUGs' institutional capacity and performance, including their management of physical and monetary assets and their effectiveness in ensuring sustainability of the improved water supply and in solving possible conflicts between different user groups;
- the study will explore how HIV/AIDS affects water use.

The short mission for the assessment of the effectiveness of the institutional strategy adopted will address the following questions:

- Is the set up at regional level and council level in line with the Local Government Reform Program? Have roles and responsibilities been clearly defined? Are these definitions of roles and responsibilities known and practiced?
- Are the concerned institutions sufficiently capacitated for the respective (new) functions and responsibilities for implementing the Water policy with respect to rural water supply and sanitation?

- Has the planning of the RWSSP been harmonised with and integrated in the Council planning cycle?
- Has the backstopping and monitoring at regional and district level been results based and to what extent is monitoring information used to keep on track and address bottlenecks?
- To what extent has the new institutional strategy enhanced and contributed to sustainable results? How is sustainability of the strategy perceived by authorities and by different user groups?

The short mission will be undertaken by two, maximum three experts with broad expertise in the rural drinking water and supply sector in Tanzania and expertise in institutional development. This assessment will make use of the findings from other parts of the study and will at the same time inform the study, in particular in respect to the sustainability of results.

Part 2

Impact Analysis

The second part of the study is concerned with impact and its attribution. This will involve a statistical analysis of existing and newly collected data. Three domains of impact will be considered, in line with programme documents:

- Health improvements: reduced incidence of water- and sanitation related diseases (where recorded); reduced mortality
- Gender equality: -changes in time taken to collect water by women and girls
  -girls' school enrolment and attendance
- Livelihood: changes in economic activities, poverty reduction

In poverty analysis the unit of analysis is typically the household. This is not appropriate in the present context since water and sanitation activities are likely to have effects which are highly correlated across households in the same location. It is therefore more efficient to sample locations than households. The study will use the village as the primary sampling unit. A representative sample (probably about 100 locations) will be drawn in such a way that the probability of a location to be sampled is proportional to its size in terms of population. Stratification will be used to ensure an adequate coverage of rural towns. Some of the data will be collected at the level of a water user group or association. If a location has more than one of these then one will be selected randomly.

The choice of the impact variables is partly based on practical considerations. In principle one would like to include as many impact variables as possible: missing impact, positive or negative, biases the overall assessment. The three categories of impact variables above reflect government priorities in Tanzania. Within these categories key variables are chosen that can be expected to be observable by means of the survey instrument or are available from existing sources such as census information or records from dispensaries and water user groups. While it is clear that no impact variables can be used for which there are no data available or which can only be observed at excessive cost, the ultimate set of impact variables will be decided in a brief pilot data-collection effort in close consultation with the Ministry of Water (Tanzania) and a sector specialist.

Although the focus is at the group (rather than the household) level, part of the impact is still likely to depend on changes at household level. For instance, for sanitary practices to be effective

they must be shared by *all* household members. Therefore, to validate the information collected from the survey additional qualitative interviews at household level are planned at a limited number of locations.

In impact evaluations one usually compares an indicator variable for a treatment group and a control group. For example, one may compare mortality in a village which has benefited from hygiene training with mortality in one that has not. Obviously many variables other than the training programme affect mortality. While the nature of treatment is binary in this example (the village did or did not receive training) "treatment" in the Shinyanga programmes takes many forms. This introduces heterogeneity in the treatment group: villages differ not only in *whether* they have a well but if so also in when that well was installed, what type it is, whether it was rehabilitated, how far away it is located, whether they received training in hygiene, the proximity of latrines and in many other ways. This rules out a standard statistical impact evaluation design. Rather the study will largely rely on a multiple regression approach which can capture heterogeneity of treatment and can also control for many (but not all) non-treatment influences.

Implications for data collection

Village-level data on construction and rehabilitation of wells, dams and boreholes are available in the water database. These data need to be supplemented with data collection in the village to establish a "complete" event history: did the well run dry? When? Did it stop functioning? Did people continue to use alternative water sources? Was there a drought? How much did the population grow? How did water use change over time? (Note that this covers some of the outcome variables needed for part 1.)

This data collection will be a major effort since a large number of villages will need to be visited.

Statistical approach

Impacts can be identified on the basis of observed differences: differences between communities and differences over time. The study will use both.

For some impact variables there are observations for different points in time. For example, monthly data on incidences of various diseases are available at dispensaries. Changes over time in the impact variable can then be related (in a regression) to changes in explanatory variables which will include the treatment variables for water and sanitation and also non-programme variables which may have affected the impact variable. In this way unobserved (and time-invariant) differences between villages will be filtered out.

In cases the impact variable is not measured at the village level. Consider the incidence of diarrhea. This is a variable which is recorded at dispensaries (usually since the early 1990s). It is a noisy indicator of diarrhea incidence at the village level since a dispensary serves a number of different villages and, in addition, because those seeking help are a subset of those affected. This makes it more difficult to find significant changes in the impact variable. However, it may be possible to obtain village level data for some of the health impact variables, notably for relatively rare events such as cholera outbreaks where we can rely on recall questions.

Furthermore, in some cases there are no direct observations on the impact variable concerned, e.g. poverty or welfare more generally. However, the Census provides variables which can be used as

proxies. This can apply either at the household or at the community level. As before, these estimates can be related in a regression to treatment and non-programme variables.[6]

A two-pronged approach will be followed. First, reduced form estimation will give us estimates of the effect of inputs (e.g. shallow well construction) on impact variables. Such estimates are very useful in themselves since they allow an assessment of the effectiveness of the intervention, the main objective of the evaluation. It can be objected that this is a black box approach which does not explain *why* for instance cholera responded to the construction of the well. Therefore, secondly, whether outcome variables which are known to intermediate the effect of water availability on cholera incidence (e.g. the amount of safe water consumed) have indeed improved as well, will be assessed. This would make an estimated effect of the well on cholera incidence all the more credible.

The impact variables of interest are affected by more than one policy. For example, cholera incidence is affected by three different inputs: interventions aimed at providing safe water, installing improved sanitation facilities and hygiene training. An attractive feature of our approach is that we can account for the impact of each of these interventions. Far from having to accept an impact estimate as a black box result, we will be able to attribute it to these various interventions. That is we will be able to say how much of the decline in cholera can be attributed to each of the interventions and their interaction. This will be useful for policy design.

3. Organization and Timing

The impact evaluation will be a joint effort of the Policy and Operations Evaluation Department of the Netherlands Ministry of Foreign Affairs (IOB), the Ministry of Water of Tanzania, the Amsterdam Institute for International Development (AIID) and the Tanzanian institute REPOA. IOB will be responsible for overall supervision and funding of the study. AIID is the main implementer of the study for which AIID has established collaboration with REPOA.

The major activity of the study will be the village-level data collection. This requires sophisticated quantitative and qualitative data collection techniques. A very substantial involvement of Tanzanian researchers and students is envisaged, both in the data collection and in the subsequent analysis.

The tentative planning of the study is as follows:
- May – June: study of existing data and documentation for first part of the study, preparatory activities for the field survey; recruitment of a sector-specialist;
- July-August: field survey (i.e. post harvest);
- October/November: assessment of institutional strategy;
- End of October: first draft of the study report, to be discussed in a workshop in November.

A reference group will be appointed for the impact evaluation. It will include three members who will also serve on reference groups for other impact evaluations of Netherlands support to the water supply and sanitation sector:
- a representative of the Netherlands Ministry of Foreign Affairs department for environment and water (Mr. J Bijlmer);
- a representative of the Netherlands Ministry's department of effectiveness and quality of development cooperation (Mr. P.Bastiaenen).

[6] Since the dependent variable has been conditioned on the Census variables care has to be taken with respect to the same interpretation of the estimated impact effects.

- and expert of the IRC International Water and Sanitation Centre (Ms. C.van Wijk-Sijbesma).
The reference group will also include two members who can offer specific expertise for this Tanzanian impact evaluation:
- a representative of the Ministry of Water of Tanzania (Mr. J.Mukumwa);
- a representative of the organisation Water Aid, Tanzania Office (Mr. D.de Waal).
This reference group will comment and advice on the main draft documents for the impact evaluation, notably the draft terms of reference for the studies, draft interim reports and the draft final reports.

The draft final Terms of Reference and report for the study of the programmes for Shinyanaga region will be shared with the Ministry of Water of Tanzania, for its concurrence. The final responsibility for these documents is with IOB.

Evaluation matrix

Annex

Objective-means	Indicators/ variables	Sources	Evaluation criteria

Input
Operationalisation of activities
	• Financial inputs
	• Technical and institutional strategies (with reference to policies):
	  o Types of technologies supported;
	  o Approaches to design, planning, delivery, M&E
	  o Attention for water user participation, gender issues
	  o Funding and cost recovery
	• Strategies to involve the poor / marginalized groups
	• Types of activities undertaken
		Policy documents
		Project documents
		Year plan/ report
		MIDAS/ Piramide	

Output Water and Sanitation systems Operational facilities Quality and quantity of water consumed Linkages between drinking water, sanitation, hygiene practices	• Use of appropriate technologies that can be managed or co-managed by users • Number and coverage of functioning water supply and sanitation facilities • Special provisions such as for bathing, washing, vegetable gardening • Functioning operation and maintenance arrangements • Functioning water management and support institutions with related registration and tenure arrangements • Hygiene awareness • Trend in costs per facility and litre of water • Trend in cost recovery	Regional water data base Project documentation Results of village level data collection Results of interviews of key players	
			Effectiveness

Outcome
Increase in number of beneficiaries of improved facilities
Increase in access (time, distance) to safe water
Increase in use of basic sanitation facilities
Improvement of hygiene practices
	• Technical sustainability of wells and hand pumps
	• Number of users/ beneficiaries (m/f) and purpose of use
	• Increase in water consumption
	• Quality of drinking water
	• Access to and use of sanitation facilities
	• Changes in hygiene practices
	• Inclusion/ exclusion of poor/ marginalised groups (m/f)
	• Functioning water user groups:
	  o Male/ female membership
	  o Frequency of meetings
	  o Assets
	  o Effectiveness in ensuring sustainable water supply
	  o Levels of conflict and conflict resolution
	• Trend in costs per capita
		National and local statistical data
		Regional Water data bank
		Results of village level data collection
		and interviews of key players	

			Relevance
Impact Health, gender equality and poverty impact	• Incidence of water and sanitation related diseases • Mortality • Gender equality: -time taken to collect water - girls' school enrolment and attendance	National and local statistical data Results of village level data collection	

	• Livelihood: economic activities, poverty reduction (m/f)		