Monitoring and evaluating a project's effectiveness

by Peter Tschumi

A community water supply and sanitation programme in northern Honduras developed an internal monitoring and evaluation system requiring no external support at no extra cost.

COMMUNITY WATER supply and sanitation projects are usually only monitored and evaluated in terms of 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, it is generally omitted because of its complexity, expense, additional the resources needed. But it is possible to evaluate a project's effectiveness without external support, and with no extra costs. The PROPAR (Proyecto de Pozos y Acueductos Rurales) moniand evaluation system (MES), based on objectively verifiable indicators, is run by the project's own personnel and improves project management. In addition, the MES supplies some information about the project's (health-) impact and is therefore an excellent basis upon which to make high-level decisions, for both the national policymakers and the external support agency.

PROPAR is a community water supply and sanitation programme in northern Honduras. Co-financed by the Honduran and Swiss governments (Directorate of Development Co-operation and Humanitarian Aid and the Swiss Development Co-operation (SDC), PROPAR is run by the Honduran Ministry of Health and is therefore completely integrated into its institutional structure. It supports the Ministry's strategy of rural primary health care using health promoters, and in addition to the project-specific activities (water supply, sanitation, and hygiene education), are also involved in child survival programmes like diarrhoeal disease control, immuno-preventable diseases (vac-

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cination), acute respiratory infection reduction, and others.

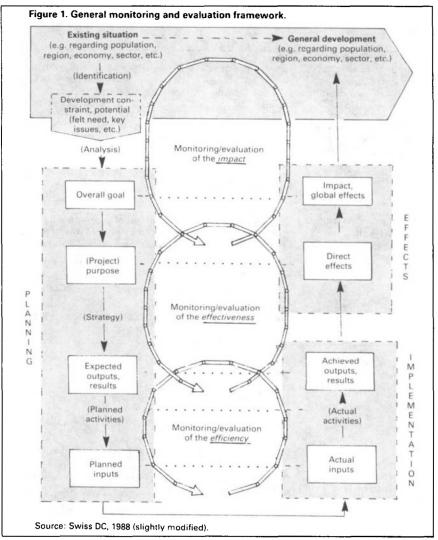
In view of this high institutional integration on the one hand, and the independent project management on the other, PROPAR created an additional internal instrument to measure not only the project's progress and efficiency, but also the project's effects (effectiveness) and its long-term improvements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

General framework

Proceeding from the monitoring and evaluation framework used by

the SDC (Figure 1), PROPAR decided to produce a monitoring and evaluation system for effectiveness, using some indicators of universal public health significance (health impact) for the following reasons:

- To monitor the project's efficiency, i.e. to control the efficient operation of activities by best use of the available inputs.
- O Experience shows that a sensible health impact evaluation requires complex study designs and extensive sample sizes to be statistically accurate, and therefore depends on external project support along with substantial extra costs.
- In contrast, the effectiveness of a project can be assessed through an adequate MES without the use of additional external resources. The MES may also be



	Objectively verifiable indicators	
Summary of objective	Criterion	Indicator
Overall goal: Target population's living standard improved	Overall health indica Cases of diarrhoea	htors: Diarrhoea cases attended of children < 5 years Total cases attended of children < 5 years
	Mortality rates	Total deaths of children < 5 years Total births (X 1000)
		Total deaths caused by diarrhoea of children < 5 years Total population < 5 years
Project purpose:	Indicators which she	ow the achievement of a successful
The provision of potable water and basic sanitation of target population improved	project purpose: Population coverage of	Total population served with well Total target population
	potable water and sanitation	Total population served with gravity-flow systems (GFS) Total target population
		Total population served with latrines Total target population
Results/outputs: 1. Beneficiaries made aware of health, sanitation and hygiene topics related to the use of water and environmental sanitation	Indicators, describin Extent of women's participation Extent of participa- tion in the opera- tion of the work	g the result/outputs: Extent of participation of women on the water committees Term of project completion
	Actual acceptance of latrines	Population covered in the programme area
2. Importance of potable water and sanitation recognized by authorities	Financial participa- tion of authorities in construction	Percentage of financial contribu- tions of mayors and politicians in the construction
3. Durable and adequate water and sanitation systems constructed	Quality of water	Number of faecal coliform organ- isms per 100ml (MPN index)
	Direct cost of the project to the institution (DCI)	DCI of the project per beneficiary
4. Programme of wells equipped with handpumps	Capacity to pro- mote and direct well projects	Percentage of promoters located in proper zones capable of promot- ing and directing well projects
	Quality of construc- tion of wells	Percentage of wells built properly
	Quality of installa- tion of pumps Use of wells	Percentage of pumps installed properly Percentage of constructed wells in
		use
5. Effective operation and maintenance achieved	Initial interest in wells of water committees	Ability to attain funding
	Training of water committees Fluctuation of com-	Water committees trained Percentage of members fluctuating
	mittee members Quality of mainte-	per year Percentage of wells functioning
	nance of wells	Number of tane in near condition
	Quality of mainte- nance of gravity flow systems	Number of taps in poor condition Availability of water at tap level State of maintenance of spring catchments and water tanks

used to improve the project management and to evaluate the project's sustainability.

Objectives and indicators

Using the ZOPP (GTZ's objectivesorientated project planning) method, PROPAR was reviewed in 1988 to prepare for the forthcoming project phase (1989-91). Constructed in different phases, the end product 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, given means of verification, and the important assumptions (external influences representing a risk for implementation).

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. Whereas 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 the qualitatively and quantitatively measurable changes in an existing situation, classified as subjectively valuable and objectively verifiable indicators, respectively.

The ZOPP method considers only objectively verifiable indicators to guarantee an independent and correct record of the indicators' measuring process. On this basis the PROPAR planning team identified indicators for all objective levels using the following procedure:

- search for a criterion to describe the development of a situation;
- formulate a precise indicator for the application of the criterion;
- define the absolute (limiting) values (goals) of the indicators;
- identify the means of verification.

The Synopsis of Objectives and Indicators, (Figure 2) gives some indicators on an overall level (cases of diarrhoea and infant/child mortality rates). These enable PROPAR to approximate the improvement in health status of the target group (health impact).

The majority of the indicators are related to project purpose and the result/output level however, and are therefore focused on measuring the effectiveness of PROPAR's performance.

According to the kind of objective, the indicators belong to different categories:

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

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

In view of the project's limited 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. The MES data is not, therefore, scientifically based, and the MES results show relative tendencies rather than absolute values.

Thus it is evident that the PROPAR MES is not a complete reflection of the project in reality, but 'It is better to be approximately right than precisely wrong'.

Results

The application of the MES in 1988, 1989 and 1990 made it possible not only to compare the results of the monitored information over the three 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.

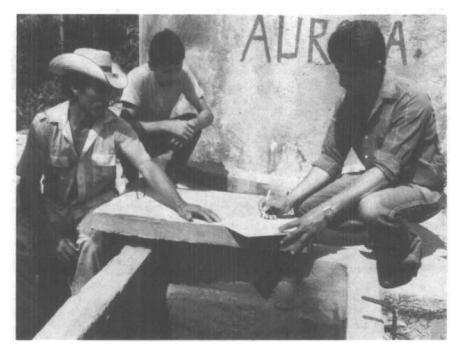
For example, the importance of potable water and sanitation as recognized by the authorities registered an improvement: the financial participation of mayors and other

Figure 3. An example of a form for the MES data gathering. PROPAR: MES RC-3F Functioning control of handpump (I.R.5.4.)/ Use of constructed wells (I.R.4.4.) / Fluctuation of members of water committees (I.R.5.3.) Fieldworker_ 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 Yes No No the bushing Upon lowering the handle, the lower part of Yes 🗆 No 🗆 the handle bumps the post B. Water leaks in base of the pump: There are no water leaks in the base of the Yes 🗆 No 🗆 pump? (Note: If there are no leaks in the base, mark Yes; and if there are leaks in the base, mark No.) C. Volume of water: Number of pumping strokes needed to fill a 3.4 gallon bucket (bucket measurements: height 26cm, lower diameter 21.5cm, upper diameter 28.5cm) ☐ fewer than 35 ☐ 35-45 ☐ more than 45 Yes No 🗆 ≤ 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 at least 5 minutes in the tubes Yes 🗆 No 🗆 (Procedure: pump - wait 5 minutes without touching pump pump again: the water has to flow immediately) - The well is in use? (independent of its No 🗆 condition) Concerning the water committee: How many members have changed in the past year? Number: _

politicians in the construction increased, because of the project's public relations efforts over the three years.

In contrast to this, the well programme and the activities in operation and maintenance in 1989 and 1990 were slightly less effective than in 1988. The disappointing results can be explained in part by a decrease in the morale of the project personnel because of delays in their salary payments. Because of this inconvenience, Honduran government employees concentrated their efforts on essential activities which, in the case of PROPAR, meant that the promoters tended

to uphold the performance in the construction activities. Less important (in their opinion) responsibilities such as hygiene education or the operation and maintenance programme were neglected. More specifically, the shallow-well project in the lowlands suffered from poor groundwater conditions because of floods and high concentrations of iron and manganese oxide, as well as socio-economic problems stemming from the national economic crisis. Because of the people's former high living standards, a simple handpump often represents a lowerclass water system, even if currently



A health promotor gathers MES data from the field.

they can only afford to pay for the operation and maintenance of such a handpump.

Evaluation

The objectively verifiable indicators can be very valuable for the project, but as they provide only absolute numbers, there is the risk of them being wrongly interpreted by people unfamiliar with the project. This recorded data helps the project managers to understand the project's progress in more detail, especially the effectiveness of its output. More importantly, it supplies the necessary information, prepared in an objective and comprehensive manner, for a discussion and analysis at fieldworker level.

For this purpose, PROPAR organizes annual evaluation meetings with the project management, all fieldworkers, the administration, and people indirectly involved in the project such as executives from the Ministry of Health and the 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 fieldworkers 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 interpreting the effects indicated by the processed MES information.

The annual data gathering by means of specially created forms (Figure 3) has intensified and improved the field supervision. These forms, recording objectively verifiable information only, assist supervisors by indicating deficiencies in field work. For their part fieldworkers participate directly by completing the forms and therefore undergoing a self-evaluation. This also increases their identification with the MES, which is an essential pre-condition for the successful implementation of an MES and vital

if it is to become an integral part of the project management.

The Ministry of Health and the SDC headquarters also have an interest in information about the project's effects, its effectiveness, and its impact. This is where basic decisions are made concerning important events within a project, such as the preparation of a new phase or a fundamental change in the project objectives.

The PROPAR monitoring and evaluation system has become a very helpful instrument for refining the project management. It makes decision-making for all project personnel easier and improves, through its objective monitoring process, the willingness and capacity of project personnel for selfevaluation and self-criticism. In addition, it supplies national sector policymakers and external support agencies with information for highlevel executive decisions. As for PROPAR's future, its own MES will help to determine, at the end of 1991, if and how PROPAR will continue.

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Two promoters collate data for the annual analysis and group discussion.