

Part II. Building successful WUAs

Module 7: Monitoring and Evaluation and Capacity Building

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Unit 1: Monitoring and Evaluation of PIM national Programmes

Part I: Monitoring and Evaluation of PIM national Programmes

Monitoring and evaluation of PIM national programs

PIM plans are like working hypotheses which need to be tested and modified in practice.

The M&E system is part of the PIM programme and essentially tries to provide information on how efficiently the program is executed.

The design of a M&E system for a PIM program is specific of the country where it is executed.

M&E systems for national PIM programmes

PIM programmes are often not well defined in terms of targets or objectives. Therefore the first exercise is to try to define the objectives of the programme in the concerned country. Some common objectives are:

1. Create and **develop WUAs**
2. Provide essential rights and authority to WUAs
3. Improve physical infrastructure
4. Improve the management of irrigation systems
5. Reorientation of the irrigation agency or Ministry
6. Reduce the cost of irrigation for the Government
7. Improve the Operation and Maintenance of irrigation systems

M&E systems for national PIM programs

- The achievement of any of the former objective is normally made of a large number of expected **results**.
- For each result indicators can be developed to measure the progress made in their achievement. Therefore the total number of indicators for a PIM national programme can be large but they can be **grouped** by objectives.
- Because of the large number of irrigation systems involved and farmers, sampling is often required

Example of national survey made in Mexico to assess farmers opinion about the services received after transfer

Topic	%
<i>1. Water management</i>	
Water distribution improved	84
Volume of water satisfactory	79
Water received timely	79
Water measured satisfactorily	64
<i>2. Water tariff</i>	
Tariff considered expensive	45

Example of national survey made in Mexico to assess farmers opinion about the services received after transfer

<i>3. Maintenance</i>	
Maintenance improved	82
Rehabilitation needed	83
Users willing to contribute to rehabilitation	82
<i>4. Farm level</i>	
Evidence of salinity	34
Desires to improve irrigation system	85
<i>5. Farmers income</i>	
Annual income negative	12
Annual income greater than > 3000 \$	60

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Unit 2: Evaluating the performance of WUAs

Past experiences in evaluating the performance at project level

In the course of the last 20 years research institutions and other international organizations have contributed considerably to this area of knowledge by developing performance indicators that should permit a comparison of the performance among projects.

Although the theory for the application of performance indicators has been fully developed their practical application remains limited.

Why the evaluation of performance of irrigation projects remains of limited use?

- Most of the performance evaluation systems were developed for comparative purposes
- Any monitoring system requires the compilation of considerable information and this always has a cost
- Managers often see monitoring systems as a tool aimed at evaluating their own performance
- It is difficult that any monitoring system may be satisfactory for all types of irrigation systems

Applying multi-purpose M&E to WUAs

Most of the managers of WUAs have a sense of the tasks to be done but rarely he or she defines the objectives and results to be achieved.

We have to assume that certain objectives and results are desirable but in each WUA **MUST** establish its own objectives.

Examples of desirable objectives for the Water Distribution Service

Purpose: to satisfy farmers demand for water within the physical limitations of the irrigation system

Objectives

1. Reducing the losses of the irrigation system.
2. Satisfying crop irrigation requirements.
3. Distribute the water timely
4. Provide the water allocation as accurately as possible or measure the water delivered accurately
5. Maximize the area under irrigation
6. Monitor evolution of cropping pattern

Desirable objectives for the maintenance of the system

Purpose: To ensure the functionality of the system to provide a satisfactory operation service.

Objectives:

1. Ensure that enough financial resources are allocated to undertake a maintenance programme
2. To ensure that the planned and emergency repairs are executed.
3. Keep maintenance costs as low as possible but ensuring durability of the repairs made.

3. Desirable objectives for the financial management

Purpose: to provide a transparent and cost effective service on the use of the financial resources of the system.

Objectives

1. To ensure that sufficient resources are allocated for proper operation, maintenance and administration of the irrigation system.
2. To achieve 100% of fee collection

4. Other desirable objectives for the WUAs, indicators and targets

- Other objectives are related to the management of staff, environmental preservation and agricultural productivity. As earlier indicated the Management Committee should define the objectives to be achieved in each of this area of activity.
- Once **the objectives are defined** the corresponding **indicators should be developed**. In the next page some possible indicators with regard to the water distribution are presented.
- Once the indicators are defined the management of the WUA should define **the targets to be reached** and the data to be collected in order to monitor their achievement.

1. System operation objectives and related indicators

Objective	Indicators related to the objective	Observations
1.1.Reducing the losses of the irrigation system	1.1.1) Total losses = $\frac{\text{Total volume of water supply at the head of the system} - \text{Total volume of water delivered at farms}}{\text{Total volume of water supply at the head of the system}}$	
	1.1.2) Overall Efficiency of the distribution system= $1 - \frac{\text{Water losses}}{\text{Total volume of water supplied}}$	It can be referred to sectors, sections
1. 2. Satisfying 100 % of crop irrigation requirements	1.2.1) Relative irrigation supply = $\frac{\text{Irrigation water delivered at farm} \times \text{farm efficiency}}{\text{net irrigation requirements}}$	
	1.2.2) Adequacy of irrigation system to satisfy maximum demand $\frac{\text{Canal capacity}}{\text{Peak Irrigation demand}}$	It refers mainly to open canal systems

1. System operation objectives and related indicators(2)

1.3. Distribute the water timely	<p>1.3.1. Suitability of irrigation scheduling =</p> $\frac{\text{Number of irrigations given per main crops}}{\text{Number of irrigations required per main crops}}$
1.4. Measure the water delivered accurately	<p>1.4.1. Total yearly volume of water delivered at farm level (m³/ha)=</p> $\frac{\text{Total volume of water delivered in the sector} \times \text{efficiency}}{\text{Total irrigated area in the sector}}$
	<p>1.4.2. Average yearly needs of irrigation water at farm level (m³/ha)=</p> $\frac{\text{Sum of yearly Irrigation crop requirements}}{\text{Area of crops grown in the sector}}$

Quality of the services provided by the WUA

Most of the data required for the indicators presented in former slides can be collected from the day to day operation of the WUA.

However, if the farmers point of view is desired about the quality of services received there is no other alternative that to undertake a representative survey among the farmers. In most cases this will have to be done with a statistically representative sample (as in the example from Mexico)

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Unit 3: Human resources development.
Assessing training needs

Human resources development (HRD) in PIM

- Human resources development is the main component of any PIM programme. It represents an important cost but even more important the activities must be well structured and have clear objectives.
- Many activities can be included under HRD, such as training, country information visits, professional upgrades by specialized courses, technical visits, internships in other institutions, communication and dissemination programmes and several others.
- Unfortunately HRD does not receive the necessary attention in many PIM programmes.

Training programmes in PIM

- Training programmes are the larger component of HRD activities.
- In PIM, many type of training courses and activities are required. The main ones are:
 1. Training of the staff (government agencies) that will promote the PIM programme
 2. Training of the trainers that will train the members of the Constituent Committees.
 3. Training on responsibilities and functions of the Management Committees.
 4. Training of the WUAs staff in technical aspects of the Operation, maintenance, administration and management.
 5. Training of water users

The cost of training

Little information is available about the cost of training in PIM programmes but even when available they are rarely comparable since they cover many different aspects.

Nevertheless the order of magnitude of the institutional component in some projects financed by the WB is given below:

- Mexico: 6,0 \$/ha
- Peru: 200,0 \$/ha
- Bosnia& Herzegovina: 150,0 \$/ha

Methods of training

It is very important to ensure the uniformity of messages. For this reason the “**training of trainers**” that will train the final participants is fundamental.

For the training of staff of WUAs the most effective method in the **in- service training**. (the trainer trains on the day to days task of the trainee.

On-line training has not been used much due to the lack of access of end–users to computer facilities.

Walk –through the physical facilities of irrigation system is very useful to make farmers understand some of the operation and maintenance problems

Assessing the training needs

- Too many training programmes are carried out without knowing the training needs of the beneficiaries of the training activities.
- A proper assessment of the needs of the target groups is essential to draw the programme of the training activities.
- Use of questionnaires is highly appropriate for assessing the training needs. When the target group is very large, representative samples should be used

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Unit 4: Trade- offs between services to be provided to WUAs and training programmes

Trades- off between provision of services and training (1)

- The critical issue in defining training programmes within PIM context is to decide which services will be provided by external persons (water services providers) and which will be undertaken by the members of the WUAs.
- For instance, if the maintenance is going to be undertaken mostly by external contractors the need for training staff of the WUAs will decrease much and change on the type of training needed.
- The size of the WUA has much importance in this decision. It is obvious that small WUAs have little economic capacity to hire external services and therefore they need much more training

Trades- off between provision of services and training (2)

- It is very important to define what services will be provided by the WUA and correlate the training programme with the services to be carried out.
- External services commonly provided to WUAs , and to any other farmer, include: technical assistance, agricultural markets information, agricultural credit facilities, and few others.
- Adding other services related to agricultural production like: provision of agricultural inputs (fertilizers, seeds,etc), common use of agriculture machinery, processing of agricultural products, marketing have the characteristic that not all farmers of the WUA may be interested in them. Therefore the corresponding training should be selective.

**Thank you again for your attention and
interest!**