

# **Andhra Pradesh Community Based Tank Management Project**

## **OPERATIONAL MANUAL**

**Volume – II of VI**

**Support Organization Manual**



**28<sup>th</sup> February, 2007**

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**Irrigation & CAD Department**

**Government of Andhra Pradesh**  
Government of Andhra Pradesh

**OPERATIONAL MANUALS**

<b>VOLUME</b>	<b>I</b>	<b>WUA OPERATIONAL MANUAL</b>
	<b>II</b>	<b>SUPPORT ORGANIZATION MANUAL</b>
	<b>III</b>	<b>FINANCIAL MANUAL</b>
	<b>IV</b>	<b>PROCUREMENT MANUAL</b>
	<b>V</b>	<b>TECHNICAL MANUAL</b>
	<b>VI</b>	<b>QUALITY CONTROL MANUAL</b>

## Foreword

The Government of Andhra Pradesh has initiated the process of providing substantive and enabling role to farmers benefiting from irrigation projects for management, operation and maintenance of the irrigation infrastructure by enacting the APFMIS Act, 1997. Following this, I&CAD Department has carried out minimum rehabilitation of the M.I tanks through Water User Associations. Performance evaluation of the WUAs highlighted the need for investment in institution building to enable WUAs to take up irrigation system management responsibilities. This has now been initiated in the I&CAD Department as part of the ongoing sector reforms process under the flagship of “Jalayagnam” programme of Government of Andhra Pradesh in tune with the Mid-Term Appraisal of the X Plan and observation of the Sub-Group on Agriculture and Irrigation of the National Development Council.

I&CAD Department is already implementing a project on “Repair, Renovation and Restoration of water bodies directly linked to Agriculture” with assistance from Government of India in the districts of Ananthapur and Mahaboobnagar. I&CAD Department has developed a step-by-step process guideline towards scaling up of the above programme to benefit 2.5 lakh ha under 3000 tanks at an estimated cost of Rs. 1000 crores with financial assistance from the World Bank and the Government of India under the **AP Community Based Tank Management Project**. This restoration work is proposed to be undertaken in three batches over a period of next five years.

The Project Implementation Plan has been prepared to act as a guiding document, describing the activities of the project on spatial and temporal scale. In addition, a set of six Operational Manuals on various components has also been prepared to steer the project stakeholders in effective implementation of the project. Present volume is one of the series of these six manuals. Though sufficient care is taken to avoid any contradiction with the existing provisions, however in cases of any ambiguity or contradiction, the existing statutes and government orders would prevail. We welcome any suggestions for further modifications and improvement.

**Commissioner,**  
Irrigation & CAD Department  
Government of Andhra Pradesh

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# 1. INTRODUCTION

## 1.1 Purpose of the manual

The purpose of the manual is to provide guidance to Support Organization (SO) and its team, in implementing the project as per the project guidelines. To facilitate planning & implementing different activities of the project, the manual gives detailed operational guidelines, process involved and provides necessary formats for making plans. The Water Users Association (WUA) Operational Manual may be referred to know about the project, its objectives, components and implementation arrangement.

## 1.2 Types of SO

A SO should be registered under societies Act and should have a working experience of not less than 3 years from the date of registration. These organizations should have demonstrated experience in rural development. They mobilize funds not only from public donations but also from government agencies like GOI, GOAP, CAPART, Dept of Rural Development etc. For the purpose of this project, the following institutions will be considered as SOs:

- Non Governmental Organization (NGOs)
- Federated Bodies (VO & MMS) Empowered by SERP
- Professional Agencies (KVKs, FTCs, etc.)

## 1.3 Role of the SO

The role of the SO is to facilitate the implementation process at WUA level. The implementation period is right from the awareness generation to completion of the project and preparation of completion report. The duration of the project at the tank level is 30 months and it is divided into 4 stages. The scope of work of the SO are:

Effective mobilization of all the tank stakeholders to participate in the activities of the WUA  
Institution development of the WUA for effective organizational and financial self management  
Capacity development of the WUA in effectively performing their roles in:

- Facilitating collection of water charges
- O&M of tank system
- Water auditing and water sharing
- Promoting agricultural growth and tank based livelihoods
- Effective participation of the WUA in planning, implementation and monitoring of the project

The specific tasks to be performed by the SO in various stages of the tank level project activities

## 1.4 Expected capacities of SO

The important function of SO is to facilitate WUA in planning, implementation and post implementation of the project. For this, the SO should have following capacities/skills:

- to motivate and build the capacities of farmers in strengthening of their institutions and mustering farmers' participation in the project
- to assess training needs & organize training using suitable methods
- to communicate between WUA and District Project Unit (DPU)
- to provide services effectively to its various, stakeholders, of the tank system
- to plan and implement activities related to tank restoration and management
- to report operations to the DPU.

## Roles and Responsibilities of SO staff.

In the following paras a brief description of the roles and responsibilities of the staff of SO are given, however this is not exhaustive. This will evolve as the project implementation progresses.

**A. Community Organizer:** The major role of the Community Organizer is to provide handholding support to the WUA in institutional strengthening. The duties include:

- Ensuring involvement of all sections of WUA including vulnerable group
- Plan and implement tribal and gender development activities and ensure that these are integrated with the agricultural livelihoods support services plan.
- Implementation of Resettlement plan
- Identifying different stakeholders of the tank.
- Carrying out PRA for preparation of resource profile,
- Identifying deficiencies (gaps) and interventions required in the tank system
- Help WUA to open bank account for contribution (separate from WUA account) for O&M
- Assessment of WUA readiness for contribution towards restoration & rehabilitation of tank
- Preparation of TIMP
- Facilitating cash /Kind contribution
- Identifying the training needs of the WUA
- Facilitating book keeping
- Handholding support to paraworkers
- Ensuring that wage employment is available to local communities, on preferential basis, particularly the vulnerable among them etc.

**B. Work Inspector:** The Work Inspector shall assist and monitor activities of WUA which includes:

- Implementation of Resettlement plan
- Carrying out PRA for preparation of resource profile,
- Identifying deficiencies (gaps) and interventions required in the tank system.
- Preparation of TIMP
- Preparation of procurement plan
- Identifying cash /Kind contribution
- Helping the lead farmers on day to day activities of rehabilitating the tank system
- Maintaining records of the quality control activities of the works undertaken
- Water distribution and water use efficiency
- Ensuring that wage employment is available to local communities, on preferential basis, particularly the vulnerable among them etc,
- Ensuring that wagers are paid as per the minimum wages act.
- Ensuring wages to women are at par with male worker on equal work for equal work basis.
- Ensuring that no child labour is involved in the construction work.

He/she will also assist the DPU Engineers in taking survey levels in the field, training WUA/ work sub committee members / Paraworkers, ensuring completion of weekly activities entrusted to sub committee and data collection to prepare completion reports.

He/She will assist DPU in assessing and implementing ground water interventions and hydrological monitoring activities.

**C. Agriculture Coordinator:** The Agriculture Coordinator shall assist and monitor activities of WUA which includes:

- Carrying out PRA for preparation of resource profile,
- Identifying deficiencies (gaps) and interventions particularly in cropping pattern and other support services.
- Preparation of TIMP
- Helping the Para workers for agricultural livelihoods support services on day to day activities.
- Promoting I D crops

- Maintaining soil profile data of the command area
- Promoting livelihood component.
- Mobilizing groundwater users in tank influence zone into groundwater user groups and affiliate them to the WUA
- Assisting in participatory hydrological monitoring
- Implementing gender and tribal development plans and ensuring adequate integration with the agriculture and livelihood plans.

He/she will also assist commodity specialist in their field based activities like training lead farmers, marketing survey, marketing linkages, ensuring completion of weekly activities entrusted to lead farmers etc. Developing the Resource profile of tank system, Trend analysis of groundwater based irrigation.

Tank based production system analysis, Problem identification (tank system deterioration), Needs identification (Related to WUA institutional development / tank restoration / livelihood), Identification of resources with WUA, Identification of interventions (WUA institutional development / tank restoration including groundwater / livelihood / trainings), and Identification of expected outputs from proposed interventions

### Phase wise details of the activities proposed under the project

The phase wise details of each staff member are given in the following:

Sl. No.	Activity	SO Staff Tasks		
		CO	Agriculture	WI
<b>Pre-Planning Stage (2 Months)</b>				
1	Social Mapping & identify all tank stakeholders / groundwater users in tank system area and influence zone	X	X	X
2	Project sensitization and awareness among the tank stakeholders	X	X	X
3	Involve village level functionaries of line departments / PRI department	X	X	
4	Organize tank based consultation with all stakeholders (Including fishermen, catchment farmers, groundwater users in influence zone, etc.)	X	X	X
5	Assessment of WUA readiness for contribution towards restoration & rehabilitation of tank, Identify encroachments in the tank system.	X		
6	Preparation of Resettlement Plan (RAP)	X		X
7	Agreeing on draft MoU between WUA & DPU	X		
8	Signing of MoU between WUA & DPU			
9	Maintenance of documents, books and accounts by WUA	X		X
<b>Planning Stage (4 Months)</b>				
10	Implementation ERP			X
11a	Data collection through Participatory Rural Appraisal (PRA)*	X	X	X
11b	Technical aspects of tank, catchments area & command area / tank influence zone			X
12	Provide initial training to WUA members on TIMP preparation (on micro-planning, preparation of estimates, procurement, etc)	X	X	X
13	Constitute four sub committees of WUA on Works, Finance, Monitoring, Evaluation & Training and Water Management	X	X	X
14	Provide training to all sub committee members on their roles and functions	X	X	X
15	Mobilize groundwater users in tank influence zone into groundwater user groups and affiliate them to the WUA		X	

Sl. No.	Activity	SO Staff Tasks		
		CO	Agriculture	WI
16	Awareness generation among groundwater user groups about project groundwater interventions	X	X	X
17	Implement RAP	X		X
18	Prepare TIMP	X	X	X
18a	Design, estimate of Civil works			
18b	Training Plan	X	X	X
18c	Livelihoods Plan	X	X	X
18d	Gender and Tribal development plan	X	X	
18e	Compilation of TIMP Document			
18f	Ratify TIMP in WUA General Body meeting	X	X	X
19	Identification of activities for Gram Panchayat implementation and submit the list to the GP			X
20	Open WUA bank works account (separate from WUA O&M account)	X	X	X
21	Mobilization of cash contributions	X	X	X
22	Appraisal of TIMP by DPU			
23	Inclusion of TIMP in the District Action Plan for DLIC Approval			
24	Sign Agreement on TIMP implementation between WUA and DPU			
25	Prepare procurement plan for materials & services for works by WUA	X	X	X
26	Preparation of tender documents for works to be tendered			
27	Maintenance of documents, books and accounts	X		X
<b>Implementation (18 Months)</b>				
28	Public display of project information on wall / notice board	X		X
29	Implementation of civil works by WUA	X		X
30	Tendering of Civil Works			
31	Implementation of civil works by contractors	X		
32	Supervision of both types of work			X
33	Quality assurance through agreed mechanism and reporting			
34	Work completion report			
35	organize trainings (WUA management / livelihood / financial management / O&M / M&E / water management / groundwater management, etc)	X	X	X
36	Implementation of participatory hydrological monitoring	X	X	
37	Crop-water budgeting and crop planning for groundwater use in tank influence zone		X	
38	Promotion of water efficient technologies in groundwater based irrigation	X	X	
39	Institutional strengthening of groundwater user groups	X	X	
40	Mobilization and formation of common interest groups for agri-business promotion	X	X	
41	Implementation of livelihoods & agri-business plans etc.		X	
42	Implement Gender and Tribal development plans	x	x	
43	Strengthen linkages with departments, commercial banks and private sector		X	
43	Maintenance of documents, books and accounts	X		X
45	Participatory monitoring at the village level	X	X	X
<b>Post Implementation (6 Months &amp; onwards)</b>				
46	Assessment of WUA for refresher trainings	X	X	X

Sl. No.	Activity	SO Staff Tasks		
		CO	Agriculture	WI
47	Refresher Training for WUA	X	X	X
48	Update seasonal O&M strategy, plans and estimates			X
49	Operationalize O&M plan			X
50	Maintenance of O&M fund			X
51	Maintenance of documents, books and accounts	X		X
52	Preparation of project completion report on agreed format	X	X	X
53	Monitoring at WUA performance every 6 months	X	X	X
54	Preparing Annual action plan of SO	X	X	X

\* Data collection through PRA on: Socio-economic profile of tank stakeholders,

## **2. PRE-PLANNING PHASE**

### **2.1 Generating awareness on project**

Creating general awareness about the project is an important activity of the SO. The task is easier in areas where farmers are more aware of the development programmes and outside agencies are already involved in such activities.

There might be some instances where farmers are not willing to cooperate because of their previous experiences with SOs not being good with the community. Remember that, people will strongly react based on their previous experiences. To understand the village environment, the organization should assess and understand socio economic and political background and dynamics of the village(s). Based on the background, SO develop its own strategy to plan and implement the project.

### **2.2 How to work with the communities**

The process needs regular visits to the villages- talking to ayacutdars (WUA members), fishermen, youth leaders, panchayat members and other tank users. Focus needs to be given to vulnerable sections (including women, tribal, schedule castes etc) that are generally marginalized in the decision making and development process. Suggested pre-requisites in working with the community include the following:

- Take time to introduce yourself and your organization members, who may frequently visit the tank village(s).
- Organize meetings to inform the participants about the project.
- Be open and transparent.
- Do not make any false promises. Give the right messages at the very first meeting.
- Give a feeling that you are equally concerned with their issues.
- Never give a feeling that you are giving too much attention/ importance to a particular community or person(s).
- Make better use of the Key informants

### **2.3 Methods used in Awareness Generation Programme**

Some of the methods suggested below might help the SO staff to work better with communities and help generate awareness and interest in the project. The following paras explain about these methods.

#### **2.3.1 Kalajatha - what it is**

Kalajatha is a street play. It has proved to be a useful instrument to carry a process forward. The objectives of kalajatha are to:

- Help the WUA members know about the need for improving tank system
- Make them aware about the project.
- Motivate people to participate in the project
- Sensitize people on issues related to the tank management
- Develop and motivate the WUA management committee members and tank users to understand the project to work for the project.
- Build support of WUA for implementation of the TIMP. This kalajatha consisted of a set of street dramas on any concept. In this context, the following concepts can be considered:
  - Effective tank management,
  - importance of peoples' participation and
  - Improved cropping pattern
  - Economizing water use etc.

### 2.3.1.1 How it can be conducted.

The SO should identify the kalajatha troupes. The SO should make it clear about the concept of the project. Based on the concept, the kalajatha troupes propose different options. Best option shall be considered. If any troupe fails to convey the message, alternative troupes can be arranged for better performance.

The kalajatha troupes travel from village to village to perform these programmes. The WUA and SO should do some preparatory work like mobilizing the crowd, logistic arrangements (organizing mike sets, food for the artists) fixing time and venue. As a general guideline, plays shall be organized in the evening times i.e. in between 5 to 8 PM., (Note: lean seasons are the most convenient time for these plays).

### 2.3.2 Audio-visual shows

For dissemination of information about the project, besides kalajathas, other means, like wall writings, meetings and audio-visual show should be organized. The audio-visuals will help the farmers to convince through different examples that are available about the project related activities.

These shows could be organized at the gram panchayat office premises or any other suitable premises as suggested by the WUA. The Community Organizer of the SO should inform the farmers and other local tank dependent community and groups, about the date, time and topic of the show. The SO should organize and arrange TV, CD player, mike set and CDs. Generally, these are supplied by DPU.

After gathering the WUA members and others the organizer shall give brief introduction about the show. Where ever the explanation is required, the organizer can explain by giving pause of show. At the end, the organizer puts questions related to the show and sums up the content with the relevant local examples.

Suggested lists of the audio visuals that (along with the institutions preparing then) could be used in given below:

- Importance of tank management and its planning(JSYS)
- Appreciative inquiry (MYRADA)
- PRA (MYRADA)
- SRI paddy cultivation (WALAMTARI)

However, if a SO has its own video-recordings related to the project, these could also be used.

### 2.3.3 Other methods

These includes wall writings, padaytras, WUA General Body meetings etc

Identifying stakeholders of the tank

Initially, the secondary information about the tank and its command area farmers shall be collected from the section offices of the ID and DPU and from WUA. The command area farmers shall be categorized in three reaches i.e. head, middle and tail. The small group meetings shall be organized with different tank users like washer men (chakali), fishermen (besta community), Sheppard, cattle grazers etc. Similar meetings should also be held with women, tribal groups if any, schedule caste landless etc to understand their issues and concerns.

The following format could be used to prepare the list of various tank users, their numbers dependent on the tank system.

<b>Occupational Groups</b>	<b>Households Depending on Tank</b>
Large Farmers	
Medium Farmers	
Small Farmers	
Marginal Farmers	
Landless	

Livestock Keepers (Only)	
Manufacturing / Processing	
Fisher Men	
Potters	
Tribal	
Women land holders	
Ground water users	

*Note: This table is part of TIMP*

## **2.5 Organizing Tank based consultation with all stakeholders**

The social mapping exercise should be carried out in the tank villages. This exercise facilitates in identifying various stakeholders of the tank and users' categories. Once all the tank stakeholders have been identified, an Analysis Matrix shall be prepared for all tank stakeholders.

The project is not only working with the ayacut farmers but also considering all the stakeholders including catchment farmers and fishermen. The SO shall discuss with the stakeholders on their existing livelihood practices. These practices shall be analyzed and discussed about the opportunities for the improvement. Eventually, these consultations should lead to planning process of enhancing livelihoods of farmers of the command as well as catchment areas.

### **2.5.1 Assessing WUA readiness for contribution towards restoration & rehabilitation of tank.**

The SO, through various means shall assess preparedness and willingness of the WUA to participate in the project. Initially, the WUA has to prove its willingness through contribution of 5 percent in cash. To assess the farmers' contribution, the SO has to facilitate the following steps.

- Organizing meetings with the ayacutdars.
- Taking opinion of the village elders, gram panchayat leaders etc.,
- Discussions on mode of contribution
- Fixing responsibility of collecting the contribution to an ayacutdar with the acceptance of WUA managing committee.
- Collection of the WUA contribution
- Writing relevant registers and books.
- Depositing the cash in the O&M Bank account of the WUA.

### **2.5.2 Assessment of preparedness for participatory planning**

To analyze the preparedness and willingness of the WUA to participate in the project, an assessment of the environment for participatory planning within the WUA will be carried out. The assessment will be carried out on the following aspects:

- Organizational & Financial Environment
- Planning Environment
- People's Participation

The formats for carrying out this assessment of environment are given in **annexure 2 of TIMP**.

## **2.6 Agreeing on draft MoU between WUA & DPU**

Asses the environment and readiness of WUA for participatory planning after the completion of the awareness generation phase. If the WUA has proved it's willingness through the cash contribution for participation in the

project, then the Memorandum of Understanding will be agreed upon and signed between the WUA and the DPU. The MoU is given in annexure 3. This will delineate the commitments and mandates of the two agencies towards each other.

### **2.7 Facilitating signing of MoU between WUA & DPU**

Prior to the WUA entering into an the agreement with the DPU, the SO shall explain about different clauses of the agreement to the MC members and clarify the doubts about the agreement. The SO could, wherever possible, convene the meeting with the DPU and conclude the MoU with a group 5 to 10 WUAs of its area of operation. WUA President should sign the MoU. During the signing of agreement, the SO should help the WUA should furnish the evidence of cash contribution to the DPU.

### 3. PLANNING PHASE

#### 3.1 Facilitating formation of four (4) WUA sub-committees

As per the APFMIS Act, the general body of WUA needs to constitute specific sub-committees. Wherever the sub committees do not exist, the formation of sub committees have to be facilitated by the SO by ensuring the participation of the WUA members.

##### 3.1.1 Process for formation of sub committees

The process of formation of sub-committees starts with convening the meeting of the General Body of the WUA. The information about the meeting should be intimated to all the members of WUA along with the agenda. The SO and WUA should ensure the attendance of all the TC members. Though the election of the sub committee leader is a formal activity, the selection of the members of the sub committee is crucial. In the meeting, WUA should identify suitable members for sub-committees, preferably in a consensus manner. If the WUA is not able to arrive at consensus (in selecting the candidates) the WUA can choose the candidates through voting by raising the hands in the meeting with the existing members. Entire process of the meeting has to be documented by Book Writer.

The composition of the each committee shall include a member of the Managing committee other than the Chairman/ president. The other members, not exceeding four shall be drawn from other WUA members with voting rights.

The organizer of the SO should document the entire proceedings of the meeting properly. At the end of the meeting, facilitator should announce the selection of candidates with due signatures of the WUA members and elected members of sub committee.

##### 3.1.2 Notes on Sub-committees and its duties.

As per the Act, the following **four (4) types of Sub-Committees** that needs to be constituted by a WUA:

- Finance and Resources sub- committee
- Works sub- committee
- Water Management sub-committee
- Monitoring –Evaluation and training sub- committee

The **composition** of each sub committee is as follows:

- The Convener of the sub committee shall be a member of Managing Committee other than the Chairman/President.
- The other members of the sub committee not exceeding four shall be drawn from WUA members with voting rights:
- No member shall represent more than one subcommittee.

**3.1.3 Functions of** each of the Sub committee are as follows:

##### i) Finance and Resource Sub Committee:

- a) to mobilize and collect resources
- b) to ensure collection of water charges and dues from WUA Members
- c) to recommend to Managing Committee the use of funds ; and
- d) to maintain records relating to financial matters

##### ii) Works Sub Committee:

- e) to recommend estimates of works for administrative
- f) approval
- g) to supervise works and ensure quality control ; and

h) to approve payments for the works completed.

**iii) Water Management sub committee:**

- to carry out the decisions of the managing committee and of the general body on water regulation , schedule of water release.
- to organize patrolling of the canal ,channels and regulate the use of water .
- to check the irrigation and drainage system regularly ;
- to record the deliveries ;
- to report to the Managing Committee any violations in the use of water and;
- to maintain the records of land owners and water users .

**iv) Monitoring & Evaluation and Training sub committee:**

- to identify training needs and organize training to the Water Users;
- to educate WUA on the optimum use of water
- to monitor specific items like area irrigated , productivity, disputes settlement and resources building ;

The sub committee shall meet as frequently as necessary. The members of Managing Committee in charge of the sub-committees will preside over the meetings and maintain the record of discussions and decisions. The sub committees shall function under the general superintendence, control and direction of the Managing Committee of the organization.

**3.2 Training WUA members on TIMP preparation**

The SO shall provide the training on TIMP preparation before initiating the planning process. The SO should have clarity about the TIMP process before imparting training and this requires that the SO team should read thoroughly the WUA manual and Note on TIMP preparation. Facilitators shall organize the trainings by using the training modules developed for this purpose. Trainings shall be in participatory mode. The SO should ensure the participation of the concerned competent authority during the training programmes and his/her guidance will be taken, particularly on technical aspects.

During training, resource team shall simplify the technical estimations through local terminology. The participants shall be given some practical exercises to understand them.

**3.3 Facilitating preparation of TIMP**

The following steps will be under taken for the preparation of TIMP

**3.3.1 Data collection through PRA**

After signing of MoU between WUA and the DPU, the process for TIMP preparation will start. **PRA** which will be carried out over a period of **6 days**. (Refer the matrix below) WUA shall provide necessary existing information and WUA managing committee shall look into logistics arrangement and ensure participation of key informants of the village. The tools of PRA for six days are as follows:

All the groundwater users in the command and influence zone will be organized into groundwater user groups by the SO and these will be affiliated to the WUA for all the project related inputs.

### **Matrix of PRA and Data Collection**

<b>Day</b>	<b>PRA Tools</b>	<b>No of groups</b>	<b>Output of the Tool</b>
Day 1	Resource Mapping / Transect	3	To assess the nature and levels of production system in the tank area and identify the problems in the tank system that would require restoration
Day 2	Production System & Livelihoods Mapping	3	
Day 3	Institutional Mapping / Infrastructure ,Service Availability & Mobility Mapping	2	To assess the social and physical capital existing in the tank area and the linkages and networks through which inputs and services are acquired by the tank users and markets accessed by them
Day 4	Time Line / Seasonality Chart / Trend Analysis of Groundwater based Irrigation	1	To assess the significant historical trends and annual events that has influenced the prevailing condition of the tank system / groundwater use in the tank influence zone
Day 5	Problem Tree / Problem Identification / Problem Prioritization / Identification of interventions	1	Identification of interventions and their prioritization.
Day 6	Presentation to general body	1	Discussions and finalization of the planning process with General body of WUA.

The detailed procedure of conducting PRA is given in **Annexure 1**.

### **3.3.2 Technical aspects of the tank, catchment area & command area**

DPU shall collect necessary technical data and Work Inspector will also assist the DPU in this exercise as follows:

- Identification of problems
- Prioritization
- Identification of Interventions
- Designs & estimations

### **3.3.3.Preparation of work designs and cost estimates**

After identification of interventions and designs and the cost estimates for the civil works will be prepared by the project technical staff. During the same time, the cost estimates and implementation strategy for other interventions will be prepared by the relevant SO and project staff. The output of this exercise is to prepare line estimates.

### 3.3.4. Training needs assessment.

SO shall assess training needs at different daises through regular meetings informal discussions, field visits etc. In another formal meeting the identified training needs has to be apprised and finalized. Some of the training needs assessed by PMU for different stakeholders at different stages are given in **Annexure 3**. However, SO should not treat these as final rather training needs should be assessed based on actual field requirement.

### 3.3.5. Identification of Para workers

The livelihood activities shall be initiated through Para workers and success of the activities will depend on selecting suitable candidates. To select the candidates, following criteria should be explained to WUA members and facilitate the process of selection.

- Candidate must be keen in better practices of agriculture, livestock management and marketing activities
- Candidate must be a member of the WUA of the tank, a practicing farmer and resides in the village itself.
- Should be able to read and write.
- Maintains good relationships with other WUA members and must be vocal.
- Willing to give his time on a voluntary basis to support the WUA farmers in promoting better practices.

The facilitator should not give weightage to any candidate for his/her personal the selection process interests in identifying the candidates. He shall educate the WUA members about the qualifications and experience required for of Para-workers.

### 3.3.6. Assessment of Tank based production system

Identification of the para worker shall be completed before initiating the assessment of the tank production system. After adequate training to para-workers, the SO shall assess the tank production system with them. In this exercise, the following aspects shall be given focused on attention:

- Cropping pattern
- Cost of cultivation
- Farm Inputs required
- Crop productivity
- Soil fertility etc.,

The base line exercise should be documented and the results can be used as benchmarks. The formats will be supplied by the DPU.

### 3.3.7. Assessment of Resources with WUA

To assess the resources of WUA, information can be obtained with the help of the key informants like neeradis, village karanam (Patwari), and managing committee of WUA. The organizer of SO has to fill up following registers and records as

**Inventory register (component register):** These records shall contain the details of properties of tank like land, building etc., Form 1

- **Register of vacant land, building, (Form IIB).** In this register, information on foreshore land and common land of the tank can be filled up.
- **Miscellaneous property register.** Other minor properties such as trees, grass etc., shall be recorded in form II A of APMIS act. Generally in MI tanks toddy trees remain as property of the tank.

### 3.3.8. Identification of agricultural livelihood support services.

Tanks are multi-livelihood resources. A number of community based institutions are engaged in the overall production process of the tank. The ground realities indicate the need for specific technical and extension support to improve the production technology in all major tank based livelihoods viz. agriculture, livestock and

fisheries. The baseline situation will reflect long value-chains with intermediate actors influencing the incomes at producer level. There is a great potential of increasing returns by intervening in critical value-chain, which is the project focus.

The livelihood interventions primarily focus on agro-based activities and thus the beneficiaries will be the command area farmers. The marketing related activities will generate additional employment potential at the tank command area. All livelihood interventions will be available to all farmers in the tank area, cattle owners, catchment area farmers and the ground water users. The marketing and business development interventions will go beyond one tank or one WUA but will be implemented with a cluster approach.

The pilots and action research activities will help to bring innovations in the tank management and give more clarity and guidance in near future. This exercise can be carried out in selected tanks.

Adequate efforts will be taken to integrate gender and tribal developme issues with the tank based livelihood opportunities.

**3.3.9. Other Plans included in the TIMP.** The following plans, where ever required will be prepared and suitably incorporated in the TIMP.

- a) Environmental Management Plan: Wherever the environmental management plan is being prepared, the SO shall extend its support to the WUA in its preparation.
- b) Resettlement Plan (if required): Where ever required a resettlement plan will be prepared and the SO shall extend its support to the Revenue department and WUA for necessary planning and implementation.
- c) Gender Development Plan: The SO will guide WUA in the preparation of the Gender Development plan in each tank system. should be prepared with support and guidance of DPU.
- d) Tribal Development Plan: In the tanks located in Tribal areas, SO will support WUA in preparing tribal development plan.

**3.3.10 .Preparation of TIMP Document**

After the design, cost estimates and the implementation strategy for all the interventions are prepared which will be compiled into the TIMP document. The concerned DPU staff and SO shall help the WUA to apprise the details presented in the document. The managing committee and sub committee members should know the details clearly.

**3.3.11. Involvement of Village level functionaries of line departments**

In addition to water management and repairs to the structure, the project also aims to improve agriculture, livestock, fisheries and other livelihoods. It is in the context that , the inputs of the concerned line departments’ are required in the planning ut also their involvemtn during implementation. The services of line department personnel available for village level planning and providing guidance are as follows:

<b>Dept</b>	<b>Concerned staff</b>	<b>Office location</b>
Agriculture Dept	Agriculture officer (AO)	Mandal
Animal husbandry dept	Veterinary Assistant Surgeon (VAS)	Mandal
Revenue dept	Village secretary (VS)	Village
Fisheries dept	Field assit (Supervisor)	
Ground water dept	Assit hydrologist	Cluster level
Cooperatives	Extension officer	Cluster/Mandal

### 3.3.12 Consultation and endorsement of TIMP by WUA General Body

Once the draft of TIMP document is ready, it will be given to the WUA for discussion. A General Body meeting of the WUA will be organized atleast a fortnight after the draft TIMP is handed over to the WUA.

The General Body of the WUA will pass a resolution for approving and adopting the TIMP after all clarifications and detailed discussion. The WUA MC will then fill up the TIMP Implementation Agreement. The Agreement is given in **Annexure 4**.

### 3.4 Facilitating signing of Agreement between WUA and DPU

Memorandum of understanding (MoU) is to arrive at an agreement between the WUA and the DPU, for undertaking tank improvement activities (for restoration and rehabilitaton) and the Management of the tank system. In the MoU roles and responsibilities of both are also been elaborated. The MoU will be valid for a period of 30 months. Before concluding the MoU, the SO should clarify all the clauses to WUA managing committee. The SO team shall ensure the Managing committee is in principle agreement to all the conditions of MoU. Two copies of the approved TIMP and the Agreement will be prepared by the WUA and submit them to the DPU for appraisal and onward submission to the DLIC for approval. On receiving the DLIC approval, one copy of the TIMP and the Agreement will be given to the WUA for its records and use and the other copy is kept with the DPU.

### 3.5 WUA trainings

Training is an important component in the project. Different stakeholders have different roles and responsibilities in the project implementation. Trainings to primary stakeholders have to be planned and imparted by the SO. The stakeholders and their needs assessment have been elaborated in the WUA manual. The primary stakeholders of the project who need training and capacity building are:

- WUA members
- Lead farmers
- Sub committee members
- WUA managing committee members
- CIG/Rytumitra groups etc.
- Para workers.

The SO team has to prepare the training module and organize them. The timing of actual training should be convenient to the WUA members and farmers and it should not overlap other training programmes and should not disturb the agricultural operations.

### 3.6 Providing training to sub committee members

The SO team shall assess the training needs of sub-committee members and prepare of training calendar in consultation with the stakeholders concerned. This consultation may be either through formal meetings or informal meetings. SO can any adopt suitable method and prepare the stakeholder wise annual training calendar. A list of basic trainings are for sub committees is given below. If any additional or specific trainings are required, the SO shall add to this list.

### 3.7 Opening WUA bank accounts.

The WUA shall open two separate accounts in any nationalized bank. The account can be a saving or current account and should preferably be with a bank operating in the village or near by. The following are the two accounts and its procedure for operating.

- a) Opening of **Regular O& M account** (where ever account does not exist). In this account, the beneficiary contribution (the cash component) and the O&M funds received from the government will be deposited in this account. The WUA membership fee and any donations etc., are also deposited in this Account. This account will be operated jointly by the President and the Vice-President of the WUA.
- b) Opening of **Works Account**. In this account, the project funds for the works and the livelihood funds will be deposited. This account will be jointly operated by the President of the WUA and the DPU staff deputed to the WUA.

### **3.8 Facilitating preparation of procurement plan**

The procurement process shall be continued as per the regular norms followed by the Irrigation department. The details about procurement has been given in the Procurement Manual.

## 4. IMPLEMENTATION

### 4.1 Facilitating implementation of TIMP activities:

#### 4.1.1 Tank restoration

The SO team has to prepare a schedule for implementing various works which will be implemented according to the availability of time, farm operations and canal schedule. The SO staff shall prioritize works under each component along with the WUA and the Competent Authority. Subject to the financial limits (Rs 5 lakh) set by the government, the WUA will identify works to be implemented of by them, like repairs to feeder channels, jungle clearance, revetments and distribution channels etc. The remaining works shall be listed separately for implementation through the tendering process. Further details could be seen from WUA , Technical and procurement manuals.

During the implementation of physical works, the Works Inspector of SO shall help WUA and its works sub-committee to supervise day to day activities like measurement of different works under progress and completed, material composition, quality of material and equipment procured, post construction treatment etc. The Competent Authority. also provides guidance, at least once in a week or ten days. The WUA managing committee and works sub committee shall regularly interact with the DPU and SO to ensure the quality of works.

SO should ensure and facilitate the two sub committees i.e. Works and Financial sub-committees of WUA to maintain the following records during implementation of works.

- Muster role
- Register of Technical and Administrative Sanctions
- Bill register (Form –VI (C))
- Cash book (Form – VI (A))
- Cheque memo register (Form – VI (D))

The work inspector of the SO shall ensure availability of all books with the WUA and sub committees. SO will ensure that all payments for the works above Rs1000/- are be paid by cheque. The works sub committee will approve payment for the works carried out either by WUA or recommend to the DPU and for payment for works carried out by the contractors . The financial sub committee shall maintain a record of all payments made in respect of WUA works , in the cash book as per the date, purpose of payment and party[ies] paid

#### 4.1.2 Agriculture and livelihood development

SO team will facilitate in promoting agriculture and livelihoods development activities. Their role and responsibilities will includes ( but not limited to) the following:

- Identification of lead farmers.
- Identification of demonstration plots and farmers for training
- Identification of livelihood stakeholders
- Formation of CIGs
- Training and guiding para-workers
- Providing market linkages

#### Demonstration plots

The crop demonstrations to be carried out in a particular tank will be identified during preparation of livelihood development plan (LDP) which forms an integral part of TIMP. Crops for demonstration include: (i) existing crops – covering 5 crops – paddy, groundnut, sunflower, Jowar and maize; and (ii) non-traditional crops with established market linkages. Besides the project includes demonstration on new/improved technology

**Selection of lead farmer:** The critical step in organizing a demonstration is the Selection of a lead farmer from the community who becomes a local cadre with technical knowledge beyond the project period. The following criteria will be used for selection of the lead farmer. He/she should be a:

- practicing farmer, having own land on which demonstration will be organized;
- member of WUA; and
- willing to learn and disseminate the demonstrated technologies/interventions.

In addition, the specific site where demonstration is to be organized should meet the following criteria:

- have a minimum land area of 0.5 acre;
- be easily accessible from the identified tank villages;
- be a road side plot;
- represent soil type in the tank area; and
- the land owner is either a lead farmer or a progressive farmer and he/she is willing to adopt the complete package of technology in a timely manner.

### **Common Interest Group (CIG)**

Any group with common interest such as collective marketing, collectively owned agribusiness ventures like post harvest processing units or any other small agribusiness ventures, fish marketing etc.

**Eligibility criteria for CIG:** This varies according to the activity chosen by the group. The details are as follows.

<b>Criteria</b>	<b>Agriculture</b>	<b>Animal Husbandry</b>	<b>Fisheries</b>
Membership	CCL in a bank		CCL in a bank
Registered as	Rytu mitra	Not required	FCS
% of credit to be raised	10%	25%	10%
Whether group bank opened	Indicate the status	Indicate the status	Indicate the status
Whether business plan prepared	Indicate the status	Indicate the status	Indicate the status

**The Process:** The SO will support WUA and assist DPU

- on marketing and processing of farm produce.
- Helping CIGs to access Agri Business and Marketing fund through the WUA on loan applications along with the business plan.
- Help CIGs in preparing a business plan along with the commodity specialists
- Help DPU to appraise the business proposal with the support of relevant technical staff
- SO will support the overall processing of the application, appraisal and recovery of fund, which will be formally overseen by DPU.:
- Guide WUA to ensure timely collection of loan repayment amounts
- SO and DPU will monitor and take appropriate actions against non-payment

### 4.1.3 Implementation of other plans

- **Environmental management plan:** Wherever the environmental management plan is implemented, the SO shall extend its support to the WUA and ensure its implementation as per the plan.
- **Resettlement Plan** (where ever required) Implementation of this plan will be completed during the TIMP preparation stage. However the SO shall extend its support to the Revenue department and the WUA to ensure implementation of any balance activities of the RAP during the TIMP implementation stage.
- **Gender and Tribal Development Plans:** The SO shall ensure that the implementation of these plans are adequately integrated with the various activities of the agricultural support Livelihood component and ensure that the tribal women and other vulnerable sections of tank community get benefits from the project.

### 4.1.4 WUA training (including institution development & financial management)

Based on the results of the training need assessment, a training plan is developed. For each component like institutional development, financial management, livelihoods etc participants for training are identified by SO in consultation with the WUA and DPU. The training shall be organized for the identified candidates (stakeholders) as per the schedule included in the training plan.

Every quarter, the SO will prepare the schedule for training with monthly break up on the type and number of training and number of participants. The trainings can be organized at the village level or at the cluster level. The exposure visits shall be planned as per the advice of DPU. The funds/budget can be obtained every quarter against the prepared plan in advance for organizing the Capacity Building (CB) events. Expenditure details shall be submitted by the (SO) along with the documentation to the DPU.

### Supervising implementation of TIMP activities

WUA plays an important role in the overall implementation process of the project at the tank level through different phases of the project, viz., pre planning, planning, implementation and post implementation. During the implementation of the physical works, the Works Inspector of SO shall extend his/her support to WUA on the day to day activities like measurement of the structure, assessing material ratio, quality of the machines and equipments, time of curing etc. The Competent Authority also gives his/her guidance at a frequency of once in a week or ten days or need basis. The SO team should facilitate in identifying suitable persons from the works sub committee for supervision of the work done by both WUA and Contractors.

### 4.3 Facilitating maintenance of records, books and accounts

The WUA has to maintain the books prescribed in the APFMIS Act. The SO shall identify book writers for each sub committee, especially the Works and Financial sub committees. The SO team will help improve the capacity of Book Writers by imparting the required training. The SO and the DPU shall provide necessary guidance in book keeping and accounting process.

The following are the books and Accounts which should be regularly maintained and updated.

#### Maps & Records

- Map showing the boundaries and jurisdiction of the Association, Water Conveyance system, within the boundaries of the Association;
  - Map showing the localized/notified ayacut, and
  - Map showing the areas under irrigation not falling within ayacut notified
- 
- Property Register and Records:
    - Inventory Register
    - Register of vacant lands and building
    - Register of income on Miscellaneous property
    - Register of Machinery
  - Membership Register and Records
  - Water Flows register and records

- Area and crop register and records.
  - Ayacut register showing extent (Form VI A)
  - Farmer wise demand register (Form IV B)
- Works register and records
- Register of administration sanction (Form V)
  - register of administration sanction (form V)
  - Register of technical clearance
- Cash register and records
  - Cash book (Form VI A)
  - Receipt book (form VI B)
  - Bill register (Form VI C)
  - Cheque memo register (Form VI D\_)
  - Special fee register (form VI E)
- Minutes Register
  - General Body
  - Managing Committee
  - Sub committees

Formats have been prescribed in APFMIS Act to maintain these records.

#### 4.4 Facilitating participatory monitoring by WUAs on:

- a) **Physical works:** The WUA Sub-Committee (Works) will monitor the day-to-day progress of works executed either by the WUA or contractor. During the process of monitoring, the Work Inspector of SO and Competent Authority shall provide necessary support to the sub committee to assess the quality of works. The sub committee shall report the progress to the managing committee every week during the periods the works are under execution.
- b) **Agricultural Livelihood Support Services:** The project is focusing on the activities to increase the productivity of existing crops to a reasonable level, especially paddy and other crops. To increase the productivity per unit of land and unit of water used, the intensification of existing crops, adoption of improved technology and diversification of the cropping pattern are envisaged. This will be based on the by assessment of the emerging market opportunities.

To monitor various activities under this componet, the SO should arrange separate monitoring mechanisms by identifying the responsible person(s). The following table gives clarity about the activity wise responsibilities.

Activity	Responsible persons
Agriculture & Horticulture	WUA and Para-workers
Livestock development	Gopal mitra & Line department
Fisheries	Fisheries Coperative society & Line dept
Production forestry	WUA
Marketing and agri-bussiness	CIGs and Para-workers

The SO can facilitate WUA to organize these review meetings and explain the monitoring indicators developed by the concerned line department personnel and DPU.

- a) **Participatory self-rating (PSA) :** Participatory Situation Analysis (PSA) is a self-assessment tool devised for self monitoring by the primary stakeholders. With this tool, the beneficiaries can assess various components/ activities depicted on the charts for visual understanding. Performance of each activity is indicated in 4 colours in the chart, where the participants can rate their activities. The process of this self rating can be elaborated by SO to WUA and the beneficiaries. The PSA should be conducted once in three months. The details of conducting PSA are given in separate booklet along with the colour charts. The material shall be supplied during implementation of the project by the DPU. The brief version of various components and the note for conducting PSA is given in **annexure 5**
- b) **Social audit :** The WUA will undertake social auditing of the activities. The main aim of the social audit is to know the details/facts of the works/activities carried out by WUA during planning and implementation stages of particular season It helps

- to disseminate the facts about the Project activities such as the budget approved. The major works to be undertaken, funds received and spent etc should be displayed on walls. Such information should be updated periodically, say once every quarter.
- The annual work plan/budget will be displayed on the Notice Board of WUA/ Panchayat office and at other prominent places such as schools or community halls.
  - An Information Board will be placed at the location of all works giving details of the nature of the work its value thereof, the name of the executing agency, schedule of implementation, expected person days of employment etc. The format for the same is given in **Annexure 6**
  - The WUA and the annual work plans/budgets will be placed before the general body and their approval is obtained.
  - The Audit Reports and compliance will be placed before the WUA general body meeting for discussion and approval.
  - The General body will be apprised of the physical and financial progress of the TIMP at each of their meeting and the Status Report of works will be placed in the meeting.
  - Managing Committee should approve the Utilization Certificates.
  - The WUA should provide the information desired by any member of the General body and make available any information on the TIMP..
  - For the success of social audit, it is essential that the meetings of the WUA general body is held once in six months (i.e. two times in a year).
  - The SO should facilitate in conducting meetings, ensuring participation of WUA members from all areas of the tank (head, middle and tail end regions) system.
- **Tips for the Facilitator (SO) for conducting meeting.**
  - Identify such people who are keen in the development of tank and persuade them in monitoring the activities - formally and informally.
  - During consultations, facilitate the process of discussions and keep probing. Ensure that every one in the group is able to present his /her view.
  - Do not allow few people to dominate the discussion.
  - Facilitate a process where participatory monitoring is not seen as threatening. As a Facilitator, keep reinforcing that participatory monitoring is not a fault finding but making the things work by bringing improvement in WUA management and tank improvement.
  - Issues like the WUA functioning, transparency, quality of works, time of initiating an activity and completing the works etc., are sources of conflict. Some people who could influence the functioning of the WUA need to be induced to attend the meeting. The facilitators should be able to make these people feel comfortable and at ease.

## 5. POST IMPLEMENTATION

### 5.1 Assessing WUA for refresher training

At the end of project implementation, for sustainability of the WUA, the SO should continue to work with the WUA and extend its handholding support for another 6 months, through monitoring tools like self rating and other regular monitoring methods. For the WUA assessment, ensure the following

- Attendance of all MC members.
- Explain the importance of their role in managing WUA operations.
- Explain the purpose.
- Make it clear that further financial assistance is not coming from the Government.

During the assessment, SO should elicit the WUA performance on:

- Status of WUA management
- Level of participation in the tank management
- Water use efficiency and irrigation practices
- Water supply to tail end
- Area irrigated, cropping pattern, demand assessment and the status of collection of water charges status
- The technology adopted by the WUAs for water use efficiency.
- Other livelihood programmes taken up and their progress and impact.
- How far women, tribal and other vulnerable sections are getting benefits under the project.

Based on the parameters mentioned above, the WUA performance can be monitored on major areas: Water Distribution, O & M and collection of water chargers and WUA Management. Each area can be rated in the following rating criteria. The rating format is given in **annexure 7**.

Grade	Marks (percentage)
A +	> 75
A	61 - 74
B +	50 – 60
B	25 - 49
C	< 25

The guidelines for organizing PSA are given in separate booklet and posters. Based on the performance of WUA, the SO shall plan the necessary trainings for the WUA to overcome serious gaps existing in the WUA and tank system.

### Organizing trainings

Based on the need assessment, the trainings and exposure visits shall be organized. These trainings have to be scheduled and completed within six (6) months.

### 5.2 Facilitate Training to WUA on preparation of annual action plan on:

For every season, WUA shall prepare a micro plan for agriculture and Operation & Maintenance activities. With the experience of working four seasons in the tank system, the WUA and the SO are in a better position to understand about the needs of cropping pattern, O&M works and water management. Short term trainings can be planned for helping WUA in preparing annual action plan. During planning, the involvement of Competent

Authority and Commodity Specialist shall be ensured. The specialized training shall be organized at resource centers and other training programmes could be organized in the villages or mandals.

#### **5.4 Monitoring and Reporting**

The SO will submit monthly physical and financial reports on the implementation of its Annual Action Plan to the DPU in the formats provided by the DPU. The SO will submit half yearly and annual reports to the DPU in compliance to the requirement of the project reviews. The SO will submit monitoring reports on the processes adopted, outcomes and impacts TIMP to the DPU format as per the specified formats.

#### **5.5 Preparing TIMP completion report on agreed format**

The DPU shall prepare the TIMP completion report in the format circulated by the PMU. During preparation of the report, the SO shall support DPU by collecting required information in the prescribed

## ANNEXURES

### Annexure I

#### DAY – 1 Identification of Stakeholders

Component	Area of Study	Secondary Data	Exercise / Tool	Checklist / Variables	Specific Outputs	Outcome
Identification of stakeholders	Socio economic background of stakeholders.	Household details (population, categories of families (ayacutdar families) economic profile.	Social Map	<ul style="list-style-type: none"> <li>• Category wise no of ayacutdars.</li> <li>• Details pertaining to each household and dependence on Tank.</li> <li>• No. Of women land holders</li> <li>• No. Of tribals and their landholdings</li> </ul>	<ul style="list-style-type: none"> <li>• Mapping of stakeholders</li> <li>• Any specific issues related to women and tribals.</li> </ul>	<ul style="list-style-type: none"> <li>• Identification of tank based stakeholders</li> </ul>
Presentation to WUA Managing Committee for triangulation (during night)						

- In conventional mapping, a trained SO representative draws a map of the tank. In participatory mapping, of which social mapping is an example, the villagers themselves do the drawing on the ground/floor, facilitated by project staff (SO& DPU). Maps work well in groups since people can remind each other of things that are forgotten and correct mistakes as they arise.
- Mapping on the ground has many advantages over mapping on paper. It is visible to many people which facilitates discussion. Also, unlike paper, space is unlimited on the ground so the map can be expanded to fit requirements. It also creates interest among the participants
- Starting with the layout of the village, the social map can show caste distribution and location, population, relative economic status and dependency on the tank etc

Day wise PRA Schedule

Annexure II

DAY – 1 Catchment Area Study

Group I

Component	Area of Study	Secondary Data	Exercise / Tool	Checklist / Variables	Specific Outputs	Overall Outcome
Catchment	<ul style="list-style-type: none"> <li>Land use pattern</li> <li>Soil management</li> <li>Status of drainage lines</li> <li>Ground water management</li> <li>Vegetation</li> <li>Feeder Channels (s)</li> </ul>	<ul style="list-style-type: none"> <li>Land holding details village wise</li> <li>Farmers categorization (MF/SF/BF)</li> <li>Catchment area details (ha)</li> <li>Revenue map</li> <li>Topo sheet</li> <li>Length of the feeder channel (s)</li> </ul>	<ul style="list-style-type: none"> <li>Transect walk through Mapping all details on problems and causes</li> </ul>	<p><u>Area details:</u> Private lands (extent-dry, wet, fallow, etc.) common lands (Extent-banjaru, karab, poramboku, forest land, etc) Crops: Crop wise area (dry &amp; wet) <u>Soil:</u> type, farm ponds/kunte, checkdam &amp; low, moderate &amp; high erosion prone lands <u>Drianage:</u> field drains &amp; feeder channels (location, length, status, etc) Ground water: No. of wells / tube wells, water table, crops (ha) <u>Tree &amp; pastures coverage:</u> private &amp; common lands (species, numbers, area, status etc) Weather silted, encroached</p>	<ul style="list-style-type: none"> <li>Understanding the land use pattern</li> <li>Understanding area under different crops</li> <li>Understanding the physical status of soils, conservation structures &amp; problem areas</li> <li>Understanding the physical status of field drains &amp; feeder channels</li> <li>Understanding of ground water status &amp; utilization pattern</li> <li>Understanding the status of vegetation &amp; pastures in private &amp; common lands.</li> <li>No of encroaches extent of encroachment</li> </ul>	<ul style="list-style-type: none"> <li>Broader understanding on the physical status of soils, drainage, vegetation &amp; land use</li> <li>Identification of problem areas / locations which contribute siltation</li> <li>Blockages in the Feeder channels.</li> </ul>

**DAY – 1**

**Tank Study**

**Group II**

<b>Component</b>	<b>Area of Study</b>	<b>Secondary Data</b>	<b>Exercise / Tool</b>	<b>Checklist / Variables</b>	<b>Specific Outputs</b>	<b>Outcome</b>
Tank	Physical & Management status of <ul style="list-style-type: none"> <li>• Water spread area</li> <li>• Tank bund</li> <li>• Sluices</li> <li>• Waste weir</li> </ul>	<ul style="list-style-type: none"> <li>• Tank Memoir</li> <li>• Revenue map</li> <li>• Information on the past</li> <li>• Interventions</li> </ul>	<ul style="list-style-type: none"> <li>• Transect walk through Mapping</li> </ul>	Tank outline, tank bund, waste weir, tank bed (percolation wells etc), foreshore (vegetation & encroachment), cultural properties, source of organic contamination etc  Encroachment no. And Extent	Understanding the physical status of tank bund, sluices, waste weir, tank bed, vegetation in foreshore, encroachments, cultural properties, sources of contamination etc  Encroachment weather significant	<ul style="list-style-type: none"> <li>• Understanding on tank history and its key role on village livelihood &amp; culture</li> <li>• Comprehensive understanding on physical status of tank</li> </ul>
		<ul style="list-style-type: none"> <li>• Output of mapping.</li> <li>• Old records available in the village.</li> </ul>	Tank Timeline	Tank history: year of construction, constructed by whom, important events like – major breaches, renovations, up-gradations etc	Understanding the history & important events & milestones occurred	

**DAY – 2**

**Command Area Study**

**Group I Morning**

<b>Component</b>	<b>Area of Study</b>	<b>Secondary Data</b>	<b>Exercise / Tool</b>	<b>Checklist / Variables</b>	<b>Specific Outputs</b>	<b>Outcome</b>
Command Area	<ul style="list-style-type: none"> <li>• Canal network</li> <li>• Drainage network</li> <li>• Cropping pattern</li> <li>• Water mngt.</li> <li>• Soil mngt.</li> <li>• Pests &amp; Disease mngt</li> <li>• Crop husbandary practices</li> <li>• Vegetation</li> </ul>	<ul style="list-style-type: none"> <li>• Ayacutdars list</li> <li>• Soil &amp; water analysis report</li> <li>• Revenue map</li> </ul>	<ul style="list-style-type: none"> <li>• Transect walk through and Mapping</li> </ul>	<ul style="list-style-type: none"> <li>• Land holding – Distribution socio-economic graphs</li> <li>• Distribution canals (length, depth &amp; width) regulatory structures &amp; overall physical status</li> <li>• Soil type, area, problematic Soils &amp; area</li> <li>• Drainage network (length, width, drainage linked wells &amp; overall physical status</li> <li>• Cropping pattern (crop wise area (crop wise area (head, mid &amp; tail end), area under single / multiple crop</li> <li>• Ground water: No. of open wells, bore-wells, crops grown, pumping system etc) reach wise (head, mid &amp; tail end)</li> </ul>	<ul style="list-style-type: none"> <li>• Understanding the land holding pattern</li> <li>• Understanding the physical status of main canals, distributory canals &amp; drainage network (length, width, extent, etc) &amp; water logged areas.</li> <li>• Understanding the cropping pattern (crop wise, season wise area under different crops) zone wise</li> <li>• Understanding the extent of vegetation (no. of trees, species etc) in private &amp; karab lands.</li> <li>• Understanding the status of ground water availability &amp; utilization (no. of wells / bore-wells, area irrigated, crops grown, season wise etc) zone wise</li> <li>• No of womwn land holders land holding among tribal and other vulnerable graphs.</li> </ul>	<ul style="list-style-type: none"> <li>• Clarity on physical status of command area features</li> <li>• Stakes in the tank by different social-economic graphs.</li> </ul>
Presentation: WUA Managing Committee for triangulation (during night)						

**DAY – 2            Land Use**

**Group I Evening**

Component	Area of Study	Secondary Data	Exercise / Tool	Checklist Variables /	Specific Outputs	Outcome
Catchment	<ul style="list-style-type: none"> <li>• Land use pattern</li> <li>• Soil management</li> <li>• Status of drainage</li> <li>• Ground water management</li> <li>• Cropping pattern</li> <li>• Vegetation</li> </ul>	<ul style="list-style-type: none"> <li>• Output of first day</li> <li>• Revenue map</li> <li>• Secondary data on land holding etc</li> </ul>	<ul style="list-style-type: none"> <li>• Trend analysis</li> </ul>	<p><b>Land use:</b> change in cropping pattern, crop practices &amp; productivity</p> <p><b>Soils:</b> soil conservation &amp; management practices</p> <p><b>Drainage:</b> management practices</p> <p>Vegetation: vegetation &amp; pastures management</p> <p><b>Ground water:</b> availability utilization &amp; management</p>	<ul style="list-style-type: none"> <li>• Understanding the decadal changes in land use pattern &amp; its impact on tank siltation</li> <li>• Understanding decadal changes in soil management practices &amp; its impact on tank siltation &amp; productivity</li> <li>• Understanding the decadal changes in drainage management &amp; its impact on tank siltation &amp; inflow's</li> <li>• Understanding the decadal changes in vegetation &amp; pastures management &amp; its impact on tank siltation, inflows, meeting biomass needs &amp; livestock</li> <li>• Understanding decadal changes in ground water availability, water table, utilization &amp; management</li> </ul>	<ul style="list-style-type: none"> <li>• Understanding the past &amp; present catchment area management practices, reasons for decline in management, impact on tank storage, relevant effective traditional management practices</li> </ul>
Presentation to WUA Managing Committee for triangulation (during night)						

**DAY – 2**

**Tank Study**

**Group II**

Component	Area of Study	Secondary Data	Exercise / Tool	Checklist / Variables	Specific Outputs	Overall Outputs
Tank	Physical & mngt status of  • Water spread area • Tank bund • Sluices • Waste weir	• First day output • Tank register data • Revenue map • Information on past interventions by MID/ZP/others	• Trend analysis	• Tank related cultural practices & traditions • Mngt of tank structures <ul style="list-style-type: none"> <li>○ Tank bed (silt &amp; live storage)</li> <li>○ Dead storage</li> <li>○ Tank bund</li> <li>○ Sluices</li> <li>○ Waste weir</li> <li>○ Foreshore</li> <li>○ Water contamination (sources if any)</li> <li>○ Any other issues</li> </ul>	• Understanding decadal changes in tank cultural practices & traditions • Understanding shifts in mngt of tank bed & dead storage • Understanding shifts in mngt of tank structures (bund, sluices, waste weir etc) • Understanding shifts in foreshore mngt & water contamination sources • Demarking tank area end extent of encroachment.	• Broader understanding on shifts in tank mngt • Analyzed causes & impact of changed mngt practices on tank • Understanding the shifts in tank utilization on village livelihoods
		• Rainfall data of the area	• Seasonality diagram	• Seasonal water levels • Season wise water usage • Season wise dead storage	Understanding seasonal water levels, usage & dead storage	
			• Pie diagram (past & present separately)	• List of tank uses • Quantification & prioritization of uses	Understanding the multiple uses of tank and decadal changes in utilization	
Presentation to WUA Managing Committee for triangulation (during night)						

**Process:**

Support organization and the WUA has to communicate to all tank users. The Information should reach to the stakeholders one or two days in advance through drum beating or “TAM TAM” or other suitable means in the village. The place and time of the meeting should be mentioned clearly. So the team should reach the village in time, the WUA president organize a meeting duly involving the Village Secretary, Gram panchayat Sarpanch and WUA Members.

WUA has to collect the necessary secondary information from the Adangal/pahani, Planning for logistics arrangements such as lunch, walk through survey, transect walk, etc. Should be made by so.

Carry out the exercise through walking around the field catchment and tank bed areas by using the charts. Through informal discussions, in the relating to the field information related to the tank system has to collect.

**DAY – 3**

**Production System**

Component	Area of Study	Secondary Data	Exercise / Tool	Checklist / Variables	Specific Outputs	Overall Outputs
Command Area	<ul style="list-style-type: none"> <li>• Canal network</li> <li>• Drainage network</li> <li>• Water mngt</li> <li>• Soil mngt</li> <li>• Crop mngt</li> <li>• Disease &amp; pests mngt</li> <li>• Ground water mngt</li> <li>• Vegetation</li> </ul>	<ul style="list-style-type: none"> <li>• Ayacutdars list</li> <li>• Soil &amp; water analysis report</li> <li>• Revenue map</li> <li>• First day output</li> </ul>	<ul style="list-style-type: none"> <li>• Seasonality diagram</li> </ul>	<ul style="list-style-type: none"> <li>• Land use</li> <li>• Water availability &amp; demand</li> <li>• Credit demand &amp; availability</li> <li>• Green Leaf Mannure (GLM) demand &amp; availability</li> </ul>	<ul style="list-style-type: none"> <li>• Understanding seasonal land use</li> <li>• Understanding seasonal water availability &amp; demand</li> <li>• Understanding seasonal GLM availability &amp; demand</li> <li>• Understanding seasonal credit availability &amp; demand</li> </ul>	<ul style="list-style-type: none"> <li>• Broader understanding on traditional &amp; current command area mngt.</li> <li>• Broader understanding shifts in mngt practices, reasons, its impact on livelihoods &amp; productivity</li> <li>• Comprehensive understanding on traditional practices which are relevant for sustainable mngt of command area and increasing production</li> <li>• Understanding of markets and post harvest handling practices</li> </ul>
		<ul style="list-style-type: none"> <li>• 1 &amp; 2 day output</li> </ul>	<ul style="list-style-type: none"> <li>• Trend analysis (separately on each aspect)</li> </ul>	<ul style="list-style-type: none"> <li>• Land use &amp; land holding</li> <li>• Canal &amp; drainage mngt</li> <li>• Soil mngt, practices</li> </ul> <ul style="list-style-type: none"> <li>• Water distribution &amp; mngt</li> <li>• Conjunctive use of water</li> <li>• Water levels, availability period, utilization pattern etc</li> </ul> <ul style="list-style-type: none"> <li>• Cropping pattern</li> <li>• Crop planning</li> <li>• Crop production practices</li> <li>• Cost of production &amp; productivity</li> </ul> <ul style="list-style-type: none"> <li>• Disease &amp; pests mngt</li> <li>• Vegetation mngt (trees, species, GLM &amp; fodder availability, utilization etc)</li> </ul>	<ul style="list-style-type: none"> <li>• Understanding decadal changes / shifts in               <ul style="list-style-type: none"> <li>○ Land holding, land use &amp; its impact on production</li> <li>○ Canal &amp; drainage mngt &amp; its impact on water use efficiency &amp; soil health</li> <li>○ Soil mngt practices &amp; its impact on soil health productivity</li> </ul> </li> <li>○ Water distribution, mngt practices &amp; its impact on water use efficiency &amp; equitable distribution to all zones</li> <li>○ Equitable usage of available water sources (tank, well etc) &amp; its impact on water storage duration, availability production &amp; livelihoods and ground waste in all zones</li> <li>○ Crop planning mechanisms &amp; its impact on production</li> <li>○ Cropping pattern v/s water availability &amp; its impact on production &amp; livelihoods</li> <li>○ Production practices &amp; its impact on productivity</li> <li>○ Cost of production &amp; its impact on economics</li> <li>○ Access to inputs and input markets</li> <li>○ Diseases &amp; pests mngt practices &amp; its impact on crop economics, productivity, soil &amp; water quality &amp; environment</li> <li>○ Vegetation &amp; its impact on soil health, forage &amp; fodder needs, crop economics &amp; environment</li> <li>○ Understanding of the agriculture practices and production systems among the vulnerable group of WUA Community.</li> </ul>	

**DAY – 3 Institutional Issues**

<b>Component</b>	<b>Area of Study</b>	<b>Secondary Data</b>	<b>Exercise / Tool</b>	<b>Checklist / Variables</b>	<b>Specific Outputs</b>	<b>Outcome</b>
Institutional mngt systems	WUA mngt systems	<ul style="list-style-type: none"> <li>• APFMIS ACT</li> <li>• Output of all the groups (O&amp;M norms)</li> </ul>	<ul style="list-style-type: none"> <li>• Pie diagram (General body &amp; Executive committee separately)</li> </ul>	<ul style="list-style-type: none"> <li>• List out all stakeholders categories</li> <li>• Demarcation of membership (SC, ST, labour etc)</li> </ul>	<ul style="list-style-type: none"> <li>• Understanding the composition of different stakeholders &amp; membership</li> <li>• Understanding involvement of vulnerable groups in WUA functioning.</li> </ul>	<ul style="list-style-type: none"> <li>• Comprehensive understanding on implementation &amp; post-implementation responsibilities</li> <li>• Comprehensive understanding of transparent internal systems for institutional sustainability</li> <li>• Evolving Resource Generation Plan for WUA</li> </ul>
			<ul style="list-style-type: none"> <li>• FGD (on internal mngt systems – EC &amp; Office bearers)</li> </ul>	<ul style="list-style-type: none"> <li>• List out all tasks of tank mngt &amp; institutional mngt</li> <li>• Delineate from tasks to specific roles, responsibilities &amp; functions of EC &amp; OC</li> </ul>	<ul style="list-style-type: none"> <li>• Understanding the overall tasks involved in day-to-day tank O&amp;M functions and WUA administration</li> </ul>	
			<ul style="list-style-type: none"> <li>• FGD (Tank system O&amp;M)</li> </ul>	<ul style="list-style-type: none"> <li>• List out all the tasks involved in O&amp;M of catchment, tank &amp; command (planning, implementation &amp; post-implementation)</li> <li>• Discussion on need for decentralization of roles, responsibilities &amp; functions</li> </ul>	<ul style="list-style-type: none"> <li>• Understanding specific tasks involved in tank mngt</li> <li>• Understanding scopes, need &amp; relevance of delegating the responsibilities to smaller committees</li> <li>• Evolving task based committees, members, functions and norms</li> </ul>	
			<ul style="list-style-type: none"> <li>• FGD (WUA administration system)</li> </ul>	<ul style="list-style-type: none"> <li>• List out seasonal tasks involved during implementation &amp; post-implementation</li> <li>• Discuss the need &amp; frequency of meetings of EC &amp; GBs</li> <li>• Discuss financial mngt systems / norms (books of accounts, internal auditing information display, statutory audit etc)</li> </ul>	<ul style="list-style-type: none"> <li>• Understanding the finalized draft O&amp;M norms</li> <li>• Understanding &amp; evolving the meeting frequency of EC &amp; SCs</li> <li>• Evolved transparent financial mngt systems</li> <li>• Assessing the readiness take up O&amp;M and pay full O&amp;M cost.</li> </ul>	
			<ul style="list-style-type: none"> <li>• FGD (on WUA sustainability)</li> </ul>	<ul style="list-style-type: none"> <li>• List out sources of financial resources to WUA (recurring &amp; non-recurring)</li> </ul>	<ul style="list-style-type: none"> <li>• Evolved resources mobilization plan for WUA sustenance</li> </ul>	
Presentation to WUA Managing Committee for triangulation (during night)						

DAY –4 Livelihoods

Group I

Component	Area of Study	Secondary Data	Exercise / Tool	Checklist / Variables	Specific Outputs	Outcome
Livelihoods	Opportunities for CIGs	Household details (population, economic profile, land holding, criteria, past & initiatives & Output of above)	Venn diagram (Health & institutional accessibility separately)	<ul style="list-style-type: none"> <li>List health issues (nutrition &amp; chronic diseases) and causes</li> <li>List out different development &amp; service institutions and analyze accessibility to CIGs like information, service &amp; benefits</li> </ul>	<ul style="list-style-type: none"> <li>Understanding on health status of vulnerable groups &amp; causes</li> <li>Identified problems &amp; impact in access to information, services &amp; benefits</li> </ul>	<ul style="list-style-type: none"> <li>Comprehensive understanding the vulnerable group status in health, institutional participation &amp; decision making</li> <li>Comprehensive understanding on vulnerable groups dependence on tank based livelihoods</li> </ul>
				<ul style="list-style-type: none"> <li>Membership in WUA, EC, SHGs &amp; other institutions</li> <li>Participation level in decision making (village affairs, tank planning &amp; other institutions)</li> </ul>	<ul style="list-style-type: none"> <li>Understanding membership, participation in institutions and decision making of vulnerable families</li> </ul>	
			<ul style="list-style-type: none"> <li>FGD (livelihoods)</li> </ul>	<ul style="list-style-type: none"> <li>Past tank based livelihood activities including crops, horticulture, livestock and fisheries etc (activity, number of households dependent, present status, causes, problems &amp; impact)</li> </ul>	<ul style="list-style-type: none"> <li>Understanding the dependence on tank based livelihood in the past &amp; present</li> </ul>	
			<ul style="list-style-type: none"> <li>Venn diagram</li> </ul>	<ul style="list-style-type: none"> <li>List out all the problems identified in Venn, ladder &amp; FGD exercises</li> <li>Prioritization of problems</li> </ul>	<ul style="list-style-type: none"> <li>Understanding the prioritized problems (participation &amp; tank based livelihoods)</li> </ul>	
			<ul style="list-style-type: none"> <li>FGD</li> </ul>	<ul style="list-style-type: none"> <li>List out all prioritized problems</li> <li>On each problem discuss opportunities, strategies &amp; interventions (include scope for traditional &amp; new tank based interventions)</li> </ul>	<ul style="list-style-type: none"> <li>Understanding the prioritized interventions on tank based economic activities (extent/scalse, families, species, costs, responsibilities, economics, benefit sharing etc)</li> <li>Identified opportunity for employment generation in tank civil works (list of planned manual activities, no.of man day, availability of skilled &amp; unskilled man power</li> <li>Assessed the training needs</li> </ul>	
Presentation to WUA Managing Committee for triangulation (during night)						

**DAY – 4**

**Trend analysis**

**Group II**

Component	Area of Study	Secondary Data	Exercise / Tool	Checklist / Variables	Specific Outputs	Overall Outputs
Tank	Physical & mngt status of <ul style="list-style-type: none"> <li>• Water spread area</li> <li>• Tank bund</li> <li>• Sluices</li> <li>• Waste weir</li> </ul>	<ul style="list-style-type: none"> <li>• Tank register data</li> <li>• Revenue map</li> <li>• Information's on past interventions by Mid / ZP / others</li> </ul>	<ul style="list-style-type: none"> <li>• Focus Group Discussion (FGD)</li> <li>• Trend analysis</li> </ul>	<ul style="list-style-type: none"> <li>○ Listing all problems of tank bund, sluices, waste weir, tank bed, foreshore, dead storage, water contamination separately from 1 &amp; 2 day output</li> <li>○ Prioritize problems on each aspect.</li> </ul>	<ul style="list-style-type: none"> <li>• Understanding &amp; identification of physical &amp; mngt problems of tank bund, sluices, waste weir, tank bed, foreshore, dead storage, waters contamination etc</li> <li>• Prioritization of physical &amp; mngt problems of tank bund, sluices, waste weir, tank bed, foreshore, dead storage, waters contamination etc</li> </ul>	<ul style="list-style-type: none"> <li>• Broader perception on tank problems, strategies and mngt</li> <li>• Comprehensive action plans evolved for renovation</li> <li>• Tank O &amp; M norms evolved</li> <li>• Long term resource generation plan evolved</li> <li>• Cultural property action plan prepared</li> <li>• Training needs of Tank area farmers identified</li> </ul>
Presentation to WUA Managing Committee for triangulation (during night)						

**DAY – 5 Planning**

**Group I**

Component	Area of Study	Secondary Data	Exercise / Tool	Checklist / Variables	Specific Outputs	Overall Outputs
Command Area	<ul style="list-style-type: none"> <li>• Canal network</li> <li>• Drainage network</li> <li>• Water mngt</li> <li>• Crop husbandry</li> <li>• Disease &amp; pests mngt</li> <li>• Ground water mngt</li> <li>• Vegetation</li> </ul>	<ul style="list-style-type: none"> <li>• Ayacutdars list</li> <li>• Soil &amp; water analysis report</li> <li>• Revenue map</li> <li>• 1 &amp; 2 day output</li> </ul>	<ul style="list-style-type: none"> <li>• Focus group discussion. And walk through</li> </ul>	<ul style="list-style-type: none"> <li>• identify list of problems                             <ul style="list-style-type: none"> <li>– Canal network</li> <li>– Drainage network</li> <li>– Water mngt</li> <li>– Soils</li> <li>– Crop planning &amp; production</li> <li>– Post harvest handling and marketing</li> <li>– Access to credit and agricultural inputs</li> <li>– Ground water</li> <li>– Vegetation</li> </ul> </li> <li>• Prioritize the problems on the above aspects</li> </ul>	<ul style="list-style-type: none"> <li>• Understanding the problems of command area on                             <ul style="list-style-type: none"> <li>– Canal network</li> <li>– Drainage network</li> <li>– Water mngt</li> <li>– Soils</li> <li>– Crop planning &amp; production</li> <li>– Ground water</li> <li>– Vegetation</li> </ul> </li> <li>• Prioritized the identified problems on the above aspects</li> <li>• Silt application strategies</li> </ul>	<ul style="list-style-type: none"> <li>• Integrated perception on command area management</li> <li>• Comprehensive command area treatment &amp; management plan</li> <li>• Command area management &amp; maintenance norms evolved</li> </ul>
			<ul style="list-style-type: none"> <li>• Matrix</li> </ul>	List out major crops.(duration, yield, cost of production, taste, fodder, diseases & pests, market, price etc)	<ul style="list-style-type: none"> <li>• Understanding the farmers preferences &amp; priorities on various crops grown in Command area</li> <li>• Involvement of vulnerable groups.</li> <li>• How to ensure the vulnerable groups.</li> <li>• Have access to tank benefits at par with others.</li> </ul>	

		<ul style="list-style-type: none"> <li>• Ayacutdars list</li> <li>• Soils &amp; water analysis report</li> <li>• Revenue map 1, 2 day &amp; Venn diagram output</li> </ul>	<ul style="list-style-type: none"> <li>• FGD</li> </ul>	<p>Preparation strategies &amp; interventions for prioritized problems on</p> <ul style="list-style-type: none"> <li>– Canal &amp; drainage mngt</li> <li>– Water mngt</li> <li>– Conjunctive use of water resources</li> </ul> <ul style="list-style-type: none"> <li>– Soil mngt</li> <li>– Vegetation mngt</li> </ul> <ul style="list-style-type: none"> <li>– Crop planning</li> <li>– Livestock &amp; fisheries and othr high value production opportunities</li> <li>– Crop mngt &amp; production practices</li> <li>– Alternate cropping (scope for crop diversification)</li> <li>– Nutrient diseases &amp; pests mngt</li> </ul>	<ul style="list-style-type: none"> <li>• Prepared action plans for canal &amp; drainage mngt (activity, extent, specification, costs, responsibilities, O&amp;M norms etc)</li> <li>• Prepared integrated water mngt plan (method of irrigation, irrigation scheduling, crops &amp; varieties)</li> <li>• Prepared contingent planning measures for low &amp; delayed rains</li> <li>• Prepared conjunctive use of water mngt plan (tank, wells etc)</li> <li>• Prepared norms for water distribution, control etc</li> </ul> <ul style="list-style-type: none"> <li>• Prepared action plan for promoting INM &amp; soil mngt (activity, extent, costs, responsibilities etc)</li> <li>• Prepared strategy action plan to promote vegetative development in private &amp; karab (species, numbers, costs, responsibilities etc)</li> </ul> <ul style="list-style-type: none"> <li>• Prepared strategy for crop planning mechanisms</li> <li>• Prepared action plan on crop production practices, increasing adoption rate of recommended practices (crop sequencing &amp; suitable farming systems)</li> <li>• Prepared alternate cropping system for crop diversification (horticulture, vegetables, floriculture etc)</li> <li>• Prepared strategy &amp; action plan for promoting integrated diseases &amp; pest mngt (crops, diseases &amp; pest, no. of farmers for demonstration etc)</li> </ul>	
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Command Area			<ul style="list-style-type: none"> <li>• Matrix</li> </ul>	<ul style="list-style-type: none"> <li>– Post harvesting practices</li> <li>– Gaps in extension gaps and other support services.</li> <li>– Expected production (crop-wise)</li> <li>– O &amp; M norms for command area mngt</li> <li>– Training &amp; demonstration needs</li> </ul>	<ul style="list-style-type: none"> <li>• Assessed problems &amp; constrains in post harvesting practices and prepared strategy for promoting improved post harvesting technologies</li> <li>• Assessed extension gaps (information flow, input services etc) and prepared strategy for bridging extension gaps and identified community resource persons for Samudhaya Thanthrika Vedike</li> <li>• Assessed expected increase &amp; economics for planned cropping pattern &amp; proposed alternative crops</li> <li>• Formulated O&amp;M norms for command area mngt on all the interventions planned including collection of water tax</li> <li>• Assessed training &amp; demonstration needs</li> </ul>	
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**DAY – 5 Planning**

**Group II**

Component	Area of Study	Secondary Data	Exercise / Tool	Checklist / Variables	Specific Outputs	Outcome
Catchment	<ul style="list-style-type: none"> <li>• Land use pattern</li> <li>• Soil management</li> <li>• Status of drainage</li> <li>• Ground water management</li> <li>• vegetation</li> </ul>	<ul style="list-style-type: none"> <li>• Use output of first &amp; second day</li> </ul>	Focus Group Discussions (FGD) on prioritized problems on land use, soils, drainage, vegetation & pastures and ground water	List identified problems on land use, soils, drainage, vegetation & pastures and ground water	<ul style="list-style-type: none"> <li>• Prioritization of problems on land use, soils, drainage, vegetation &amp; pastures and ground water</li> </ul>	<ul style="list-style-type: none"> <li>• Integrated perception on catchment area management</li> <li>• Arriving action plan for cropping system</li> </ul>
		<ul style="list-style-type: none"> <li>• Use first, second day &amp; Venn diagram outputs</li> </ul>		Identifying strategies & interventions for the prioritized problems on land use, soils, drainage, vegetation & pastures and ground water	Identified specific interventions for <ul style="list-style-type: none"> <li>• Changing cropping pattern &amp; production</li> <li>• Strengthening soil conservation structures (new &amp; old) in private &amp; common lands (type, numbers, specifications, costs, responsibilities etc)</li> <li>• Specific interventions needed for vegetation &amp; pastures development (location, extent, species wise numbers, costs etc)</li> <li>• Specific interventions for promoting perennial crops/horticulture, water conservation technologies under irrigated lands(locations, extent, crops, suitable line departments programs, responsibilities etc)</li> <li>• Maintenance &amp; management norms are evolved for all the above identified interventions (cash &amp; non-cash, frequency, costs, responsibility etc)</li> <li>• Training needs of catchment area farmers identified</li> </ul>	
		<ul style="list-style-type: none"> <li>• Use first, second day &amp; Trend analysis outputs</li> </ul>	<ul style="list-style-type: none"> <li>• Matrix</li> </ul>	Identification of species grown in area <ul style="list-style-type: none"> <li>• Forest varieties</li> <li>• Horticulture varieties</li> </ul> Conduct exercise on each category separately	<ul style="list-style-type: none"> <li>• Understanding farmers preferences of different species</li> <li>• Prioritized species of different categories</li> <li>• Preference of vulnerable groups.</li> </ul>	
	Modeling: optional exercise	All strategies and interventions identified to be depicted in modeling	A clay model of future ideal catchment area displayed on ground			

## **DAY – 6 (General body Meeting)**

- Preparation of a consolidated action plan ( in prescribed format)
- Presentation of draft plans in the WUA general body
- Specific tasks to be accomplished in WUA general body
- Ratification of each specific plan (costs & sharing, benefit sharing, time schedule, responsibility etc)
- Ratification of draft O&M norms on all aspects
- Passing unanimous resolutions on all the plans
- Finalization of follow-up action plan on the following issues:
  - Schedule for topographical survey
  - Schedule for finalization draft designs & estimates
  - Schedule for ratification of final TIMP in General body
- Fixing time for submitting of TIMP to District Level Implementation Committee
- The meeting shall be convened during evening.

## Annexure 2

### Memorandum of Understanding between WUA and District Project Director - DPU

Memorandum of Understanding (MOU) between Water Users Association (WUA) and the District Project Director (DPD) on Willingness and to establish the Roles and Responsibilities of both the parties to Implement the Andhra Pradesh Community Based Tank Management Project

This MOU is signed between \_\_\_\_\_ WUA of \_\_\_\_\_ minor irrigation project situated in \_\_\_\_\_ (village) \_\_\_\_\_ (Mandal) \_\_\_\_\_ (District) (further referred to as the WUA in the MoU) and the \_\_\_\_\_ District Project Director of Andhra Pradesh Community Based Tank Management Project (further referred to as the DPD in the MoU) on this ---\_\_\_\_\_(Day) of \_\_\_\_\_(Month) \_\_\_\_\_(Year).

Both the parties have desired to put in writing the contents of the MoU as follows:

#### 1. Objectives of MOU

With the intention to provide meaningful role to WUA in the management of minor irrigation tanks, the Government of Andhra Pradesh has enacted the Andhra Pradesh Farmers Management of Irrigation System Act, 1997. As per the APFMIS Act, for the purpose of management of the minor irrigation tanks, the demarcated command area under the tank is transferred to the concerned WUA till the stipulated period (the map showing the command area is appended with the MoU). The task of management of the minor irrigation tank includes the operation and maintenance of the tank system, equitable distribution of water to all command area farmers, resolving any disputes that may arise thereof and collection of the water charges from the command area farmers and plough it back for the purpose of O&M. However, the ownership of the structures constructed for water management, the feeder channels and the lands acquired continues to rest with the Irrigation Department.

The objective of transferring the responsibility of management of minor irrigation tanks to the WUA is to ensure maximum water use efficiency and increase in productivity. Towards this, I&CAD Department is implementing the Andhra Pradesh Community Based Tank Management Project under which the tanks are proposed to be restored to their design standard by facilitating the participation of the WUAs in the process of their restoration and there management thereafter.

Therefore the objective of executing this MoU is to arrive at an agreement between the WUA and the I&CAD Department in understanding and establishing the roles and responsibilities of the respective parties in undertaking improvement of the tank system under the Andhra Pradesh Community Based Tank Management Project and for future management.

#### 2. Roles and Responsibilities of WUA:

WUA agrees to

1. mobilize community contribution for the project from among the tank users at the rate of 10 percent of the total civil works (5 percent in cash and 5 percent in kind). The 5 % contribution in cash will be deposited in the WUA O&M Account for future O&M activities

2. prepare a Tank Improvement and Management Plan to carry out restoration and revival of the tank system
3. supervise and actively participate the TIMP implementation
4. assist the Revenue Department in making assessment of demand for water charges and collection of water charges from its members as per the rates notified by GoAP from time to time
5. undertake management and O&M works of the tank system from the water charges collected as per the provisions of the APFMIS Act (1997) covering the following activities:
  - i. desilting (feeder channels, irrigation channels and tank bed if required)
  - ii. jungle clearance in the tank system
  - iii. embankment repairs
  - iv. revetment
  - v. repairs to shutters
  - vi. repairs to masonry and lining
  - vii. cleaning and oiling of screw gears and gate grooves
  - viii. emergent breach closing works
  - ix. reconstruction/ repairs of sluices
  - x. reconstruction / repairs to drops and regulators
  - xi. repairs to waste weir and surplus system
6. distribute water among all the tank users equitably
7. create an awareness on economic use of water and promote efficient water use technologies & practices among the tank users
8. collectively prepare water use and agricultural plans for each irrigation season
9. arbitrate and resolve any disputes over distribution of water among the tank users
10. prevent future encroachment and protect tank system
11. maintain execution of works and supervise the quality
12. open and operate two bank accounts in any Nationalized Bank
  - i. O&M Account: for depositing water charges collected, O&M funds, 5 % contribution towards share of the WUA in rehabilitation of the tank. This account will be operated jointly by WUA President and Vice President, on behalf of the WUA Managing Committee
  - ii. Works Account: for the purpose of rehabilitation works taken up by the WUA under the project. This account is to be operated jointly by WUA President (on behalf of the WUA Managing Committee) and the project technical staff (DPU staff co-opted into the works sub-committee)
13. maintain regular ledgers and accounts of the WUA as required under the project
14. perform any other functions to accomplish the objectives of the project as and when required under the project

### **3. Role and responsibilities of District Project Director (DPD):**

It is agreed that DPD is willing to:

1. provide finances, resources, technical support, supervision and training to WUA to carry out restoration and revival of the tank system
2. provide finances, technical support, supervision and training to WUA to carry out all WUA functions and activities listed above
3. ensure quality of civil works carried out under the project
4. provide continued technical support, supervision and training to the WUA subsequent to the handing over of the tank system to the WUA

5. provide resources to carry out repairs of the tank system for damages caused by natural calamities, subsequent to restoration

**4. General Conditions of the MoU**

This MOU is executed voluntarily between the WUA and the DPD without any undue influence and duress on either of the parties.

In implementation of the MoU, the working systems and procedures will be as per the provisions under the Andhra Pradesh Farmers Management of Irrigation System Act (1997) and the rules and orders issued by the Irrigation and CAD Department, GoAP related to the Act and the Project Implementation Plan of the Andhra Pradesh Community Based Tank Management Project.

Any dispute between the WUA and the DPD shall in principle be resolved through mutual negotiation and consensus. In case the two parties fail to resolve the dispute, it shall be referred to the District Collector and his decision shall be final and binding on both the parties.

This MoU can be terminated by either of the parties with sufficient prior notice of three months of intend in writing by stating the causes related to breach of conditions of the MoU. The other party shall be provided sufficient time to present their case before the termination procedure is initiated.

**5. Duration of the MoU**

This MOU will be in force for a period of \_\_\_\_\_ years from \_\_\_\_/\_\_\_\_/\_\_\_\_ (dd / mm / yyyy) to \_\_\_\_/\_\_\_\_/\_\_\_\_ (dd / mm / yyyy).

In acceptance to the above contents of this MoU, the WUA through its representative and the DPD give their consent to enter into the MOU. In the presence of two witnesses, both parties hereby put their hands and seals / rubber stamp on the MoU in two copies, one each to be retained by either of the party, on this day of MoU as mentioned above.

**On behalf of WUA**

**District Project Director**

**President WUA**

**Executive Engineer**

**Witness 1**

**Witness 2**

Signed this day, the \_\_\_\_/\_\_\_\_/\_\_\_\_ (dd / mm / yyyy).

## Annexure 3

### Training Needs Assessment

#### Planning stage

Stakeholders	Role & responsibility	Capacity Building Needs
<b>WUA members</b>	<ul style="list-style-type: none"> <li>▪ To attend WUA village meetings organized to discuss the project.</li> <li>▪ To set our group norms for membership, meeting schedule, Book writings, etc.</li> <li>▪ To discuss about household and village problems and think what can the project do.</li> </ul>	<ul style="list-style-type: none"> <li>▪ To learn how members can work for the project</li> <li>▪ To learn how WUA can analyze tank problems and plan for it.</li> </ul>
<b>WUA Managing committee</b>	<ul style="list-style-type: none"> <li>▪ Coordinate and facilitate Transact, PRA and data collection.</li> <li>▪ Actively involve in Preparation of TIMP</li> <li>▪ Identification of FFS , para-workers, book writers etc.</li> <li>▪ Formation of sub committees</li> </ul>	<ul style="list-style-type: none"> <li>▪ Orientation on PRA and data collection method</li> <li>▪ Orientation on TIMP preparation and its submission.</li> <li>▪ Role of Para workers, bookkeepers and their selection process. Importance of FFS.</li> <li>▪ Process of formation of 4 types of sub committees and their roles</li> </ul>
<b>Panchayat (President and ward members)</b>	<ul style="list-style-type: none"> <li>▪ To help WUA in information collection and planning Process.</li> <li>▪ To explore the possibilities of using GP funds for tank restorational activities, not covered under the project.</li> </ul>	<ul style="list-style-type: none"> <li>▪ To know how WUA can function and what are the interrelated items</li> <li>▪ To understand tank related problems and data required for it</li> </ul>
<b>Book keeper</b>	<ul style="list-style-type: none"> <li>▪ Book keeping</li> </ul>	<ul style="list-style-type: none"> <li>▪ Book keeping and minutes writing.</li> </ul>
<b>Sub committee</b>	<ul style="list-style-type: none"> <li>▪ Identifying the issues pertain to each sub committee to improve the quality of the work and tank management.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Preparation of the plan and bookkeeping.</li> </ul>

### Implementation stage

Stakeholders	Role & responsibility	Capacity Building Needs
<b>WUA members</b>	<ul style="list-style-type: none"> <li>▪ Active participation</li> <li>▪ Transparency and Accountability</li> </ul>	<ul style="list-style-type: none"> <li>▪ Exposure visits on better practices for selected members</li> </ul>
<b>WUA managing committee</b>	<ul style="list-style-type: none"> <li>▪ Help in sub committees formation (wherever not exists)</li> <li>▪ Technical inputs</li> <li>▪ Proper execution of works</li> <li>▪ Supervision and monitoring</li> <li>▪ Ensure timely execution</li> <li>▪ Conflict resolution</li> </ul>	<ul style="list-style-type: none"> <li>▪ Special training of watershed and livelihood activities</li> <li>▪ Training on procurement</li> <li>▪ Training on peoples estimation</li> <li>▪ Exposure visits</li> <li>▪ Using of Participatory monitoring tools</li> </ul>
<b>Para workers</b>	<ul style="list-style-type: none"> <li>▪ Development of demo plots</li> <li>▪ Development of business plans</li> </ul>	<ul style="list-style-type: none"> <li>▪ Better irrigation and agricultural practices</li> <li>▪ Knowledge on plan preparation and execution.</li> </ul>
<b>Model farmers</b>	<ul style="list-style-type: none"> <li>▪ Adoption of ID crops /new cropping pattern</li> </ul>	<ul style="list-style-type: none"> <li>▪ Agronomic practices of ID and new crop methods</li> </ul>
<b>Sub committees</b>	<ul style="list-style-type: none"> <li>▪ Implementation of the plan</li> </ul>	<ul style="list-style-type: none"> <li>▪ Resource mobilization and implementation of O&amp;M plan.</li> </ul>

### Post Implementation stage

Stakeholders	Role & responsibility	Capacity Building Needs
<b>WUA managing committee</b>	<ul style="list-style-type: none"> <li>▪ Community based WUA monitoring</li> <li>▪ Social audit</li> <li>▪ Water Audit and crop planning</li> </ul>	<ul style="list-style-type: none"> <li>▪ Monitoring process and monitoring through conducting the PSA charts</li> </ul> <p>Process of water audit and crop water requirements. Soil types and water needs.</p>
<b>Sub committees</b>	<ul style="list-style-type: none"> <li>▪ Water management, resource mobilization, O&amp; M</li> <li>▪ Proper record keeping</li> <li>Timely reporting</li> </ul>	<ul style="list-style-type: none"> <li>▪ Monitoring and conducting PSA</li> <li>▪ Refreshing training on subject wise trainings.</li> </ul>

## Annexure 4

### Agreement on TIMP Implementation between WUA and DPD of DPU

In continuation to the MoU signed between the \_\_\_\_\_ WUA and the DPD, District \_\_\_\_\_ dated \_\_\_\_\_ the WUA has prepared the enclosed TIMP, which has been adopted by the General Body of the WUA vide. Resolution No. \_\_\_\_\_ passed in the General Body meeting held on \_\_\_\_\_ (date). Under the TIMP, the WUA proposes to take up the following activities towards revival and restoration of the tank system. The total cost estimate for the TIMP is Rs. \_\_\_\_\_ (Rs. \_\_\_\_\_ and the community contribution Rs. \_\_\_\_\_ (Rs. \_\_\_\_\_) as per the details below.

Sl. No.	Name of Activities	Estimated Cost (Rs)	Estimated Community Contribution (Rs)	
			5 % Cash	5 % Kind
1.				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
	<b>TOTAL</b>			

The details of the activity design and cost estimates, the implementation schedule and the procurement plan are provided in the attached TIMP.

The WUA agrees to utilize the funds sanctioned for implementation of the TIMP as per the

approved designs and estimates and according to the implementation and procurement norms of the project.

In turn, The DPD agrees to provide to the WUA the required funds, resources, technical support, supervision and training to implement the TIMP.

In acceptance to the above contents of this Agreement, the WUA through its representative and the DPD give their consent to enter into the Agreement. In the presence of two witnesses, both parties hereby put their hands and seals / rubber stamp on the Agreement in two copies, one each to be retained by either of the party, on this day of Agreement as mentioned above.

**On behalf of WUA**

**District Project Director**

**President WUA**

**Executive Engineer**

**Witness 1**

**Witness 2**

Signed this day, the \_\_\_\_/\_\_\_\_/\_\_\_\_ (dd / mm / yyyy).

## Annexure 5

<b>Participatory Situation Analysis (PSA) brief note</b>					
<b>Sr No</b>	<b>Parameter Description</b>	<b>RED</b>	<b>YELLOW</b>	<b>BLUE</b>	<b>GREEN</b>
1	No of Management Committee meetings held annually	Managing Committee Meeting < 6	Managing Committee Meeting > 6	Managing Committee Meeting > 9	Managing Committee Meeting > 12
2	General body meetings	General Body Meeting = Nil	General Body Meeting = 1	General Body Meeting > 1	General Body Meeting > 2
2	% farmers participating in AGM (wall writings, accounts, Records)	<30% farmers participated	31-50% farmers participated	>50% farmers participated	>60% farmers participated
3	Wall writings up dated	WUA farmers not aware of financial details	Only TC members aware of financial information	Finance information displayed in common place for all WUA farmers	Details of expenses read in AGM, social audit and all WUA farmers aware
4	Water Use Efficiency per MCFT (duty)	Duty < 5	Duty 5-<8	Duty 8-10	Duty >10
5	Area under second crop	<25%	25-50%	51-80 %	>80%
6	Tax collection (self sufficiency, O&M MR)	<50%	51-75 %	76-95%	>95%
7	Additional resources mobilisation (higher tax rates, other means)	Nil mobilisation	Upto 20% of tax amount	>20 ~ 50% of tax amount	>50% tax amount
8	Updation of records	No records maintained	Records maintained occassionally	Records maintained but not updated	Update and used for MIS report preparation
9	Joint azmoish (estimation of tax collection)	No joint azmoish and TC Members, Farmers not aware of tax demand.	Joint azmoish done by Departmental staff and TC Members, Farmers not aware of tax demand.	Assessment done by the Dept. Staff before harvest, Members and Farmers aware of tax demand	Joint assessment by TC Members before harvest, Farmers & TC Members aware of tax demand

<b>Participatory Situation Analysis (PSA) brief note</b>					
<b>Sr No</b>	<b>Parameter Description</b>	<b>RED</b>	<b>YELLOW</b>	<b>BLUE</b>	<b>GREEN</b>
10	Warabandi implementation	Continuous flow as per water availability	Informal arrangements for water distribution	Datewise schedule prepared and followed occassionally	Datewise schedule prepared and followed
11	Implementation of Water release schedule	NO plan prepared and farmers not aware of water release schedule	Preparation of plan and followed upto 50% schedule	15 % variation	Announced release schedule followed
12	Tail end issues & adequacy of water received by the tail ends	less than 50% of identified Tailend areas receive inadquate or no water	51-75 % or more of identified Tailend areas receive adequate water	75-90 % or more of identified Tailend areas received adequate water	90 % or more of identified Tailend areas received adequate water
13	Conflict resolution	Conflicts exist, not resolved	Conflicts exist, discussed not resolved	Conflicts exist, discussed, partially resolved	No conflicts, Managing Committee resolves all issues.
14	O&M works	O&M works not done	O&M works plan prepared WUA awaits for funds	O&M works done by the department	TC & WUA plan and compleate O&M works before monsoon
15	Innovations in water management, water sharing, Conjunctive use, Water Audit, Collective action, Cropping practices (SRI, ID, Horti) etc.,	Not discussed and not implemented	New practices discussed and introduced	New practices discussed, introduced and 50% adopted	New practices discussed, introduced and 100% adopted.

**Annexure 6**  
**Format for Social Audit**

S.No.	Structure	Problems	Reasons	Activity taken	Value of work	Imp Agency	Progress
1	Catchment	1	Highly encroached and disturbed				
		2	Disturbed				
		3	Encroached				
		4	No problem				
2	Feeder channel	1	Highly blocked & disturbed				
		2	Not much blocked				
		3	Good condition				
3	Tank bed	1	Heavily silted				
		2	Moderately silted				
		3	Unilted				
		4	Heavy tree growth				
		5	Heavily weeded				
		6	Moderately weeded				
		7	No weeds				
4	Tank Bund	1	Breached				
		2	Badly dilapidated				
		3	Moderately dilapidated				
		4	Fairly good				
		5	Good				
		6	No problem				
5	Sluice(s)	1	Not working and need(s) replacement	□			
		2	Dilapidated and need(s)major repair				
		3	Good / minor repairs				
		4	No problem				
6	Waste weir	1	None existent				
		2	Needs replacement				
		3	Major repair				
		4	Good/minor repair				
		5	No problem				
7	Canal system	1	Non-existent				
		2	Main canal not adequate				
		3	MC needs repairs				
		4	MC needs extension				
		5	Canal is intact/good condition				

## Annexure 7

### WUA Rating Minor Irrigation Tanks

S. No	Items	Total marks	Criteria	Marks	Marks obtained
<b>I</b>	<b>Water Distribution</b>	<b>45</b>			
	i. Rotation/ Warabandi	10	a) Advance Water distribution schedule prepared with dates and adopted by WUA.	10	
			b) Warabandi will be in practice either on irrigation officials insist or during water scarcity.	5	
			c) No regulation on water.	0	
	ii. Tail end area receiving water. .	10	a. 90 % above tail end area receiving water and additional area brought under cultivation.	10	
			b. 75 to 90 % tail end area receiving water.	5	
			c. Tail end area problem persists.	0	
	iii. Area under Rabi crop	5	a. > 80% command area	5	
			b. 36-80%	3	
			c. Upto 35%	0	
	iii Water user Efficiency (Ac/ Mcft)	10	a) 8 ac/mcft and above	10	
			b) 5 to 8 ac/ mcft	5	
			c) below 5 mcft	0	
	iv. Innovations in water management and cropping patten	10	a) New practices discussed, introduced and adopted by >75% for cropping & 100% for water management	10	
			b) New practices discussed, introduced and adopted 50 percent	5	
			c) No New practices discussed, introduced and adopted	0	
<b>II</b>	<b>OPERATION &amp; MAINTENANCE AND TAX COLLECTION</b>	<b>25</b>			
	i.O&M works implementation	5	a) Plans for normal O&M prepared and implemented by WUA	5	
			b) Plans prepared by Dept and done by WUA	3	
			c) NO O&M plans and works not done	0	
	ii.Conflict Resolution	5	a) Management Committee resolves coonflicts successfully	5	
			b) Conflicts exist, discussed by WUA but partially resolved	3	
			c) Conflits persist, not resolved	0	
	iv. Joint Azmoish of water charges	5	a) Both WUA and CA participation in Joint ajomish every crop season.	5	
			b) Secretary will assess by his own	3	

S. No	Items	Total marks	Criteria	Marks	Marks obtained
			c) No assessment	0	
	v. Water charges collection	10	a) 90 % above tax collected	10	
			b) 40 to 89 % tax collected	5	
			c) below 40 % tax collected	0	
<b>III</b>	<b>MANAGEMENT</b>	<b>30</b>			
	i. Management Committee Meetings	5	a) Managing committee meetings held > 10	5	
			b) Managing committee meetings held > 6- 10	3	
			c) Managing committee meetings held < 6	0	
	ii. Attendance ( General body meetings)	5	a) > 85 % attendance	5	
			b) 50 to 85 % attendance	3	
			c) < 50%	0	
	iii. Maintenance of Records	10	a) Necessary Records maintained, updated with nominated book writer.	10	
			b) Necessary Records maintained on adhoc basis.	6	
			c) No records maintained.	0	
	iv. Transparency	5	a) Reading of income and expenditure particulars in meetings and displayed at public places.	5	
			b) Only TC members know about WUA activities and display boards are fixed not updated.	3	
			c) President of WUA and few others know about the WUA matters	0	
	v. Status of distribution network	5	a) Farmers .maintain the network on regular basis	5	
			b) Irrigation officials maintain on availability of funds	3	
			c) Inadequate maintenance	0	
		<b>100</b>			