

Module 3 - Supervision and Monitoring of Minor Irrigation Project

Topics

Supervision & monitoring of MI scheme during construction and post construction period

Objective

To enable WUA and Monitoring Sub-committee understand their role in participatory irrigation management and equip them with appropriate tool to monitor the procedure.

Expected out put

- Ability to assess institutional functioning of WUA in a participatory role
- Role clarity of sub committees
- Construction work is appropriately supervised by WUA
- Installation work is appropriately supervised by WUA
- Quality of work is maintained
- Gained skill to facilitate WUA self assessment exercise for each crop season with WUA members

No of sessions

- Six

Time required

- 3 days

Material required

- LCD
- Chart paper
- Sketch pens
- Cello tape
- Scissors
- Flip charts
- WUA self assessment posters

Participants

- Members of Management committee, Water management sub-committee, Monitoring sub committee

Methodologies Used.

- Games
- Group exercises
- Presentations
- Interactive Lecture Methods with ppt
- Case studies
- Question and Answer

Session wise plan

Session No.1

Topic: Importance of Sub committees, its formation and functions

Objectives: To make the participants comprehend on importance of sub committees and its functions.

Content

- Sub committees and its types
- Constitution of sub committees
- Membership and members in sub committees
- Records to be maintained by Sub committees

Method: Storytelling and interactive lecture

Time: 60 Minutes

Resource Person: SO/DPMU/ WRIDD staff

Support Material: Chart paper, sketch pen set, training manual

Tips for Trainer: Explain the situation of a Railway Station where different people perform their roles in a systematic order and coordination among them to see the train traffic moves without any problem. Tell them if section or people of the section fail to perform, what may happen. Brainstorm to assess such a situation - correlate the same to the roles of subcommittee. Explain the subcommittee roles and responsibilities with the help of the flip charts.

Session No.2

Topic: General design and layout of the scheme

Method: Lecture with ppt

Time: 30 minutes

Resource Person: DPMU/ WRIDD staff

Support Material: LCD, audio visual, flip chart, chart paper, sketch pens, cello tape

Tips for Trainer: Explain the design & layout of the scheme through flip charts/ diagram. Conclude the session after clarifying participants' doubts.

Session No.3

Topic: Roles & responsibility of WUA & WRIDD in construction of minor irrigation scheme,

Method: Interactive lecture method

Time: 60 minutes

Resource Person: SO/DPMU/ WRIDD staff

Support Material: Flip chart, training manual

Tips for Trainer: Make a check list of activities during construction by asking participants and supplementing them. Show the flip charts and explain their and WRIDD's roles during construction work.

Session No.4

Topic: Understanding roles during post construction phase - understanding the source of water of Minor Irrigation Scheme, water and soil quality, water requirement of major crops and critical stages of irrigation, water management, water efficiency.

Method: Interactive lecture

Time: 90 minutes

Resource Person: SO/DPMU experts, staff of agriculture deptt.

Support Material: Chart paper, sketch pens, cello tape, training manual

Tips for Trainer: Begin discussion on status of source of water for the scheme, water and soil quality, ask the participants about water requirement quantity for major crops, ask them to think about the water use efficiency systems and what should be done. Go on asking till getting full information. Note down the information point wise, categorically. Consolidate them, add left over and explain the role of subcommittee in this respect writing on chart paper. Finally give conclusions and close the session.

Session No.5

Topic: Participatory monitoring- monitoring irrigated area, produce, resource development, savings in water usage, conflict resolution

Method: Games, Group discussion, Interactive Lecture Methods, Case studies, Mock exercise

Time: 60 minutes

Resource Person: SO/DPMU staff

Support Material: Chart paper, sketch pens, cello tape, WUA self rating format

Tips for Trainer: Session can be initiated through interaction with the participants, on the following issues: 1. When crops yields are harvested, how do you analyze that, have you good yield or not. Then they will respond, like that your WUA will also be compared with certain criteria. 2. Ask question to the participants, what are the parameters for good WUA? Then they will tell some parameters. In similar lines all the 10 parameters mentioned in the formats will be developed to know the functioning status. Then explain about all the 10 parameters. 3. Ask question to the participants, how you measure them. Then they will give suggestions. Like that here also we have given measurement indicators to measure. 4. Ask them to do the exercise, imagining that this is their WUA. Ask one person/volunteer for conducting this exercise. Volunteer will facilitate the process by asking question to the members. 5. Sum up the session by clarifying their doubts. Let them count marks scored on each parameter, like wise for all the parameters they have to calculate the total. Total number of parameters and number of marks scored. For each parameter which grade they will give, let them give grade. Trainer has to involve the participants in grading of the WUA and grade wise what are the findings.

Session No.6

Topic: Conflict management

Method: Case analysis

Time: 60 minutes

Resource Person: SO/DPMU experts

Support Material: Chart paper, sketch pen, cases written on paper, Training manual

Tips for Trainer: Divide the participants in groups, give one case, printed on papers and ask one of the group members to read that. Then discuss among the groups about the case and possible solution. After that, ask the groups to share the solution with other groups. Trainer should sum up after cross discussion are over. Similar case analysis can be done with few more cases.

Content

- Role of Sub Committees – Reference: Manual of Module 2
- Role of WUA during construction – Reference: Manual of Module 4
- Water Requirement of Important Agricultural Crops & related management planning

Sl.No.	Crops	Water Requirement (mm)
1	Direct Seeded Rice	1000
2	Transplanted Kharif Paddy	1100
3	Boro Paddy	1200-1600
4	Jute	450
5	Wheat	300
6	Mustard	250-300
7	Gram, Lentil etc.	250
8	Potato	500
9	Maize	450
10	Sugarcane	1600

Planning for better Management

1. Crop Rotation with alternate shallow and deep rooted crops,
2. Inclusion of Pulse and other leguminous crops in the cropping sequence for cover cropping, low and high water requiring crops in one Year and discarding the mono crop sequence of Rice-Rice etc.
3. Intercropping high and low covering crops and crops with different root zones.
4. Application of sufficient amount of recommended organic manure through FYM, Vermicompost, Green Manure and Green Leaf Manure, Azolla etc.
5. Reduction of conveyance, application and other losses.

Critical Stages of Irrigation for important crops

- a) Rice: 2-5 cm standing water or moist soil gives equal yield. 40-50% reduced water requirement under “SRI” method of Rice cultivation. From Panicle Initiation stage to fertilization stage, if any water stress is developed, it will directly affect the yield of rice.

- b) Wheat: Five Critical growth stages are there and any water stress at these stages will directly affect the yield. The stages are:
- i) Crown Root Initiation Stage
 - ii) Tillering
 - iii) Flowering
 - iv) Milk stage
 - v) Dough Stage
- c) Mustard: At 25-30 days interval irrigation to be given each with 70-75 mm. Critical stages are flowering and fruiting
- d) Potato: At 8-10 days interval, each time with 40-45 mm irrigation,
- e) Jute: 50-60 mm at each time and at 15-20 days interval,
- f) Gram & Pea: 70-75 mm at each irrigation and at 25 days interval.
- g) Maize: At 15-20 days interval and 50-60 mm irrigation at each irrigation.

Use of Bio Fertilizer and Pesticide

1. Ensure use of Bio fertilizer and pesticide as much as possible for agriculture. This will enhance soil fertility and production. Resultantly, agricultural produce will be more healthy and safe for the human beings.
2. The crops as well as environment, free from residual chemical or synthetic pesticides will ensure sustainable development.
3. Under the WBADMIP use of chemical or synthetic pesticide, especially WHO listed Class 1 and Class 2 pesticides is prohibited. And it is expected that other area will follow the same practice of WBADMIP.

Participatory Monitoring

General Concept

1. What is Self Monitoring?

Monitoring is to conduct an assessment of the current status by comparing the current status to the previous one. If members of WUA themselves do that assessment for their own performance then it is self - assessment.

2. Why do we need Self Monitoring?

- To understand one's own current status
- To identify present weaknesses and problems
- To make an appropriate plan
- To implement the plan properly

3. What is the procedure of Monitoring?

- Identification of monitoring indicators
- Based on the indicators developing a format
- Filling up the format in the WUA meeting through discussion with the members and examining the records / registers maintained by the WUA
- Identification of the weaknesses and the shortfalls as per the filled up formats
- Taking up correction measures through discussion in the WUA meeting

Before starting Self Rating exerciseEnsure presence and participation of all the members during the exercises

4. Key points to be kept in mind during Self Rating

- The group should have proposed representations of Head, Middle & Tail end farmers
- Farmers to be encouraged for participation with probing questions. View of all farmers in the group taken and getting consensus information to be filled by the WUA members.
- Marks should be written in the column or put colour on the chart by a bindi
- Final writing on the chart to be done after completing the discussions.

WUA Self Rating Format (to monitor identified sub project output and outcome indicators)

Type of Distribution system_____

Discharge capacity of main irrigation channel (Litres)_____

SI No.	Monitoring Parameters	Category	Poor	Average	Good	Excellent
		Tot. Weightage	Marks-1	Marks-2	Marks-3	Marks-5
I	Membership & Participation:	30				
1	% of female members in WUA managing committee	5	0	Less than 1/3 of tot. mem.	1/3 of tot.mem.	More than 1/3 of tot. mem.
Put ✓ in appropriate cell						
2.	% of tribal out of total tribal members in managing committee	5	0	Less than 30%	30-50%	More than 50%
Put ✓ in appropriate cell						
3.	No. of Management Committee meeting held in last year	5	< 6	6-8	9-11	12 or more
Put ✓ in appropriate cell						
4.	Average attendance of women members in Management Committee meeting	5	0	Less than 50% of tot. women members in mang. Comm..	50% - 70% of tot. women members mang. Comm..	More than 70% of tot. women members mang. Comm..
Put ✓ in appropriate cell						
5.	No. of General Body meeting held in last year & average attendance of WUA members in the meetings	5	0	1 & less than 50% of tot. members	1 & 50% & more of tot. members	2 & more than 30% of tot. members
Put ✓ in appropriate cell						
6.	Average attendance of women members of WUA out of total women members in the general body meetings	5	0	Less than 50%	50% - 70%	More than 70%
Put ✓ in appropriate cell						
	Marks obtained					

	Recommendation					
II 7.	Transparency: Detail knowledge about the schemes	5	Members do not know	Only Chairman/ President knows	Only Management committee knows	Information abt. Expenditure, fund amount, meeting schedule are displayed on a fixed wall, so, everybody knows
Put ✓ in appropriate cell						
	Marks obtained					
	Recommendation					
III	Performance:	25				
8.	Water use efficiency (based on crop standard requirement)	5	More than requirement	As per requirement	Upto 10% less than requirement	More than 10% to 20% less than requirement
Put ✓ in appropriate cell						
9.	% area turned double cropped or multiple cropped	5	25%	>25%-50%	>50%-85%	>85%
Put ✓ in appropriate cell						
10.	% of water charge collected	5	<50% of demand	51%-70%	71%-95%	>95%
Put ✓ in appropriate cell						
11.	% of water charge used for creation of extra resources	5	0	20%	21%-50%	>50%
Put ✓ in appropriate cell						
12.	Self rating done after last harvesting season	5	Not aware, not done	Aware not done	Aware, no recommendation followed	Aware, recommendation followed
Put ✓ in appropriate cell						
	Marks obtained					
	Recommendation					
IV	Self Management:	5				

13.	Maintenance of Up to Date records :	5	No records maintained	Records maintained occasionally, whenever anyone can get the time to write	Records maintained but not updated, President/ secretary writes whenever gets time	Records maintained and updated, a person hired from outside to maintain/ learned members has given the responsibility
Put ✓ in appropriate cell						
	Marks obtained					
	Recommendation					
V	Water release	5				
14.	Water release schedule	5	No plan prepared & farmers are not aware about water release schedule	Plan prepared & 50% of the plan has been followed	Schedule is made known to all members & followed within 15% variation	Schedule is made known to all members & followed regularly
Put ✓ in appropriate cell						
	Marks obtained					
	Recommendation					
VI	Water Distribution	10				
15.	System of distribution of water(quantity & time) to the users	5	Continuous flow as per water availability	Informal arrangements for water distribution	Datewise schedule prepared and followed occasionally	Datewise schedule prepared and followed regularly
Put ✓ in appropriate cell						
16.	Tail end issues & adequacy of water received by the tail ends	5	Less than 50% of identified Tailend area receive inadequate or no water	51-75% identified Tailend area received adequate water	76-90% of identified Tailend areas received adequate water	91% and more of identified Tailend areas received adequate water
Put ✓ in appropriate cell						
	Marks obtained					

	Recommendation					
VII	Estimation of water charge	5				
17.	How water charge is being estimated	5	Users not aware	SO/DPMU done	Assessment done by SO/DPMU/deptt. Before harvest & users are made aware	Joint assessment done by SO/DPMU/deptt. & WUA before harvest and the charge is determined
Put ✓ in appropriate cell						
	Marks obtained					
	Recommendation					
VIII	Maintenance	5				
18.			No Maintenance plan prepared and no work done	No Maintenance plan prepared but works done by members	SO / DPMU prepared maintenance plan and accordingly work done by members thro' WUA fund	WUA prepared maintenance plan and completed works before season
Put ✓ in appropriate cell						
	Marks obtained					
	Recommendation					
IX	Conflict Management	5				
19.			Conflict exists, no specific action taken for mitigation	Conflict exists, discussed in WUA, not resolved	Members, representative s of gram panchayat discussed jointly and tried to resolve, partially resolved	Managing committee, WUA repeatedly discuss and resolve the issues
Put ✓ in appropriate cell						
X	New Technology adoption	5				
20.	% of Water users out of total members adopting improved techniques (like SRI, GAP etc.) which were demonstrated	5	None	Less than 50%	50%	More than 50%
Put ✓ in appropriate cell						

	Marks obtained					
	Recommendation					
	Consolidated Grade	100				
	Score					

***Recommendation: If training or handholding support is required please write, else can leave the cell.**

On the basis of the score of self rating, the overall performance of WUA will be graded.

Sl. No.	Criteria for grading of the WUA		Weightage	Marks scored	Grade
I	Membership & participation, transparency		35		
	>23	A+			
	19-23	A			
	16-18	B			
	12-15	C			
	<12	D			
II	Performance, estimation of water charge, maintenance		35		
	>23	A+			
	19-23	A			
	16-18	B			
	12-15	C			
	<12	D			
III	Self Management, water release, water distribution, conflict management		25		
	>19	A+			
	15-19	A			
	13-14	B			
	10-12	C			
	<10	D			
IV	New Technology adoption		5		
	1	A+			
	2	A			
	3	B			
	4	C			
	5	D			
	Consolidated Grade		100		

Conflict Resolution

1. Why conflict takes place?

A conflict emerges when personal interest is put into stake. Conflicting situation also arises if one tries to dominate others.

Absence of transparency in the activities of the association creates misunderstandings among the WUA members which ignites disputes / conflicts.

2. What are the consequences of conflicts / disputes?

The actual work gets interrupted due to conflict / dispute. As a result the purpose of that work could not be served. In addition, the impact of a conflict can be larger and can destroy overall peace and order. The conflicts on distribution of irrigation water can spread larger excitement in the whole village.

Possible Incidences of conflict in WUA

1. The power is disconnected as Electric polls fell down in sudden storm or transformer burnt in some natural calamity. Distribution water to field is discontinued. In some plots water could not be supplied as per requirement.

Cultivation has to suffer if irrigation is not done on time. Lot of money has been invested for the cultivation. If water can be supplied before the disaster, the farmers can spare this situation, raising this issue hassle started among some of the farmers.

How will you resolve the dispute?

2. Motor is burnt out in accident, may be for someone's carelessness. It will take time to replace it. The supply of irrigation water is in trouble. Members started blaming each other.

What to do? How you address the situation?

3. There is leakage due to rupture of pipe, the water is going off. Plots away from the leakage point are not getting water properly. Instead supply of water is more than requirement in some of the plots. Those plot owners are not interested in the repairing the pipe. Contentious situation has been created.

What to do? How you address the situation?

4. Regular meeting of the Committee does not hold. If holds, then also income and expenditure has not been up dated or calculated regularly in the meeting. One or two persons - the President and the Secretary of the Committee decide about the expenditure. Many members of the association have complained of high expenditure. But all is not ready to accept that. As a result discontent among the members is the growing.

What to do? How you address the situation?

3. It is observed that many a time tailenders do get sufficient water, although they always pay water charge on time and sometimes in advance. They reported that incident to the Chairman/ Secretary of WUA. Have not find any solution till date. On the contrary, conflict among the members began.

What to do? How you address the situation?

4. The landowner whose land size is maximum in the command area of the scheme has donated land to construct the pump house. He understands accounts well. All has selected him as president/ chairman. He gets priority getting water to his plots. It appears that he himself takes all decision for the WUA without consulting any one, does not pay heed to other's opinion. As a result lots of disputes exist in quantity of water supplied and water service charges collected. Not all members are agreeing to abide by the decision imposed by the Chairman. Dissatisfaction among the members of the association is increasing.

What to do? How you address the situation?

5. Committee members have a wide range of political beliefs. The influence of the political leaders of the society is creating fraction among the members. Leaders of WUA are showing partiality in distributing water to the members under the pressure of political leaders. Operator is supplying water in against the norms of the WUA. Rest of the members got excited to hear that.

What to do? How you address the situation?

6. The landowners in the command area have family relation. They are not in good terms. The tension of that family hassle is also reflecting in association.

What to do? How you address the situation?

7. The canal adjacent to the village is the source of irrigation scheme. Water user associations have been formed. Again, entire village is using the water of that canal for domestic purposes. A rich farmer, having land outside the command area is lifting water from the canal through his pump setting at the upper location of the canal. Members of the association cannot lift enough water. As a result tension is emerging in the village.

What to do? How you address the situation?

8. One of the farmers is cultivating *Boro*. Another farmer, beside that plot cultivated onions and other crops on during *Rabi*. Substantial water is needed for *Boro*. That water

is dripping into the adjacent plot, damaging *Rabi* crop. Discontent has been created between them.

What to do? How you address the situation?

Few more incidences which are likely to bring conflict:

9. Paddy is cultivated in the plot adjacent to main street. But, potatoes are not being harvested in the inner land yet. It is difficult to transport the potato in tractor.
10. Pressure of the wheel of tractor or the plough has caused leakage in the water distribution pipe.
11. Although, water charge is not in due for the tailenders, they are not provided water. The nearer plots are getting water in normal way, without any effort, although they have not paid water charge.
12. A pond is excavated beside the pipeline which causes breaking of pipelines.
13. Repairing or installation work of pipeline is being hindered due to a construction on the pipeline.
14. Someone is taking water by shattering the pipe.

3. What may be the ways to resolve conflicts?

First, the genesis of the conflict should be identified. It implies..

- Who are at the center of the conflict
- From which event or incident the conflict has emerged
- What is the reason of the conflict
- How the conflict is being manifested

Second, the basis of the conflicts has to be understood well and discussed upon together.

Types of conflict	Origins & reasons of conflict	Necessary measures
1. Conflict of interest between two parties	Difference in individual demand / necessity	Common demands and needs to be identified. Discussion should emphasize on protecting the common interests and finding the genuine significance behind protecting the same.
2. Conflict due to incomplete information	Due to incomplete information, interpretation of any information varies from person to person, creating	Ensure dissemination of complete and correct information to every member. Opinion of every member

	misunderstanding.	should be respected while taking any decision.
3. Conflict in relationship	Difference of behavior, belief, mindset and attitude has created conflict in relationship before.	Both should identify the problems and issues of the conflict. Constructive thinking should be encouraged to mend up the relationship. Accordingly, some general norms should be introduced in the functioning system .