



# **WATER USER ASSOCIATION (PANI PANCHAYAT) MANUAL**



**Odisha Integrated Irrigation Project for Climate Resilient Agriculture (OIIP CRA)  
Odisha Community Tank Development and Management Society (OCTDMS)  
Department of Water Resources  
Government of Odisha**

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## Abbreviations

ABSO	Agribusiness Support Organization
ATMA	Agriculture Technology Management Agency
CB	Capacity Building
CBP	Capacity Building Plan
CC	Chak Committee
CCC	Cascade Coordination Committee / Council
CIFA	Central Institute of Freshwater Aquaculture
CIFRI	Central Inland Fisheries Research Institute
CIFT	Central Institute of Fisheries Technology
CNA	Capacity Need Assessment
DLPMT	District Level Project Monitoring Team
DM	District Magistrate
EC	Executive Committee
EE	Executive Engineer
FISHCOPFED	National Federation of Fisheries Cooperatives Ltd.
FPO	Farmer Producer Organization
GB	General Body
GP	Gram Panchayat
GPDP	Gram Panchayat Development Plan
IIAP	Integrated Irrigation and Agriculture Plan
IIP	Irrigation Improvement Plan
INM	Integrated Nutrient Management
IPM	Integrated Pest Management
IPNM	Integrated Plant Nutrient Management
JE	Junior Engineer
KVK	Krishi Vigyan Kendra
LIP	Livelihood Improvement Plan
MI	Minor Irrigation
MoU	Memorandum of Understanding
NGO	Non-Government Organization
NREGP	National Rural Employment Guarantee Program
O&M	Operation and Maintenance
OCTDMS	Odisha Community Tank Development and Management Society
OCTMP	Odisha Community Tank Management Project
OIIPCRA	Odisha Integrated Irrigation Project for Climate Resilient Agriculture
OPDC	Odisha Pisciculture Development Corporation Ltd.



OPPA	Odisha Pani Panchayat Act
OPPR	Odisha Pani Panchayat Rule
OUAT	Odisha University of Agriculture and Technology
PD	Project Director (OIIPCRA)
PDO	Project Development Objective
PFCS	Primary Fishermen Cooperative Societies
PGM	Participatory Groundwater Management
PIM	Participatory Irrigation Management
PIP	Project Implementation Plan
PP	Pani Panchayat
PRA	Participatory Rural Appraisal
SE	Superintending Engineer
SHG	Self-Help Group
SMSU	Strategic Management Support Unit
SO	Support Organization
SPMU	State Project Monitoring Unit
SSIP	Stakeholder Specific Intervention Plan
WR	Water Resources (Department)
WSHG	Women Self Help Group
WUA	Water User Association



## Section I: Introduction and Project Overview

### 1.1 Project Background

The Government of Odisha has been emphasizing upon improving irrigation coverage through water conservation, distribution and management of both surface and ground water in order to augment agricultural production and productivity. In this context, the Department of Water Resources, Govt. of Odisha has proposed to take up OIIPCRA project with the support of the World Bank. The proposed project would focus on improving irrigation performance of the cascades / tanks, attending irrigation efficiency, increasing crop water productivity, climate change adaptation and making agriculture more resilient to adverse impacts of climate variability. The project intends to benefit all the water users in a cascade / tank, who are directly and/or indirectly dependent on it.

The key principles underlying the design of the project are (1) a decentralized setting where the farmers in the tank command play a proactive role in planning, implementing and sustaining project interventions, (2) improve farm income through intensification and diversification

of selected commodities with good market potential through a sustainable value chain approach, (3) improving the resilience of the farming system in at least 10.0 percent of the cultivable area, investing in tanks and cascades, (4) building sustainable community level institutions like PP / WUA, FPO, PFCS and women SHGs to institutionalise and integrate irrigation in agricultural planning process that will enhance income of the small holders, (3) improving agricultural productivity and farmer's income, access to improved agricultural technologies and practices, facilitation of market linkages for agricultural producers and crop diversification in agriculture. Overall, the project principles of OIIPCRA remains to improve irrigation efficiency, enhance water productivity, demand side management of water resources, crop water budgeting and crop planning, adoption of climate resilient agricultural technology and practices and making agriculture and irrigation more adoptive to climate variability. So, the project basically revolves around the capacity building, livelihood promotion and institutional strengthening by which the impact of climate variability can be minimised. Structural improvement, i.e., improvement of irrigation structures of the tanks

and supply channels perceived to be the means in order to attain these key project results.

## 1.2 Project Development Objective (PDO)

The Project Development Objective (PDO) is “to intensify and diversify agricultural production, enhance climate resilience and improve water productivity in selected districts of Odisha”<sup>1</sup>.

## 1.3 Project Components

The project has four components, i.e., (1) **Project Component 1:** Climate-Smart Intensification and Diversification of Production, (2) **Component 2:** Improving Access to Irrigation and Water Productivity, (3) **Component 3:** Institutional Capacity Strengthening, and (4) **Component 4:** Project Management. The Component-1 has three sub-components, i.e., (1) **Sub-component 1.1:** Support to Improved Productivity and Climate Resilience, (2) **Sub-component 1.2:** Support to Aquaculture Production and (2) **Sub-component 1.3:** Support to Diversification and Produce Marketing. The Component-2 has two sub-components, i.e., (1) **Sub-Component**

**2.1:** Support to Water Sector Reforms, and (2) **Sub-Component 2.2:** Support to Investments in Cascades.

## 1.4 Project Management

### 1.4.1 State Level

The project at the state level will be implemented by the Water Resources Department of Government of Odisha. The Project will be headed by the State Project Director, OIIPCRA, Department of Water Resources, Government of Odisha. The project implementation and related policy aspects will be guided by a Project Steering Committee, which will be constituted at the project level, headed by the Chief Secretary as the Chairperson. The Principal Secretary, Water Resources Department, will be the Convener of the Project Steering Committee.

At the State level, the Odisha Community Tank Development and Management Society (OCTDMS), Water Resources Dept., Govt. of Odisha will be the state level agency responsible for the implementation of the project. For smooth implementation of the project and to

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<sup>1</sup> With reference to PAD of OIIPCRA, March 4, 2019





provide required guidance from time to time, there will be a State Project Monitoring Unit (SPMU), comprising experts in different sectors / sub-sectors. The SPMU will be headed by the State Project Director.

### 1.4.2 District Level

At the district level, the Project Director of ATMA (Agriculture Technology Management Agency) will be the nodal officer to execute the project activities and coordinate the activities with the office of Deputy Director, Agriculture; Deputy Director, Horticulture; and Deputy Director, Fishery. She / he will be a part of the DLPMT to monitor and supervise the activities at the district level and funds will be routed through the office of PD-ATMA for agricultural and horticultural activities. For overseeing and coordinating implementation of project activities, the office of the PD-ATMA will have a Strategic Management Support Unit (SMSU). The SMSUs will have sanctioned human resources to facilitate the process.

Every project district will have a District Level Project Monitoring Team (DLPMT) to monitor the project activities on regular basis. The DLPMT will comprise of (1) Executive Engineer of Water Resources Department, (2) Deputy Director, Agriculture; (3) Deputy Director, Horticulture; and (4) Deputy Director, Fisheries apart from PD-ATMA. The Collector and DM of the district will be the chairperson of the DLPMT. The team will meet every month at the district level and will review the project progress as per the monthly plan. The committee will appraise to the Collector and DM on the progress of the project during quarterly review and planning exercise.

### 1.4.3 Cascade / Tank Level

At the cascade / tank level, different organizations / institutions will be associated in the implementation of project activities, such as;

1. Pani Panchayat (PP) / Water User Association (WUA);
2. Farmer Producer Organization (FPO);
3. Primary Fisheries Cooperative Societies (PFCS);
4. Women Self-Help Groups (WSHG); and
5. Support Organizations (SOs).

Different technical institutions will be associated at different stages of project implementation and supporting on technical aspects. Technical institutions to be associated are;

1. Odisha University of Agriculture and Technology (OUAT);
2. Central Inland Fisheries Research Institute (CIFRI);
3. Central Institute of Freshwater Aquaculture (CIFA);
4. College of Fisheries, OUAT;
5. Odisha Pisciculture Development Corporation Ltd. (OPDC);
6. Agriculture Technology Management Agency (ATMA);
7. Central Institute of Fisheries Technology (CIFT);
8. National Federation of Fishers Cooperatives (FISHCOPFED);
9. Any other institution/s identified later during implementation.

The project intends to involve Support Organizations (SO) at the project village level to facilitate execution of project activities. The Support Organizations (SO) are state/district level NGOs having sector level subject matter experts involved in the rural development programs at the grassroots level, working with the community. The role of the SO is to facilitate the project implementation process through social mobilization at the tank/cascade level, in association with PPs/PFCSs/FPOs/SHGs and implementing line Departments. The SOs will perform different activities such as Awareness creation, Community Mobilization, Supporting and Strengthening PPs/PFCSs/FPOs/SHGs etc. The SOs will provide necessary support for capacity building of the PPs / WUAs / other community organisations on project aspects. They will facilitate effective communication and knowledge sharing with the PP / WUA / other community organisations along with delivering any other task as assigned by the SPMU-OIIPCRA.

## **1.5 The PP/ WUA Manual and its Objective**

The purpose of the Operational manual for Pani Panchayat (PP)/ Water User Association (WUA) is to facilitate effective participation of PP/ WUA in OIIPCRA project. The manual will help in understanding the role and functions of the PP / WUA in the context of the project to be implemented at the cascade and tank level. It will guide the PP/ WUA to function as per the need to meet the objectives of the project and make the project to achieve its development objective. It will also be helpful for the PPs/ WUA in cascade /tank level planning and implementation of the Integrated Irrigation and Agriculture Plan (IIAP).

The manual describes the various stakeholders of the tank system, the roles and responsibilities of PP and the financial and technical arrangements of the project. It also describes the capacity development measures to be taken under the project for the PPs and other stakeholders in the project. The manual also discusses on fund flow arrangement, water charge collection, etc. which will help the PP in implementing the project effectively and sustaining it beyond the life of the project.

The PP/ WUA Operational Manual is primarily an information booklet providing guidelines on what PP/ WUA will do and how it will implement the project. It systematically presents the concepts, processes, and procedures related to the project. For easy use of the manual, it is structured as a step-by-step approach in this document. As the PP/ WUA manual is having a direct linkage with the OPPA, 2002 and OPPR, 2003, the Act and Rules may be referred.

## **1.6 Key Project Activities**

The project intends to take up a number of activities that will improve the water use efficiency, water productivity, conservation and efficient management of available surface and ground water, facilitating promotion of climate resilient agricultural practices and its improved adoption and livelihood promotion. Broad activities proposed under the project for execution are as follows (refer PIP for details).

1. Preparation of Integrated Irrigation and Agriculture Plan (IIAP);
2. Strengthening of PP / WUA;
3. Promotion of water budgeting and crop planning;

4. Restoration of the bund, sluices, weirs (surplus arrangements), feeder channels, distributary system etc.;
  5. Promotion of fishery through fishermen's cooperative societies;
  6. Participatory hydrological monitoring;
  7. Promotion of climate resilient agriculture production systems / technologies;
  8. Farm mechanization
  9. Strengthening Farmers Producer Organizations (FPOs) for agri-business promotion;
  10. Improved post-harvest technology, supply chain and value chain improvement.
- 1.7 Project Benefits**

The project is for all the PP / WUA members / water users in 538 tank command who are directly or indirectly dependent on tank and are willing to participate in its restoration for its efficient use and improve their livelihood. The project intends to benefit a range of stakeholders such as farmers of different holding groups in both command and non-command of the tank, fishermen, landless families, women farmers etc. who are expected to be the primary beneficiaries of the project.

While the project will focus on improving the irrigation scenario in the cascade / tank system, it will adopt participatory approach in its execution process. The project will engage local community through their community organizations for improving irrigation and socio-economic condition of the people. The PP/ WUA, as a community level organization of the farmers, will be associated directly in the process as a planner, implementer and beneficiary of the

project intervention. The project is expected to benefit the PP/ WUA in the following manner.

1. Strengthening the PP/ WUA to operate and manage the irrigation system;
2. Modernization of irrigation infrastructure including irrigation canals;
3. Improving water productivity and efficiency thereby improving irrigation coverage;
4. Promotion of climate resilient sustainable agriculture practices;
5. Facilitate in promoting agribusiness with forward and backward linkages;
6. Promotion of fishery to benefit the fishermen community;

The planned interventions will be helpful to enhance income of the farmers with higher production and productivity. Agribusiness and value chain improvement will add to the price realization of the farmers and fishers in the command and non-command area. Improved physical condition of the tank systems in the cascade will help to conserve more water as per the design which will facilitate improved irrigation coverage. The strengthened PP/ WUA will plan and manage the water resources, along with collection of revenue from the farmers and reutilizing it for the operation and maintenance of the tank systems. The decentralized management system will help to bring ownership of the people and motivate them to adopt water saving mechanism and climate resilient practices. The agribusiness initiative will further improve market access, strengthen supply chain management and create opportunities for value addition.









## Section II: PP / WUA and its Management

### 2.1 Introduction

Odisha, is an agricultural state with more than 60.0 percent population directly dependent upon agriculture for their livelihood. High dependency on agriculture also demands efficient and equitable supply and distribution of water and its optimal utilization by the farmers to improve agricultural production. Along with this, it is also required scientific and systematic development and maintenance of irrigation infrastructure and its maintenance by which water will be made available to the farmers. It is realized that decentralized system of operation and management of irrigation structures and water distribution networks will yield better result where farmers will participate and take up the ownership of irrigation systems at their field level. Participatory Irrigation Management (PIM) was conceived as the vehicle to improve water distribution mechanism and attending water use efficiency along with maintenance of the structures. Instead of individual approach to operation, management and maintenance of the irrigation systems, a collective approach with mutual accountability principles was thought of. With effective irrigation management, the

project intends to improve area under crop coverage during Rabi season, along with crop diversification for higher income of the farmers.

It is planned to promote farmers organizations, in shape of Pani Panchayat / Water User Association, who will take up required responsibility for water distribution, management and maintenance of the irrigation structures. The farmers' Organizations have to be given an effective role in the management and maintenance of the irrigation system for equitable and dependable supply and distribution of water. In this context, the Orissa Pani Panchayat Act, 2002, was enacted to ensure participation of the farmers' / water users in the management of irrigation systems and for matters connected therewith or incidental thereto (The Orissa Gazette, No.1053, 8 July, Cuttack: 2002).

The objective of the PP / WUA is "to promote and secure distribution of water among its users, adequate maintenance of the irrigation system, efficient and economical utilization of water to optimize agricultural production, to protect the environment, and to ensure ecological balance by involving the farmers, inculcating a sense of

ownership of the irrigation system in accordance with the water budget and the operational plan”.

## 2.2 Operational Jurisdiction of the PP / WUA

Area of operation, in relation to PP / WUA means a contiguous patch of land in the commanded area of an irrigation system, which is notified for the purposes as per the provisions of the OPP Act, 2002. The act stipulates that the Superintending Engineer (SE) of an irrigation project may by notification and in accordance with the rules made under the Act, delineate every commanded area under each of the irrigation systems on a hydraulic basis ordinarily between 300 to 600 hectares which may be considered administratively viable; and declare it to be the area of a Pani Panchayat. Every Pani Panchayat's area shall be comprised of several Chaks which shall, as far as possible, cover the area irrigated by one outlet. As per the act, the number of Chaks shall not be less than four or as may be specified by the concerned Superintending Engineer<sup>2</sup>.

The PP Rule, 2003 specifies that the PP area may be less than 300 hectares but shall not be less than 40 hectares in case of Minor Irrigation Flow Project. Further, the Pani Panchayat area shall avoid critical patches such as hills, rocks, sand dunes etc. In case of WUA, if the project intends to promote or strengthen such community institutions, same principles / rules will be applicable.

<sup>2</sup> In respect of the commanded area under lift irrigation systems, the entire commanded area may, as far as possible, form a single area of Pani Panchayat and may be notified as such by the concerned Executive Engineer of Orissa Lift Irrigation Corporation (OLIC).

<sup>3</sup> In case of lift irrigation points, there is no necessity of formation of any chak for constituting a Pani Panchayat having a commanded area of less than 40 hectares.

## 2.3 Membership in the PP / WUA

On constitution of PP, the act stipulates that all the water users who are land holders in the area of a Pani Panchayat would be the member of the PP / WUA and will constitute the General Body of the PP<sup>3</sup>. The OPPA (amended), 2008, has made a provision by which fishermen of that area may be admitted as member of the PP where the area of any PP comes under a minor irrigation system. However, Government may, by notification, nominate at-least one officer each from Department of Water Resources, Department of Agriculture and Farmers' Empowerment, Department of Revenue & Disaster Management to be members of the Pani Panchayat without having voting right.

## 2.4 Functions of the PP / WUA

The PP / WUA will take up different functions, keeping the interest of the members in its core and in sustainable and environment friendly manner. The PP rule, 2003 stipulates certain functions of the PP adhering to the overall objective of the formation of PP as per OPPA, 2002. The functions of the PP / WUA in the project area would be;

1. Functioning in a democratic manner through consensus respecting the rights and duties of all members;
2. Make PP/ WUA a viable, vibrant and functioning entity;

3. Emphasize in making water available to the tail end areas;
4. Ensure collection of dues and make prudent investment of their resources;
5. Utilize their assets in a manner that is essential, productive, beneficial and sustainable;
6. Working in close coordinate with Government departments and its agencies;
7. Maintaining the distribution system for sustainable water resources management and development;
8. Ensuring dissemination of information;
9. Build up a reliable database of the farmers, fishers, landless and other households (these documents will be maintained with the support of SOs);
10. Adopting effective soil and water conservation techniques with the guidance of departmental agencies in the areas of high-water requirement like cropped areas;
11. Following sustainable and effective land use system;
12. Ensuring preservation and protection of hydraulic structures, without any modification unless otherwise approved by an authority vested with such powers;
13. Work towards maintaining and sustaining an ecological balance and prevent degradation of the environment particularly soils and quality of water;
14. Becoming a sustainable institution through a process of capacity building, skill up gradation and recovery of costs, wherever necessary; and
15. Devising suitable cropping program every season in order to optimize productivity and production consistent with the availability of water supply;

## **2.5 Constitution, Power and Functions**

### **2.5.1 Chak Committee (CC)**

All the land holders in a Chak will elect three members to form a Chak Committee (CC) in such a way that there shall be one member from the upper reach, one from the middle and one from the lower reach within the Chak. They will also simultaneously elect one among those three to represent the Chak in the Executive Committee of the Pani Panchayat / WUA. A person is eligible to become a member of more than one Chak Committee of a Pani Panchayat, based on the landholding in different Chak, but he can represent to the executive committee as member of only one Chak.

### **2.5.2 General Body (GB)**

#### **2.5.2.1 Constitution of General Body**

All the water users who are land holders in the area of PP / WUA, including fishermen, shall constitute the GB of the PP/ WUA and shall have the right to vote. Any land holder may nominate any adult member of his/her family to be the member of PP / WUA. A minor land holder shall be represented by his/her legal guardian.





Government may, by notification, nominate at-least one officer each from Department of Water Resources, Department of Agriculture and Farmer's Empowerment, Department of Revenue to be members of the PP/ WUA without having the right to vote. The above-mentioned members with the right to vote will constitute the General Body of the PP / WUA.

#### **2.5.2.2 Power and Functions of the General Body**

The General Body will have following functions, in accordance to the OPPR, 2003.

1. to approve the Operational Plan for each crop-season and review its implementation in the area of operation;
2. to allocate water amongst various main canals distributaries/ minors/ outlets, according to the operational plan approved;
3. to decide on the manner of regulation and distribution of water;
4. to prepare annual and long-term financial and works plans and priorities works for maintenance / repairs / upkeep, rehabilitation of the irrigation system;
5. to approve annual financial budget and review performance of the previous year's budget;
6. to appoint auditors for the annual audit and / or concurrent audit and to fix fees for the same;
7. to set up sub-committees of Members for various activities and functions of the Organisation;
8. to create or / setup such fund as may be required for different activities / works;
9. to entertain and dispose appeals against

- the orders of Executive Committee between water users;
10. to levy, collect fees and water tax as provided under section 20 the Act;
  11. to take decisions on raising of resources as provided under section 22 of the Act; to invest surplus funds in Banks or Government approved securities or as may be directed by Government from time to time for the benefit of the organization;
  12. to take decision on collective marketing or agricultural produce, collective procurement of inputs, running of Agro Service Centers, providing credit facilities and taking up post-harvest activities including processing of agricultural commodities;
  13. to decide on permissible administrative expenses with the ceilings prescribed, from time to time; and
  14. to carry out the recall proceedings as section 10 of the Act.

### **2.5.3 Executive Committee (EC)**

#### **2.5.3.1 Constitution of Executive Committee**

For smooth and effective governance of the PP, the act has the provision of constituting executive committee. There shall be an Executive Committee for each Pani Panchayat / WUA consisting of the representatives of the Chaks elected by the land holders of each Chak and the fishermen following appropriate methods of selection like secret ballot / election / nomination (election / selection of members to the executive committee will be done as per the OPR, 2003).

The President of the EC of the PP/ WUA will be selected by the members of the EC through election / selection / nomination. If at an election held for the post of President of the EC of the Pani Panchayat / WUA, and no member is elected, fresh election shall be held within a period of 90 days from the date of earlier election. The President shall, if not recalled earlier, be in office for a period of three years from the date of the first meeting (first meeting of the PP / WUA may be called by the concerned govt. authority as stipulated in the OPR, 2003) and the members of the Executive Committee shall be in office for a period of three years from the date of the first meeting of the Executive Committee.

The Executive Committee shall exercise the powers and perform the functions of the Pani Panchayat. The Executive Committee shall elect one Secretary and one Treasurer in the manner as may be prescribed from among the members of the EC to assist its President. Government may, by notification, nominate one officer not below the rank of Junior Engineer of the Department of Water Resources and another officer not below the rank of Junior Agriculture Officer of the Department of Agriculture without having the right to vote, to be the permanent invitees to the meetings of the Executive Committee.

#### **2.5.3.2 Power and Functions of the Executive Committee**

1. to prepare and implement operational plan for each session in its area of operation;
2. to prepare and implement Kharif and Rabi plans for various crops to be grown;
3. to prepare budget and allocate resources for various activities;

4. to prepare and implement annual and long-term plans for repairs, maintenance rehabilitation for development of the irrigation and drainage systems and to accord administrative sanction taking up works as per availability of resources on priority;
5. to prepare or cause to be prepared annual accounts of income and expenditures, and assets and liabilities;
6. to ensure equitable distribution of water among various water users;
7. to evolve and implement systems of regulation control, monitoring and reporting of water use and land use;
8. to recommend appointment of auditors for annual audit or concurrent audit to General Body.
9. to organize execution of works;
10. to raise resources and determine its deployment for various activities / functions of the organization;
11. to recommend formation of sub-committees to the General Body for undertaking various activities;
12. to settle disputes amongst members of the Farmers' Organisation;
13. to elect one of its members as Secretary and one as Treasurer to operate the funds of the agriculture;
14. to provide developmental services to the members related to irrigation and agriculture;
15. to take up training programme for members;
16. to prepare annual list of all Water Users and Members with voting rights;
17. to assist the Revenue, Water Resources and Agriculture Department in preparation and maintenance of basic records;
18. to maintain and operate a Reserve Fund;
19. to scrutinize the audit reports and rectify defects and report to the General Body;
20. to carry out and implement all decisions of the General Body; and
21. to establish a management information system and submit periodical report as may be specified by Government.

## **2.6 General Body & Executive Committee Meetings**

### **2.6.1 General Body Meetings**

The General Body shall meet at least twice a year, once before the Kharif and once before the Rabi season. The meetings shall be presided over by the President and in his absence by one of the members of the Executive Committee duly elected for this purpose. The General Body may also be called for at any time by the President or by the Executive Committee members through a majority resolution or by members of the organization through a requisition signed by no less than 1/3rd of the members with voting rights. A General Body meeting shall be held on receipt of a direction to do so from the Government in respect of matters relating to urgent public importance.

**Notice for GB Meeting:** The Executive Committee of the PP/ WUA shall convene a General Body



meeting within 20 days of receipt of notice, by giving 7 days prior notice of the date, time and place of the meeting and also the agenda. Notice for the General Body meeting shall be sent at least 7 days in advance of the date of the meeting along with the agenda. Notice may be sent by hand / post / publication / beat of drum and display on the notice board of the organization.

**Quorum for the General Body:** In all the meetings of the General Body, the quorum shall be 1/3rd of the members and all resolutions shall be carried by majority of the members present and voting. If there is no quorum for the meetings, the meeting shall be adjourned and be convened again at a date and time not later than two days of the first meeting. For the adjourned General Body meeting, no quorum is required and resolution would be carried by a majority of the members present and voting. At a requisitioned General Body meeting, the items specified in the agenda alone will be discussed. No other subject will be discussed without the permission of the majority decision of the members present in the meeting.

**Minutes of the Meeting:** Every proceeding of the General Body shall be recorded in the minutes book maintained for the purpose and authenticated by the President or the person who has presided over the meeting, as the case may be. A copy of the minutes shall be sent to PD-ATMA / EE-MI.

## 2.6.2 Executive Committee Meetings

The meeting of the Executive Committee shall be held at least once in every month. The meeting may be held more frequently if it is

so required. A meeting requisitioned, shall be held within 7 days of the receipt of requisition for such a meeting by the President. Notice for the meeting shall be sent by hand / post / delivery and published on the Notice Board. All meetings shall be presided over by the president of the Executive Committee. In his absence, the committee may elect one member amongst themselves to preside over the meeting. Every proceeding of the Executive Committee shall be recorded in the minutes book maintained for the purpose by the person chairing the meeting. A copy of the minutes shall be sent to PD-ATMA / EE-MI. The quorum for the meeting shall be the presence of 1/3rd of the EC members. All resolutions shall be made by a majority of the members present and voting and if there is no quorum, the meeting shall be adjourned for one day and should be convened again. In case of an adjourned meeting, no quorum is required.

## 2.7 PP / WUA Sub-Committees

### 2.7.1 Composition of Sub-Committee

The General Body of a PP/ WUA shall have three sub-committees, i.e., (a) Finance and Resource sub-committee (b) Works sub-committee and (c) Water Management sub-committee. Each sub-committee shall have one Convener (Secretary of the Executive Committee as convener) and four members drawn from members of the Chak Committees.

### 2.7.2 Functions of Sub-Committees

#### 2.7.2.1 Finance and Resource Sub-committee

Finance and Resource sub-committee will be responsible to (a) Mobilize and collect



resources; (b) Ensure collection of dues from members as levied under section 20 of the Act; (c) Recommend to the EC for the use and deployment of resources; and (d) Approve all expenditure once a month.

### **2.7.2.2 Works Sub-committee**

The works sub-committee will prepare the estimates of works for administrative approval and supervise works and ensure quality control.

### **2.7.2.3 Water Management Sub-committee**

The sub-committee shall (a) prepare a draft cropping plan in consultation with the farmers and agricultural experts; (b) carry out the decisions of the EC and of the GB on water regulation, schedule of water release; (c) organize patrolling of the canal, channels and regulate the use of the water in accordance with the operational plan of the PP / WUA; (d) check the irrigation and drainage system regularly; (e) record the water deliveries; (f) amicably resolve disputes regarding water sharing and to report to the Executive Committee, any violations in the use of water; and (g) maintain records of land owners and water users.





## Section III: PP / WUA in The Project

### 3.1 PP/WUA and Their Involvement in the Project

The OPPA, 2002 and OPR, 2003 created a legal entity, the Pani Panchayat for all irrigation systems in the state. The Act entitles the PP to operate and maintain the irrigation system by involving all the farmers, fishers and others who are its members. Consequently, the primary responsibility for the management of the irrigation networks and tank (minor) lies with the PP / WUA. Therefore, it is imperative that the project is implemented through the PPs/ WUA for effective restoration of the irrigation system, water distribution, crop planning and for sustainable management of the resources.

In case, there is non-existence of a valid and functional PP in the project area (538 project tanks), the concerned Executive Engineer (EE) will notify the same and decide for first meeting date. The meeting will be called by the President of the PP.

Association of PPs/WUAs in the project is evident as the project intend to improve the irrigation

scenario in the tank command. The PP/ WUA is expected to perform different roles, as per the OPPA, 2002 and OPR, 2003, so that irrigation situation in the tank command improves and the water users get benefit. At the same time, the PPs / WUAs will also be strengthened in the process. So, PPs/ WUAs are considered to be the vehicle of change and a catalytic force, in the shape of community organization, to ensure effective execution of project components / sub-components.

Sustainable restoration and improvement of irrigation requires not only the co-operation of the farmers in the tank command who have been availing the benefit of tank irrigation but also farmers who have using utilizing ground water in different cropping seasons and the fishermen who have traditional rights of fishing in the tank. Existing fishermen will continue the practice of fishing in the project tanks as per the decisions taken by the PP / WUA in its general body and executive body meetings. Wherever there are no fishermen, the PP/ WUA will have option to auction the fishing rights to any group of people in consensus with the PP / WUA general body.



### 3.2 Agreement and Signing MoU

Before the implementation of project framed activities, if so required and felt necessary by the SPMU-OIIPCRA, a Memorandum of Understanding (MoU) will be signed between the PP/ WUA and the Executive Engineer-Minor Irrigation (EE-MI) and/or with project associated Departments. The objective of executing a Memorandum of Understanding would be to arrive at an agreement between the PP/ WUA and the EE-MI / project implementing Departments on their respective roles and responsibilities in implementation of the project. The MoU will remain effective during the life of the project and may be extended as per the need of both the parties.

### 3.3 Project Planning

Addressing to the actual need of the farmers / members of the PP / WUA is key to the successful implementation of the project. In this regard, the project will adopt a participatory planning process in the tank command. Through the planning process, an Integrated Irrigation and Agriculture Plan (IIAP) will be prepared by the PP/WUA in consultation and active cooperation of the line departments, PD-ATMA, Support Organizations (SOs) and other technical agencies associated in the process. The IIAP will include activities of all the three components of the project (Component A, B and C) including the PP/ WUA Institution Development and Capacity Building, water regulation and management, crop water budgeting and crop planning etc. The IIAP will have both irrigation improvement and agriculture and allied sector plan, covering Agriculture, Horticulture, Fishery, agribusiness, Institution Development (ID) and Capacity

Building (CB). The SOs and the department officials / experts will also be involved with the PPs/ WUAs in the preparation of the IIAP.

The PPs/ WUAs shall prepare annual plan, in line with the project framed activities, by convening the meeting of the PP/ WUA Executive Committee (EC) along with all the members of the sub-committees. The major objectives of annual plan are;

1. To draw plan for activities to be undertaken by the PP/ WUA in a particular year;
2. To identify specific interventions for irrigation improvement, institutional strengthening, promotion of climate resilient agriculture, agribusiness etc.;
3. To identify areas of collaboration and convergence by planned activities;
4. To coordinate efforts being made by various stakeholders like Panchayati Raj Institution (PRI) and line departments;
5. Preparation of activity calendar, budget and assigning responsibility to person / agencies and get the approval of the general body of the PP / WUA and the concerned Department / Project Unit (PD-ATMA / EE-MI).

The annual planning process should start with meeting of the EC and all the sub-committee members. The SO and associated departments / institutions will also participate in the planning process. The EC shall list out the activities planned in the IIAP and in consultation and consensus of the participants, the activities are to be finalized for implementation. The EC shall approve the annual plan duly identifying the beneficiary institutions / households (refer IIAP for details).

### 3.4 Water Budgeting and Crop Planning

Based on the availability of water, taking in to account both surface the ground water, crop plan is to be prepared by the PP / WUA. The PP/ WUA has to facilitate the planning process during the onset of agricultural seasons (Kharif, Rabi, Summer). The Chak Committee (CC) member and farmers of each CC has to discuss and plan the crops based on the availability of water. A basic contingency plan will also be prepared to address any weather off-set. The whole planning process will be completed latest by the first week of May for Kharif and by the end of September for Rabi.

### 3.5 Working with Partner Institutions

The PP/ WUA and its sub-committees would work hand in hand with partner institutions that are associated in the execution of the project. The line departments, as co-implementing agencies, will provide project framed services in their respective domains, i.e., in agriculture, horticulture, fisheries development, ground water development and management etc.

It is planned to associate Support Organizations (SOs), Agribusiness Support Organization (ABSOS) and other technical institutions for capacity building of the PPs / WUAs, strengthening their functions and facilitate overall implementation of the project activities. They will assist in providing required capacity building inputs to the PPs/ WUAs apart from bringing in innovations and practices in enhancing income of the farmers, adoption of climate resilient technologies and agri-business promotion. The SOs will provide

services of community mobilization and institutional strengthening of the PPs / WUAs. The SOs will work with the PP/ WUA and support them in all the activities to be implemented / taken up by the PPs / WUAs. Specific facilitation support to be provided by the SOs are;

1. 1. Awareness creation;
2. Stakeholder identification for different project activities;
3. Organising training programmes for the PPs/ WUAs / FPOs etc.;
4. Training of PPs/ WUAs & its committees on IAP;
5. Support PPs/ WUAs in formulation / preparation of IAP;
6. Facilitating PP/ WUA general body and managing committee meetings;
7. Monitoring and supervision support to PP / WUA;
8. Support PP / WUA in book keeping / record maintenance;
9. Extending required support to other agencies associated in the project implementation;
10. Mobilization of farmers for implementation of different project activities;
11. Facilitate climate resilient agriculture technology adaptation;
12. Piloting different climate resilient innovations / practices along with line depts.;
13. Working for enhancing income of the farmers, in line with the project frame.



The agribusiness support organization (ABSO) will facilitate agri-business promotion, including market linkage support to the producers directly and/or through their producer groups.

The project will engage different professional service providing agencies for rendering technical support in different aspects of the project such as agricultural technology, monitoring, evaluation and learning, third party quality control, conducting thematic studies, documentation, MIS, knowledge management, etc. The PPs/ WUAs will cooperate with such agencies in completion of the assignment to meet the project management requirements.

### **3.6 Water Distribution and Management**

As per the OPPA, 2002 and OPPR, 2003; water distribution at the farm field level is the most important work that needs to be planned and managed efficiently by the PP. In the project, it is proposed to strengthen the PPs/ WUAs with adequate capacity to deal with water distribution and its efficient management. Based on the water available in the system, the water management sub-committee shall prepare the water distribution plan in accordance with the demand of the farmers (estimated crop water requirement). The sub-committee gets endorsement of the plan from the EC. The water distribution plan will be implemented through the committee appropriately. In case of requirement, PPs/ WUAs can make use of the Govt. official/s responsible for water distribution. The water distribution and management are to be taken up by the PP/ WUAs in the following manner.

The EC of the PP/ WUA shall prepare a water budget, with the assistance of the competent authority, for the area of operation under its control as detailed in the PP Rules 2003 (27.1). The water budget shall be prepared one month before the on-set of the Kharif season, subject to such directions as may be given by the Government from time to time, based on the anticipated inflows and existing availability of water in the tank and workout the water allocation.

Equitable distribution of water shall be achieved by adopting circular rotation over a period. The PPs/ WUAs shall draw up an operational plan which shall specify the quantum of water to be drawn on a fortnightly basis. The drawls of water shall be monitored each day at specified gauge points as decided by the PP / WUA. Review of drawls and distribution shall be done by the PP/ WUA at the end of each fortnight and corrective measures taken accordingly. At the end of each season, the PP/ WUA shall prepare a report of water received and utilized along with the area irrigated, quantity of water supplied and extent of crops. The PP/ WUA shall analyse the shortcomings and deviations in water budget and report to the appropriate authority. The PP/ WUA shall decide the operational plan and date of release of water for irrigation depending upon the storage / inflows in to the tank. After a water budget is prepared, the PP shall draw up a plan of water regulation as follows.

1. The dates of release and closure shall be informed to all the members well in advance;
2. Equitable distribution of water amongst all users shall be the main principle in water regulation;

3. A PP/ WUA shall draw water and monitor flows based on the operational plan prepared;
4. A turn schedule shall be prepared for each outlet by the PP / WUA;
5. The PP / WUA shall carryout on-field assessment of the ayacut with the assistance of the competent authority along with the Agriculture and Revenue Personnel;
6. A PP/ WUA may, for the purpose of monitoring, install measurement and other such devices, as may be required, within its jurisdiction.

### 3.7 Monitoring & Learning

Monitoring of the project activities will involve verification and checking of physical activities and ensuring that the activities are implemented as per the design and schedule and with the prescribed quality. Since the project emphasizes participatory monitoring, stakeholder will be involved in identifying the monitoring indicators and in measuring them. At the tank level, monitoring of the project activities is the joint responsibility of the PP/ WUA, associated departments, DLPMT and the SOs, apart from third party M&E agency engaged by the project. It will involve recording of actual field implementation compared to the plan to determine the degree of achievement and reasons for short falls, if any. Monitoring will be carried out using both quantitative and qualitative / participatory methods. In the monthly meeting of the PP / WUA, the executive body members will discuss on the progress of the project and its benefits.

### 3.8 Transparency & Public Disclosure

The list of works to be taken up should be given wide publicity by means of display in the office of the PP/ WUA (if PP / WUA is having its own office) and other public places like Gram Panchayat office and other prominent public places and institutions within the PP/ WUA operational area. Along with the lists, other particulars of works, estimates, values and mode of execution should be given publicity. The PP/ WUA shall take all required measures for maintaining transparency related to the plans taken up and suo-moto disclosure of activity related information. If any member wishes to have access to any of the records relating to activities taken up, he/ she may do so on payment of the fee, as fixed by the PP / WUA. The project may support the PPs / WUAs to adopt innovative approaches, like establishing information dissemination centre, information kiosk etc. to promote operational / functional transparency.


### 3.9 Settlement of Disputes and Appeal

Any dispute or difference on constitution, management, powers or functions of a PP / WUA arising shall be settled as prescribed in the OPPR, 2003. Any such disputes or difference arising in a PP/ WUA shall be settled by the EC of that PP / WUA. Any such disputes or differences arising between water users and the EC of the PP / WUA or between two or more PPs/ WUA shall be determined by the Executive Engineer concerned. Every dispute or difference shall be settled within 30 days from the date of reference of the dispute or difference. Any party to a dispute or difference aggrieved by the


decision made or order passed by the EC of a PP / WUA may appeal to the Executive Engineer Concerned, whose decision thereon shall be final. Any party to a dispute or difference by the decision made or order passed by the Executive

Engineer may appeal to the Superintending Engineer concerned, whose decision thereon shall be final. Every appeal under the rule shall be settled within 30 days from the date of filling of the appeal.


## ପାଣି ପଞ୍ଚାୟତର ପ୍ରମୁଖ କାର୍ଯ୍ୟାବଳୀ (କେନାଲ ପରିଚାଳନା ଓ ରକ୍ଷଣାବେକ୍ଷଣ)




ମିଳିତ ପଦଦ୍ୱାରା ଦ୍ୱାରା କେନାଲର କ୍ଷୟକ୍ଷତି ନିର୍ଦ୍ଦେଶ କରି ପାଣି ପଞ୍ଚାୟତ ବୈଠକରେ ଏସୁଚିକର ମରାମତି ପାଇଁ ପଦକ୍ଷେପ ନିଅନ୍ତୁ ।




ଶ୍ରମଦାନ କରି କେନାଲ କ୍ଷୟରୁ ବାଧି, ପତୁମାଟି, ପାଦ ଲତ୍ୟାଦି ସଫା କରି କଳବୁ ଚଳମୁଖ ପର୍ଯ୍ୟନ୍ତ ପହଞ୍ଚାଇବା ପାଇଁ ଚେଷ୍ଟା କରନ୍ତୁ ।




ସରକାରୀ ଅନୁଦାନ ଓ ଏମ.ଡି.ଏମ.ଆର.ଇ.ଡି.ଏ ଭଳି ଯୋଜନାରୁ ମିଳୁଥିବା ପାଣିକୁ କେନାଲରେ ମାଟି ବତା ସିମେଣ୍ଟ ଭ୍ୟାଣ୍ଟିର ମରାମତି କରାଯିବ ।



କିରାଟାସ ଅଧିକାରୀ ମାତ୍ରଙ୍କ ସହାୟତାରେ କଳପରିମାଣ, କମିର ବିସମ ଓ କଳାର ଚାହିଦା ଅନୁସାରେ ବିବିଧ ଫସଲ ଖସିବା ପ୍ରସ୍ତୁତ କରନ୍ତୁ ।



ଫସଲରେ କଳ ଆବଶ୍ୟକତା ଓ ବର୍ଷର ପରିମାଣକୁ ଆଖିରେ ରଖି କେନାଲ ଖୋଲିବା ଓ ବନ୍ଦ କରିବାର ସମୟ ନିର୍ଦ୍ଧାରଣ କରିବା ଦ୍ୱାରା ସୁଧର କରନ୍ତୁ ।



କେନାଲର କଳ ଆମର ସମ୍ପତ୍ତି, ନଷ୍ଟ ନକରିବା ଚାହା, ମିଳିମିଶି ସବୁ ଦେଖାଶୁଣା କଲେ ଚାଷ କାର୍ଯ୍ୟେ ହେବ ସାହା ।





## Section IV: Development Planning

### 4.1 Introduction

The Integrated Irrigation and Agriculture Plan (IIAP) is a plan document having focus on improving irrigation coverage in the command and suitable adoption of cropping pattern looking at water availability. Along with irrigation improvement and cropping system planning, the IIAP shall also have detail plan of all the activities to be implemented in a cascade / tank, covering all the project components / sub-components. The PPs/ WUAs will have to prepare the IIAP, covering all the area under its operational jurisdiction, to implement the project. The associated departments, technical institutions, ABSO and SOs will also be associated in the planning process.

Unlike the Phase-I project (OCTMP), where Tank Improvement and Management Plan (TIMP) was prepared; in OIIPCRA, in adherence to the climate resilience parameters, Integrated Irrigation and Agriculture Plan (IIAP) would be prepared, taking the existing tank command / cascade as the unit. The IIAP can be prepared taking the cascade as a whole (taking together all the tanks

and habitations) or each tank level plan can be clubbed to form the cascade level IIAP.

### 4.2 Objective

The overall objective of IIAP is to develop a perspective plan around a micro geo-hydrological unit for conservation and efficient management of water resources while promoting agricultural practices that are climate resilient and improving livelihood security through value chain promotion and supply chain management.

### 4.3 IIAP Preparation Process

#### 4.3.1 Awareness Generation

The process of IIAP preparation will start with awareness generation about the project in the cascade / tank command villages. Village level meetings will be organized in each of the cascade / tank villages. During the meeting, the villagers will be informed about the project, its objectives, approach and processes, possible interventions and expected benefits. The villagers will also be informed about the role



of the PP/ WUA in the project and in the future operation and maintenance of the irrigation system. A number of meetings will be organized in each tank /cascade village, besides the awareness generation process, including wall writings, audio-visual shows, documentaries etc. These activities will form a part of the entry point activities in cascade / tank level.

### 4.3.2 Stakeholder Identification

Social mapping will be carried out at the villages to identify various social and economic groups. During the process, various stakeholders will be identified, including the groundwater users in the tank command zone, by listing out all the ways in which the villagers are using the tank and the household in each user category. This will be recorded on the social maps. Once all the stakeholders have been identified, a detail Stakeholder Specific Intervention Plan (SSIP) will be prepared, covering all the cascade / tank stakeholders. However, before the stakeholder identification process and village specific planning, a notice about the meeting will be given at-least 7 days in advance in the villages through the PP / WUA with regard to preparation of the IIAP. In the stakeholder identification process, potential beneficiaries for different project activities will also be identified.

### 4.3.3 Data Collection / Technical Surveys

After signing of the MoU between the PP/ WUA and the EE-MI / Govt. Dept., the process for IIAP preparation will commence. Required information / data will be collected (both from primary and secondary sources) to prepare the IIAP. The basic data / information that would be collected are;

1. No. of farming households and their holdings in different reaches of the tank command (upper / middle / tail end);
2. Availability of water from all sources (surface and ground water) for irrigation and other uses by cropping seasons;
3. Quantum of water available from different sources (surface and ground water) during Kharif and Rabi;
4. Quantum of water available and utilized for irrigation during Kharif and Rabi;
5. Plots in irrigation command by farming households (mapping of each plot) and irrigation coverage by plot in Kharif and Rabi;
6. Different crops grown by farmers by plot during Kharif and Rabi;
7. Crop preference of farmers in Kharif and Rabi by plot / reaches in the tank command etc.
8. Meteorological data such as rainfall, rainy days, minimum temperature, maximum temperature, humidity, wind etc.;
9. Land use pattern, land type, soil characteristics / soil profile etc.

The collected data will be entered in to the software (a new software may be designed by the project for IIAP preparation) for analysis. The analysis should reflect (1) crop wise water used and its sources (surface & ground water), (2) estimating total water requirement for different crops grown by the farmers (kharif and Rabi), and (3) preparing a balance sheet of crop (crop type and area cultivated) and water. Collection and analysis of data will follow the participatory planning process. The findings will be shared with the PP / WUA for effective planning. The PP / WUA will facilitate the process, involving people in the tank command. Crop wise area by cropping season will be finalized in the planning

process by each farmer and its cultivated area of each chak taking in to account the availability of water.

#### 4.3.4 Components of the IIAP

The IIAP will comprise two major components, i.e., Irrigation Improvement Plan (IIP) and Livelihood Improvement Plan (LIP). The IIP would basically cover water provisioning through different sources / means to the cultivated area whereas livelihood improvement plan would cover all the project measures that are intended to improve agriculture, horticulture and fishery.

The Livelihood Improvement Plan (LIP) will cover livelihood sectors that the project intends to intervene, such as agriculture, horticulture, fishery, and agribusiness promotion. The LIP will be a part of the overall IIAP. The IIP and LIP will be prepared by each PP/ WUA at the tank / cascade level, in consultation and with the support of the SOs, ABSO and technical staff from relevant line departments. The IIAP will be prepared taking in to account the existing production systems, socio-economic conditions, water availability and distribution and emerging market opportunities. Feasibility aspects of the activities planned in the process is to be examined and suitable activities that are implementable and having potential to contribute to the overall project objective should be considered. During prioritization and finalization of activities, available resources should be considered and plan should be finalized accordingly.

#### 4.3.5 Compilation and Finalization of IIAP

The plan will include, along with IIP and LIP. a brief profile of the cascade / tank area and the

tank stakeholders. The identified interventions will be segregated in the following categories:

1. Land / Water Resources Management Activities;
2. Segregated Sector Plans (agriculture, horticulture, fishery, agribusiness and other non-land based livelihood activities);
3. Social / Environmental Management Activities;
4. Institutional Development and Management Aspects; and
5. Capacity building.

The proposed interventions will also be segregated into categories based on the resources to be used to implement them. The resources to be used are like:

1. Project resources;
2. Convergence/linkage with other program / scheme; and
3. Credit / donations etc..

#### 4.3.6 Approval of IIAP

Once the draft IIAP document is ready it will be presented to the PP/ WUA General Body for approval. The General Body meeting of the PP/ WUA will be organized at least within a week of the preparation of IIAP document. During this meeting / discussion on IIAP, SOs along with officials and experts of associated agencies / dept. will remain present for consultation. Based on the discussions, and incorporating relevant suggestions of the community, IIAP will be finalized. A copy of the final IIAP will be submitted to the EE-MI, PD-ATMA, SPMU and concerned government bodies for information.

## 4.4 Contingency Planning

The extreme weather events are climatic anomalies which have major impact on agriculture and food production. In recent times, the frequency of these events is increasing causing enormous damage not only to agriculture but also to other sectors like horticulture, fisheries, poultry and livestock. To deal with such situation, the project intends to aware and educate the PP / WUA and farmers in general to prepare contingency plan. The contingency plans will have integrated information on agriculture and allied sectors, i.e., horticulture, livestock, poultry, fisheries and technological solutions for all the major weather-related aberrations including extreme events viz., droughts, floods, heat wave, cold wave, untimely and high intensity rainfall, hailstorms, pest and disease outbreaks.

The PD-ATMA, in consultation with directorate of agriculture and horticulture will develop a standard template that will cover prevailing agro-ecological situations in the locality towards preparedness, possible seasonal contingencies and suggested adaptive strategies. The planning template will have two parts, i.e.,

1. agricultural profile of the area with information on resource endowments such as rainfall, soil types, land use, irrigation sources, more dominant crops and cropping systems along with their sowing windows; livestock, poultry and fisheries information; production and productivity; major contingencies faced by the people in the area; current adaptation mechanisms like use of micro irrigation system; and
2. the detailed strategies for weather related contingencies anticipated in

crops/cropping systems such as delay in onset of monsoon of different duration; mid-season monsoon breaks resulting in drought both in rainfed and irrigated situations and adaptation strategies for weather related extreme events. These contingency plans will contain information on alternate crop varieties/crops to be chosen in case of delay in onset of monsoon or early season drought and also on agronomic measures for mid and terminal season droughts. Further, strategies for contingency situations in livestock, poultry and fisheries have also to be included.

The local contingency plans are to be prepared by PP / WUA in consultation with PD-ATMA, officials of directorate of agriculture / horticulture / fishery / animal husbandry and EE-MI along with the local SO and other technical institutions like OUAT and KVK under the overall guidance and supervision of Department of Agriculture and Farmers Empowerment. The contingency plans operationalization requires extensive planning both at the local and project level. The associated departments will be supportive in linking the local contingency plan with the district contingency plan for appropriate response at real time basis.

The contingency plan will detail out the interventions to be taken up by the farmers, PP/WUA and the line departments for various weather aberrations. The plans, prepared as a part of the contingency plan, will remain dynamic and updated each year covering various aspects, such as; (1) new technologies, (2) improved seed varieties, (3) linkage with new development schemes / program, (4) experiences on handling the recent weather aberrations, (5) awareness building etc.





## Section V: Capacity Building

### 5.1 Preparing Capacity Building Plan (CBP)

Capacity building is an essential part of the project to ensure that the PP functions effectively and discharge its responsibilities efficiently. In the process, PP will be imparted with suitable capacities for effective participation in planning, implementation for the realization of the project objectives at the grassroots level. Before the implementation of the capacity building activities, a Capacity Building Plan (CBP) will be prepared with the overall objective of improving the skill and knowledge base of PP members to achieve the objectives set out in the OPPA, 2002 and in the OIIPCRA project. The capacity development measures will help them acquire technical knowhow by which they can provide technical support and guidance along with improved adoption of climate resilience practices. While capacity building measures will be taken up under different components / sub-components of the project in the areas of agriculture, horticulture, fisheries, agribusiness etc.; capacity building for institutional development will be exclusively taken up under the component one of the OIIPCRA project. The

specific objectives of preparing the PP/ WUA capacity building plan are to;

1. improve the institutional functioning of the PP/ WUA and strengthening its governance mechanism;
2. strengthen stakeholder participation in the rehabilitation/restoration of cascade /tanks and its management;
3. facilitate water and land resource management;
4. improve their skill base in crop water budgeting, irrigation scheduling and water use monitoring;
5. enhance their knowledge base on climate resilient practices in agricultural and allied sectors;
6. equip them to take up agribusiness and value chain improvement activities in suitable cases..

### 5.2 Capacity Need Assessment (CNA)

The Capacity Building Plan (CBP) of the PP/ WUA will be prepared based on the assessment of the

existing capacity. The CBP should be prepared taking in to account the desired level of skill and knowledge base required for effective implementation of the project and the gap between desired versus current capacity. The CBP would address the existing gap and ensure that the CBP fills the capacity gap.

The SPMU along with govt. institutions and SOs will facilitate the CNA and preparation of CBP. The capacity building needs should be classified as per the project components (Component A, B and C). A comprehensive CNA tool would be developed by the SOs in consultation with SPMU and associated departments and it should be administered by the SOs for identification of capacity needs of the PPs / WUA. The CNA should be based on individual capacity as well as organizational capacity, covering EC of the PP / WUA, sub-committees of the PP / WUA and institutional members in general.

The line departments, based on the identified needs for capacity building, will design and develop different training modules, in

consultation with the SPMU. The training modules / manuals will be used for capacity building of the PPs/ WUA at the cascade / tank level. In case of requirement, the CNA of PPs / WUAs, preparation of CB plan and development of modules / manuals will be carried out by the SPMU of OIIPCRA project by engaging consultant / consulting firm. It is to be ensured that the CNA identify critical capacity needs adhering to the project development objective and components / sub-components of the project.

### **5.3 Training of PP / WUA Members**

Though, CNA will identify specific capacity requirements for the PP/ WUA and its sub-committees, still, some of the basic areas, as a part of the capacity building of the PP, will be taken up during the implementation of the project. The following training shall be organized for different stakeholders of PP / WUA.

1. Role and Responsibilities of PP / WUA;
2. Maintenance of financial records and financial resource management;



3. Preparation and implementation of PP/ WUA annual action plan;
4. Participatory Irrigation Management;
5. Water audit and crop planning;
6. Water distribution and sharing;
7. Community based monitoring of PP/ WUA activities;
8. Technical training to PP / WUA beneficiaries on climate resilient agricultural practices.

### 5.3.1 Executive Committee Members

1. Preparation of IIAP;
2. Preparation of PP/ WUA procurement strategy and plan;
3. Roles and responsibilities of PP / WUA;
4. Roles and responsibilities of PP/ WUA management committee members;
5. Participatory Irrigation Management & role of PP / WUA;
6. Maintenance of PP/ WUA records, books and accounts;
7. Group norms, group revitalization, conflict resolution and grassroots leadership;
8. Preparation and implementation of PP/ WUA annual action plan;
9. Water charge estimation and collection;
10. Planning and implementation of O&M of the irrigation system;
11. Resource mobilization;
12. Water audit;
13. Crop-water budgeting and crop planning;
14. Water distribution and sharing;

15. Community based monitoring of PP/ WUA activities.

### 5.3.2 Sub-Committee Members

1. Roles and responsibilities of PP / WUA;
2. Roles and responsibilities of PP/ WUA sub-committee;
3. Maintenance of sub-committee records and books;
4. Preparation and implementation of PP/ WUA annual action plan;
5. Water charge estimation and collection;
6. Planning and implementation of O&M of the irrigation system;
7. Resource mobilization;
8. Water audit
9. Crop water budgeting and crop planning;
10. Water distribution and sharing;
11. Community based monitoring of PP/ WUA activities.

### 5.3.3 Training of PP / WUA Members / Beneficiaries

1. Water management in different cropping system;
2. Improved cropping systems and farm mechanization;
3. ID crops / Organic farming;
4. Climate resilient agricultural practices;
5. INM / IPNM and IPM;
6. Composting / Vermi-compost;
7. Water use efficiency and water productivity (drip / sprinkler use);



8. Post-harvest processing and value addition;
9. Agri-business development;
10. Value addition (agriculture, horticulture, fishery);
11. Fishery development;
12. Horticultural plantation;
13. Agri-business / collective marketing / supply and value chain development

**Note:** The beneficiaries include farmers, fishermen and other primary stakeholders at the cascade / tank level who are provided with project support directly and/or indirectly. The beneficiaries include farmers identified for demonstration, member of the FPO, individual farmers identified for micro irrigation system, protective farming, support for fishery promotion, agribusiness promotion etc.

## 5.4 Resource Persons

Trainings for PPs/ WUAs will be organized locally, in most cases, to ensure maximum participation of members in the learning process. Selected PP/ WUA members will be trained at the block / district / state level, based on the requirement. While trained persons of SOs/ technical institutions (KVKs / ATMA / IMAGE etc.) will be associated in imparting training at local level, service of external resource persons, with required thematic understanding and expertise, will be utilized. Selected training sessions will also be facilitated by the SPMU and dept. officials / experts. At the district and State level trainings, if so organized, quality resource persons will be engaged by PD-ATMA / DLPMT / SPMU. Training of PFCS will be undertaken by FISHCOPFED while, training of fisher folk will be undertaken by expert agencies, to be identified and engaged by the SPMU.



## **Section VI: Implementation of IIAP**

### **6.1 Implementation Arrangements**

A schedule for implementing various planned activities will be drawn, on priority basis by the PP / WUA and implementing agencies, subject to the financial limits. The Managing Committee of the PP/ WUA will take up capacity building measures for the members during execution of the works. The lists of activities and budget details will be displayed in the office of the PP, other public institutions within the cascade / tank area.

### **6.2 Participatory Monitoring & Learning**

Participatory monitoring process would aim to involve key stakeholders in developing a framework measuring results, evaluating achievements and learning from the project experience, i.e., as joint creator and evaluator of project progress. This will also help build up local capacity to reflect, analyze, propose solutions and take actions. Participation under this project does not remain confined only to plan and strategize project activities, but to manage the project as

well, including monitoring and learning from implementation. Consequently, the PP needs to monitor project activities to:

1. Obtain continuous feedback and provide required information / data to project management for decision making;
2. Facilitate appropriate and timely decisions and to assess the outcomes and impact of the project vis-à-vis the needs identified;
3. Facilitate results-based management to focus economic gains and equity
4. Learning from the project and replicate the learning.

It is important for the PP/ WUA to understand process and tools of participatory monitoring. The SOs will orient the PP/ WUA Executive Committee and Sub-committees on the project result framework and give them clarity on modalities of monitoring, its aims and objectives, etc. Based on the monitoring, the PP/ WUA will be able to identify the gap between the plan and its implementation which require immediate action. Some of these actions will be possible at the local level itself, where the PP could take

action accordingly. The SOs will assist the PP in taking action at their level, wherever possible.

### 6.2.1 Third-Party Quality Control

The quality of the civil works will be monitored through an external agency, engaged by the SPMU. The agency will depute its team to assess the works quality in the field from time to time. The team will visit the construction sites and undertake analysis of the sample and submit reports. The SPMU, in consultation with the concerned EE-MI, will take appropriate action based on the findings of the third-party monitor. The concern PP will provide assistance to the external agency in carrying out the third-party quality control monitoring in the tank / cascade.

## 6.3 Performance Rating of PP / WUA

The PP/WUA functionaries are required to perform different roles during the implementation of the project. The functions are related to institution management, system management (Operation & Maintenance), water management and funds management. The role and functions of the PP/WUA functionaries are defined in the OPPA, 2002 and OPFR, 2003. The project, through specific interventions, also intends to strengthen the PP/WUA as a local community-based institution. It is expected that involvement of the PP/WUA will not only ensure effective implementation of the project bound activities but also in the process, PP/WUA will be strengthened in terms of acquiring management ability, decision making and management of local resource base. So, in order to understand the improvement made in the ability of the PP/WUA, rating process will be

adopted which will enable the project to assess the performance of the PPs/WUAs. Performance Rating will be done in two ways, i.e., self-rating by the PP/WUA and rating of PPs/WUA by the project authority.

Self-rating is designed keeping in view the simplicity in understanding, analyzing and awarding suitable marks / ranks by the PP/WUA functionaries and other water users to their performance. Some parameters are identified on which the performance will be rated. Self-rating will be carried out on quarterly basis to measure the performance of the PP/WUA.

### 6.3.1 Participatory Assessment and Cross Learning

Institutional strengthening is expected to result in the active participation of PP/WUA functionaries in the project in all the stages of the projects, namely, pre-planning, planning, implementation and post implementation. There are defined roles of PP/WUA enunciated in the project. They are sequential and follow a step-by-step approach linked to the project cycle with specific milestones. The processes along with the outcomes are expected to result in the overall capacity of the PPs/WUAs to manage conflicts among all the water users thereby maximizing the utilisation of the resource and system's O&M. Livelihood component brings in new dimensions to the project with the active involvement of different water users. Capacity building through training alone may not bring in the required change unless PPs/WUAs are part of the learning process. Participatory Assessment and cross learning provides space and scope for learning and improving in a collective action.



The exercise enables the PPs/ WUAs understand the implementation of the project with focus on the PP's/ WUA's role in resolving issues related to stakeholder identification and the interventions proposed. It examines the sequence of activities and crossing the milestones as defined in the Project Implementation Plan (PIP) and the Integrated Irrigation and Agriculture Plan (IIAP). It also therefore throws light on understanding different interventions proposed under livelihood sector development component in different tank systems.

It is proposed to involve PPs/ WUAs from one tank to visit other PPs/ WUAs on annual basis. This arrangement will provide a cross-learning opportunity to the PPs / WUAs. It will help them to learn about the practices of other PPs/ WUAs and they can appraise their activities to the visiting PPs / WUAs. This approach is expected to result in exchange of ideas among the PP/ WUA functionaries while promoting constructive competition among them.





## Section VII: Post-Project Operation and Management

### 7.1 Introduction

Operation and Maintenance (O&M) is a set of activities which need to be carried out regularly for smooth functioning of the tank system. These activities can be carried out with the resources available at the PP/ WUA level. These activities are defined in the OPPA, 2002 and OPPr, 2013. They include periodic works such as de-silting feeder, canals, jungle clearance, maintenance of sluice, shutters, etc. The PP/ WUA has to take up regular maintenance activities during every season. However, during the project period these works will be limited and these can be given high priority in the post-implementation stage of the project. The project will facilitate in developing a business plan for the PP / WUA for revenue generation to meet the O&M requirements..

### 7.2 Planning and Implementing O&M Activities

The EC of the PP / WUA will organize a participatory walk (transit walk) around the irrigation system before each crop season to prepare a detail plan for O&M. Through the

survey, all the critical maintenance requirements around the irrigation system would be identified which need immediate attention. The Works Sub-committee will prioritize from the list of identified activities. The EC will discuss and prepare the list and fix up priority of works to be taken up immediately. The GB will approve the estimate for the works so prioritized.

#### 7.2.1 Key O&M Activities

Operation and maintenance of irrigation system is an important activity of the PP / WUA apart from other activities. The tank system requires O&M on a regular basis comprising a set of activities carried out with local resources at PP/ WUA level. The PPs/ WUAs shall take up operation and maintenance works, as per the limit prescribed by the Government from time to time. The works shall be executed by the PPs/ WUAs under the supervision of the Water Resources Department. The works costing above the limit prescribed by the Government are to be taken up by the Department. Normal Operation and Maintenance Works to be taken up by the PPs / WUAs are like;



1. Desilting (feeder channels, irrigation channels and tank bed);
2. Weed removal / Jungle clearance in the tank system;
3. Embankment repair;
4. Revetment, if necessary;
5. Repairing of shutters;
6. Repairs to masonry and lining;
7. Cleaning and oiling of screw gears and gate grooves;
8. Painting of hoists gates etc.;
9. Emergent breach closing works;
10. Maintenance of inspection paths;
11. Formation of cross bunds; and;
12. Lifting of water by generators / pumps.

The PPs/ WUAs shall take over the O&M activities and bring in regularity, with collective action at village level. The PPs/ WUAs have to develop a corpus fund for regular O&M through collection of water charges, fisheries lease money, contributions etc. and take over the entire responsibility of O&M within the financial ceiling prescribed by the Govt.

Prior to the commencement of every crop season (Kharif & Rabi) the managing committee and competent authority (Junior Engineer) of every farmers organization shall undertake to assess the condition of the irrigation system (system diagnosis) through a participatory transit walk / walk-through exercise. The PPs/ WUAs shall inspect each and every hydraulic structure and record its status. They have to identify all the critical reaches which need immediate repair as listed out above. The Competent Authority shall assist the PPs/ WUAs in preparation of detailed

list of works to be undertaken. The EC of the PP / WUAs shall discuss the list, so prepared and fix up priority of works to be taken up on immediate basis.

The competent authority and the PP / WUA shall prepare estimates for the works, so prioritized according to the hydraulic particulars as maintained by the Water Resources Department at the prevailing schedule of rates within a fortnight. The proposals for taking up various works under various categories would be scrutinized and approved which will be a part of the Annual Action Plan for O&M.

The EC of the PPs / WUA shall accord administrative approval, if so required, for the works' to be taken up with the available resources. The works sub-committee shall recommend estimates of works for administrative approval and the administrative approval is subject to availability of funds. Each administrative approval shall be recorded in the designated register of administrative approvals. The power for giving technical sanction by the competent authority shall be based on the approval of the Executive Engineer / Superintending Engineer / Chief Engineer as per the existing Government limits. The Competent Authority, shall record all the technical sanction in the register of technical sanction. The technical sanction shall not exceed the administrative approval.

1. Works as approved by the Executive / Managing Committee of the Farmers Organization shall be taken up for execution by the PP / WUA;
2. Under no circumstances, Managing Committee Member of the PP execute a work directly in his individual capacity;

3. The cost of works executed shall not exceed the estimated costs;
4. Approval of the EC of the PP / WUA will be required in case the cost of work exceeds the estimated cost;
5. The competent authority shall record the pre-measurements and final measurements for quantifying the work done for making payments by the Farmers Organization. These measurements shall be check measured by appropriate authorities as per rules and procedure of Water Resources Department;
6. The procedure adopted by the Competent Authority in preparation of estimates, bills etc., shall be subject to verification by higher officials as normally applicable to department;

The competent authority shall be responsible for the maintenance and adherence to the approved hydraulic particulars. He shall ensure strictly that the designed hydraulic particulars of an irrigation system are not altered. He / she shall guide the PPs / WUAs in supervising the works and quality control. No PP / WUA shall have the power to interfere with the designed hydraulic particulars of an irrigation system. Any violation will invite the penal provisions under appropriate act and rules made there under. The competent authority shall maintain all required records of the work done by the PP / WUA for further review and verification. Quality control checks shall be as per the departmental norms.

### 7.2.2 Funds Raising for O&M

To carry out operation and maintenance work, PP/ WUA will generate resources from different

sources. The main sources of funds for the O&M activities are;

1. Water charge from farmers utilizing water for irrigation;
2. Build-up Corpus;
3. Funds received as PP/ WUA share of the fishery lease;
4. Funds raised from other sources like CHC, agribusiness etc. (if PP/ WUA manage CHC and agribusiness activities);
5. Membership Fees
6. Members` contribution for O&M works
7. Donations/ Resources mobilised through dovetailing etc.

### 7.2.3 Facilitating Water Charges Collection

The PP / WUA shall collect basic water charges in Kharif and as per actual water use during Rabi as per government rate fixed from time to time.

## 7.3 Monitoring Water Supply and Distribution

The EC has to prepare the water distribution plan for Kharif and Rabi agriculture season. This will be done in a General Body meeting of the PP/ WUA in which all the member farmers are present. The PP / WUA will prepare the action plan in consultation with the officials of line department. Based on the availability of water, area to be irrigated in the command and the types of crops that can be taken up will be planned. PP will then distribute the water according to the plan and water tax would be collected accordingly.

## 7.4 Water Budgeting

As discussed earlier (water distribution and management sub-section), the water budgeting is the process of taking stock of the available water, considering both surface and ground water, and preparing a budget based on the water requirement of different sectors. As ground water utilization is more private driven and depends upon the individual farmer, PP/ WUA should prepare a water budget taking available surface water and ground water in to account. However, in water budgeting, all the land holders in the designated command and their irrigation requirement will be taken in to account. The main objectives of the water budgeting are to:

1. Provide irrigation to the entire designated command;
2. Ensuring equity and dependability in water supplies to all the farmers in all the reaches in the command;

3. Improve water productivity.

In order to enhance water productivity, water measurement procedures will be followed. This will also be supportive in making water available to all the farmers in the command, through efficient regulation and distribution of water. As PP/ WUA will play an important role in water productivity enhancement and equitable distribution of water in the command, they should have an idea of the measurement in the water releasing points. The project will install such measuring devices in all the tanks and the concerned competent authority will impart training to the EC members for taking regular measurement and managing release of water accordingly. Simultaneously, the SOs will also impart training on crop water requirements to the PP / WUA members to facilitate preparation of crop plan in the cascade / tank command.





## Section VIII: Financial Management

### 8.1 Opening Bank Accounts

The PP/ WUA shall open one account (if not having any account in nationalized bank during implementation of the project) in any nationalized bank. The account should be opened in any local branch of a nationalized bank. Account will be operated under the joint signature of the President and Secretary. The project funds will be operated through this account, if any such funds placed with PP / WUA to execute project framed activities. The beneficiary contribution (if made in cash), if so, mobilized as per the guidance from project authority, and other O&M charges, fisheries lease amount received from the fisheries cooperatives, funds received from department etc. can be deposited in this account. The PP/ WUA shall maintain the cash book and accounts of expenditure with appropriate vouchers and receipts. Every expenditure should have a receipt or voucher which shall be duly passed for payment by the president or any member of the EC authorized by him. The project will have the right to direct the bank to freeze the bank account, in case

project faces any problem or irregularity is found with regard to utilization of project funds or any such situation arises which demand freezing of the account. The project may initiate steps for freezing the account, in case, if any such fund is provided by the project authority / implementing Government Departments for executing project activities.

### 8.2 Sources of Funds and Fund Flow Arrangements

The PPs/ WUA may implement some of the planned works, subject to the financial limit set by the government and necessary guidance issued by the project authority. The works that can be taken up by the PPs/ WUAs (based on the capacity and interest of the PPs / WUAs) are like repairing of feeder channels, bund cleaning / clearance, revetments, cleaning of distribution channels, repair / construction of distribution channels etc. For such works, the project may support the PPs / WUAs, as guidance issued by the project authority. In case, if so desired by the project authority, list of activities to be taken up by the PP / WUA will be finalized, along with the

cost details based on the annual plan.

### 8.3 Book Keeping

The bookkeeping implies keeping track of events, accounts/transactions, etc. by writing them down in separate books and timely updating the same. To perform this activity, the PP/ WUA will take help of the SOs who will help the PP/ WUA in maintaining different records. The sub-committee members will be trained in book keeping and accounting. The SOs will prepare a detail plan with PP/ WUA and arranging training for them. The SPMU / EE-MI / associated depts. will provide necessary guidance in book keeping and accounting process and procedures. Following records and books of accounts should be regularly maintained and updated.

1. Cash Book;
2. Receipt Book;
3. Bill Register;
4. Contingent Register;
5. Day Book / Register;
6. Cheque Issue Register.

#### Registers

1. Property Register and Records such as (a) Inventory Register, (b) Register of vacant lands and building, (c) Register of income on Miscellaneous property, (d) Register of Machinery;
2. Membership Register;
3. Canal gauge Register;
4. Sanctions Register (if required, maintaining register of administrative and technical sanctions and payments);
5. Special fee and tax collection Register.

#### Minutes Register

1. General body meeting;
2. Managing Committee meeting;
3. Sub-committee meeting.

Apart from these documents / records, the PP/ WUA will also keep an up-to-date copy of the Act / Rules / Directions and orders of Government related to the project and functioning of the PP / WUA. The PP/ WUA should also have essential maps showing (a) the boundaries of the tank system and jurisdiction of the PP / WUA, (b) water conveyance system within the boundaries of the PP/ WUA jurisdiction, (c) the notified ayacut and (d) the areas under irrigation not falling within notified ayacut. The SPMU / EE-MI / associated Depts. will make available to the PP/ WUA the prescribed formats for these records.

### 8.4 Financial Audit

At the end of each financial year, and not later than three months after the commencement of the new financial year, accounts of PP/ WUA will be audited through a chartered accountant. The PP/ WUA will make available all the necessary financial records, documents, bills / vouchers, contracts etc. for the audit. The auditor will submit an audit report along with statement of accounts and balance sheet to the President of the concerned PPs/ WUA and EE-MI / PD-ATMA duly attesting the same. Audited report shall be submitted to the general body in its meeting for its approval. The Accountant / Auditor General would also conduct the audit of PPs / WUAs account as in case of other government expenditures.

## 8.5 Constitution of Cascade Coordination Committee

As one cascade will have more than one tank and so more than one PP / WUA, it is important to establish a coordination mechanism among the PPs/ WUAs for the overall development of the geo-hydrological unit. Looking at the need, it is proposed to have a Cascade Coordination Committee / Council (CCC) at the cascade level, involving all the PPs/ WUAs operating in the cascade. Details of the Cascade Coordination Committee is as below.

### **Legal Entity**

It is an informal coordinating body at the cascade level, without any legal entity. It is an association of all the PPs/ WUAs of the cascade with an objective of ensuring a collaborative mechanism for the overall development of the cascade, as a unit of project intervention and amicably settle the issues arising at the cascade level that pertains to more than one PP/ WUA functioning in the cascade.

### **Membership in the Cascade Coordination Committee**

1. All PPs/ WUAs of the cascade will be the member of the Committee, represented by their President or Secretary;
2. The Team Leader of local SO will also be the member of the Committee;
3. The local official of the implementing line Dept. will be the member of the committee;
4. The Local Sarpanch of the GP/GPs may be an invitee to the Coordination Committee, in case of requirement.

### **Role and Functions**

1. The committee will take up issues that are of common interest in nature and associated with more than one PP / WUA;
2. Any conflict and grievances that covers more than one PP/ WUA will be discussed and finalized in the committee;
3. Taking decision on development activities in geographical area / village of the cascade that covers more than one PP/ WUA or not under the operational jurisdiction of any of the PP/ WUA within the casca;
4. The committee will sit at least once in a month initially and later once in a quarter to discuss and dispose-off grievances;
5. The representative of the local SO will act as the convener of the committee;
6. The meeting will be presided by one of the Presidents / Secretary of the PP / WUA, on rotational basis;
7. Unanimous decision is expected from the committee. However, in case if no unanimity, there will be voting and each member, excluding the invitee, will have single voting right;
8. The decision of the committee shall be binding and will be recommended to the chairperson of the DLPMT for appropriate action. The process will be recorded for future reference;
9. The local SO will record minutes of the meeting and circulate among the PPs / WUA.



## 8.6 Recognition Award to the PPs

Based on the assessment of the SPMU / PD-ATMA / Associated Govt. Depts., best three performing PPs/ WUAs will be felicitated at the State level. Similarly, best three performing PPs/ WUAs of a particular project district will also be felicitated annually. The SPMU will design the assessment parameters, in consultation with DLPMT / PD-ATMA taking in to account three broad areas, i.e., PP/ WUA Governance mechanism, activity execution and its progress and overall achievement in terms of adoption of climate resilient agricultural technologies.

### **PP Governance**

1. Regularity of GB, EC and sub-committee meetings;
2. Maintenance of records / books of accounts;
3. Transparency;
4. Conflict and Grievance redressal mechanism and its effectiveness;
5. Funds generated by the PP / WUA.

### **Activity Execution and its Progress**

1. Plans taken up and executed in the operational jurisdiction of the PP as per the IIAP;
2. Progress of different activities implemented as per the schedule;
3. Water conservation, distribution scheduling and its management;
4. Crop water budgeting and crop planning.

### **Technology Adoption**

1. Adoption of INM/IPNM and IPM;
2. Micro irrigation system;
3. Soil organic carbon / soil organic matter enhancement practices;
4. Adoption of climate resilient seed varieties;
5. Organic farming;
6. Adoption of technologies in agriculture, horticulture and fishery etc.;

Each best performing PP/ WUA will be given recognition and felicitated at the State / district level annually in the presence of eminent dignitaries.

## 8.7 Provision of Incentive

The PPs/ WUAs are expected to improve water availability by adopting better water management practices, enforcing required measures that will reduce on-farm water consumption and support in conserving water for Rabi crops. The PPs/ WUAs will promote crop diversification and promote less water consuming crops adopting crop water budgeting principles and practices. Based on the outcomes of the PP / WUA performances, project will incentivize the PPs/ WUAs financially. The criteria to be adopted for incentivizing PPs/ WUAs are;

1. Less (benchmark to be set by WR Dept.) access to tank irrigation during Kharif;
2. Quantum of tank water saved during Kharif (to be estimated by the WR Dept.);

3. Total area under tank command covered under crop diversification (benchmark and assessment by Agriculture / Horticulture Dept.);
4. Increment in area in the tank command having non-paddy / low water consuming crops during Rabi (benchmark and assessment by Agriculture / Horticulture Dept.);
5. Percentage of water user fee collected of the total estimated amount

The amount of incentive to be provided would be in a matching grant mode, estimated based upon the quantum of water saved (in financial terms) in Kharif and/or Rabi or as per the norm decided by the Dept. of Water Resources, Govt. of Odisha from time to time.





## ANNEXURE I:

### Memorandum of Understanding between PP and the EE- Minor Irrigation

#### A. Preamble

Memorandum of Understanding (MOU) between Pani Panchayat (PP) and the Executive Engineer of Minor Irrigation (EE-MI), on willingness and to establish the Roles and Responsibilities of both the parties to Implement the Odisha Integrated Irrigation Project for Climate Resilient Agriculture (OIIPCR).

This MOU is signed between ----- (name of the PP) ----- PP of minor irrigation tank ----- (name of the tank) of ----- (name of cascade) irrigation project situated in ----- (village name) of ----- (Gram Panchayat) of ----- (Mandal name) of ----- (district name) (further referred to as the PP in the MoU).

AND

The Executive Engineer of Minor Irrigation of ----- (name of the project district) -----, (further referred to as the EE-MI in the MoU), Odisha Integrated Irrigation Project for Climate Resilient Agriculture (OIIPCR), Odisha, on this ----- (day) of ----- (month) -----(year).

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

#### B. Objectives of MOU

With the intention to provide meaningful role to PP in the management of minor irrigation tanks, the Government of Odisha has enacted the Odisha Pani Panchayat Act, 2002. As per the OPP Act, for the purpose of management of the minor irrigation tanks, the demarcated command area under the tank is transferred to the concerned PP 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 PP is to ensure maximum water use efficiency and increase in productivity. Towards this, Department of Water Resources (DOWR), Government of Odisha is implementing the Odisha Integrated Irrigation Project for Climate Resilient Agriculture (OIIPCRA) under which the tanks under a particular cascade and individual tanks are proposed to be restored to their design standard by facilitating the participation of the PPs in the process of their restoration and their management thereafter.

Therefore, the objective of executing this MoU is to arrive at an agreement between the PP and the Department of Water Resources (DOWR) (represented by the EE-MI) in understanding and establishing the roles and responsibilities of the respective parties in undertaking improvement of the tank system under the Odisha Integrated Irrigation Project for Climate Resilient Agriculture (OIIPCRA) and for future management.

### **C. Roles and Responsibilities of PP:**

#### **PP agrees to:**

1. Mobilize community contribution for the project from among the tank users at the rate, as fixed by both the parties with mutual consent of the total civil works (in cash and / or in kind). Contribution made by cash will be deposited in the PP O&M Account for future O&M activities;
2. Prepare Integrated Irrigation and Agriculture Plan (IIAP), including tribal development and other plans, taking into account the tank and operational jurisdiction of the PP to carry out restoration and revival of the tank system and implementation of sector / sub-sector specific activities;
3. Actively participate, implement, monitor and supervise the IIAP implementation in collaboration with other stakeholders of the project like SO, Line Departments etc.;
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 Government of Odisha (GoO) from time to time;
5. Undertake management and O&M works of the tank system, within the cascade, from the water charges collected as per the provisions of the OPP Act, 2002, and related amendments covering the following activities:
  - a) Desilting (feeder channels, irrigation channels and tank bed if required);
  - b) Jungle clearance in the tank system;
  - c) Embankment repairs;
  - d) Revetment;
  - e) Repairs to shutters;
  - f) Repairs to masonry and lining;
  - g) Cleaning and oiling of screw gears and gate grooves;
  - h) Emergent breach closing works;

- i) Reconstruction/ repairs of sluices;
  - j) Reconstruction / repairs to drops and regulators;
  - k) Repairs to waste weir and surplus system;
6. Distribute water among all the tank users equitably with a special focus on tail end users;
  7. Create awareness on economic use of water and promote efficient water use technologies & practices among the tank users;
  8. Collectively prepare water use and sector / sub-sector plans like, institution development and capacity building, agricultural, horticulture, fishery, agribusiness etc.;
  9. Prepare crop water budgeting and crop planning for each cropping season;
  10. Arbitrate and resolve any disputes over distribution of water among the tank users;
  11. Prevent encroachment and protect tank system;
  12. Supervise the quality of work and ensure work is carried out as per the specifications;
  13. Open and operate bank account(one account) in any Nationalized Bank;
  14. Maintain all the documents/ registers, including books of accounts of the PP as required under the project;
  15. Perform any other functions to accomplish the objectives of the project as and when required under the project and suggested by the PD-ATMA, DLPMT and EE\_MI.

#### **D. Role and Responsibilities of the Executive Engineer-Minor Irrigation (EE-MI)**

It is agreed that the Executive Engineer, Minor Irrigation (EE-MI) is willing to:

1. Provide finances, resources, technical support, supervision and training to PP to carry out restoration and revival of the tank system;
2. Provide finances, technical support, supervision and training to PP to carry out all PP 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 PP subsequent to the handing over of the tank system to the PP; and
5. Provide resources to carry out repairs of the tank system for damages caused by natural calamities, subsequent to restoration.

#### **E. General Conditions of the MoU**

This MOU is executed voluntarily between the PP and the EE-MI 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 Odisha PP Act, 2002, and the rules and orders issued by the Department of Water Resources, GoO to the Act and the Project Implementation Plan of the Odisha Integrated Irrigation Project for



Climate Resilient Agriculture (OIIPCR) and Manuals developed therein for the purpose.

Any dispute between the PP and the EE-MI 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 (or State Project Director in case of requirement) and his / her 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.

**F. 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 PP through its representative and the EE-MI 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 PP)

(Executive Engineer-MI)

President PP

Executive Engineer, MI

Witness 1:

Witness 1:

Witness 2:

Witness 2:

Signed this day, the ----- / ----- / ----- (dd / mm / yyyy)

## ANNEXURE II:

### Self-Rating of PP/ WUA (Pre-Project and Post-Implementation)

SN	Parameter Description	Indicator description	Weigh tage	Marks	Category	Marks scored	Recomm- ended activity
<b>I</b>	<b>Participation &amp; Dialogue</b>						
1	No of Management Committee meetings held annually	Managing Committee Meeting < 6	5	1	Poor	1	
		Managing Committee Meeting > 6 <=9		2	Average		
		Managing Committee Meeting > 9 <11		4	Good		
		Managing Committee Meeting >11		5	Excellent		
2	General body meetings and % of farmers participation	General Body Meeting not conducted.	5	1	Poor	2	
		One meeting conducted < 50% farmers participated		2	Average		
		One meeting conducted >50% farmers participated		4	Good		
		Two meetings conducted > 50% farmers participated		5	Excellent		
3	Transparency - Information Sharing (Wall paintings, Social Audit etc.,)	PP farmers not aware of financial details	5	1	Poor	2	
		Only EC members aware of financial information		2	Average		
		Finance information displayed in common place for all PP farmers		4	Good		
		Details of expenses read in GB, social audit and all PP farmers aware		5	Excellent		
	<b>Sub Total</b>		<b>15</b>			<b>5</b>	

SN	Parameter Description	Indicator description	Weightage	Marks	Category	Marks scored	Recommended activity
<b>II</b>	<b>Performance</b>						
4	Water Use Efficiency (Acres per MCFT)	< 5	15	5	Poor		
		5 - 8		8	Average		
		8-10		12	Good		
		>10		15	Excellent		
5	Area under Second crop (Of Cultivated Area)	<25%	5	1	Poor		
		25-50%		2	Average		
		51-80 %		4	Good		
		>80%		5	Excellent		
6	Water Use Fee Collection (self sufficiency, O&M MR)	<50%	10	2	Poor		
		51-75 %		5	Average		
		76-95%		8	Good		
		>95%		10	Excellent		
7	Additional resources mobilisation (Higher Water User Fee Rates, other means)	Nil Mobilisation	5	1	Poor		
		Upto 20% of Water User Fee Amount		2	Average		
		21 ~ 50% of Water User Fee Amount		4	Good		
		>50% of Water User Fee Amount		5	Excellent		
	<b>Sub Total</b>		<b>35</b>			<b>20</b>	
8	Updation of records	No records maintained	5	1	Poor		
		Records maintained occassionally		2	Average		
		Records maintained but not updated		4	Good		
		Records maintained and updated		5	Excellent		
9	Water release schedule	No plan prepared and farmers not aware of water release schedule	5	1	Poor		
		Preparation of plan and followed upto 50% schedule		2	Average		
		Release schedule announced and followed with 15 % variation		4	Good		
		Release schedule announced and followed regularly		5	Excellent		



SN	Parameter Description	Indicator description	Weightage	Marks	Category	Marks scored	Recommended activity
10	Water Schedule Implementation	Continuous flow as per water availability	5	1	Poor		
		Informal arrangements for water distribution		2	Average		
		Datewise schedule prepared and followed occasionally		4	Good		
		Datewise schedule prepared and followed regularly		5	Excellent		
11	Tail end issues & adequacy of water received by the tail ends	Less than 50% of identified Tailend areas receive inadequate or no water	10	2	Poor		
		51-75 % of identified Tailend areas receive adequate water		5	Average		
		76-90 % identified Tailend areas received adequate water		8	Good		
		>90 % or more of identified Tailend areas received adequate water		10	Excellent		
12	Joint Visit for Water User Fee (estimation of Fee collection)	No joint visit & EC Members, Farmers not aware of Fee demand.	5	1	Poor		
		Azmoish done by Departmental staff; Farmers and EC members are not aware of Water Fee Demand.		2	Average		
		Assessment done by the Dept. Staff before harvest, Members and Farmers aware of Fee demand		4	Good		
		Joint assessment by Dept & Members before harvest, Farmers & EC Members aware of Fee demand		5	Excellent		
13	Conflict resolution	Conflicts exist, not resolved	5	1	Poor		
		Conflicts exist, discussed not resolved		2	Average		
		Conflicts exist, discussed, partially resolved		4	Good		
		No conflicts (unsolved), Managing Committee resolves all issues.		5	Excellent		

SN	Parameter Description	Indicator description	Weightage	Marks	Category	Marks scored	Recommended activity
14	O&M works	No O&M plan, No works done	5	1	Poor		
		No O&M plan but works done by members		2	Average		
		Deptt. prepared the O&M plan and work done by members		4	Good		
		PP prepared O&M plan and completed works before monsoon		5	Excellent		
<b>Sub Total</b>			<b>40</b>			<b>25</b>	
IV	Innovations & Technology adoption						
15	Innovations in water management, water sharing ,Conjunctive use, Water Audit, Collective action, Cropping practices(SRI, ID, Horti) etc.,	Not discussed and not implemented	10	2	Poor		
		New practices discussed and introduced		5	Average		
		New practices discussed, introduced and 50% adopted		8	Good		
		New practices discussed, introduced and >50% adopted.		10	Excellent		
<b>Sub Total</b>			<b>10</b>			<b>7</b>	

In the recommended activity column, if the PP gets poor and average then put 1 otherwise don't write anything leave as it is.

For the purposes of quantifying the level of performance of PP the marks to be awarded as shown against the weightage column and the category corresponding.

Category	Total Score	Score of the PP				
		Score	Poor	Average	Good	Excellent
			(D)	(C)	(B)	(A)
Participation & Dialogue	15					
Performance	35					
Self-Management	40					
Innovations & Technology adoption	10					
Overall Score & Rank	100					

Participation & Dialogue				Performance				Self-Management			
Rank	Score	Grade	Percent	Rank	Score	Grade	Percent	Rank	Score	Grade	Percent
Poor	3	D	20	Poor	7	D	20	Poor	8	D	20
Average	6	C	40	Average	14	C	40	Average	16	C	40
Good	12	B	80	Good	21	B	60	Good	24	B	60
Excellent	15	A	100	Excellent	35	A	100	Excellent	40	A	100
Innovation & Technology				OVERALL RANK & GRADE							
Rank	Score	Grade	Percent	Total	Score	Grade	Percent				
Poor	2	D	20	Poor	20	D	20				
Average	4	C	40	Average	40	C	40				
Good	6	B	60	Good	63	B	63				
Excellent	10	A	100	Excellent	100	A	100				

## ANNEXURE III:

### Participatory Planning Environment Assessment

#### Organizational and Financial Environment:

SN	Item	Yes / No	Remarks
1	Is the PP meeting regularly?		
2	Has the PP carried out any O&M activity on the tank system?		
3	Has the PP carried out any water budgeting and crop planning in the past?		
4	Has the PP adopted any efficient water use technologies & practices?		
5	Are the sub-committees of the PP constituted?		
6	If constituted, are the sub-committees carrying out their responsibilities?		
7	Does the PP collect water taxes regularly in the past?		
8	Is the PP maintaining its records & books regularly?		
9	Does the PP have any past experience of procurement of materials and services?		
10	Does the PP have any existing O&M funds?		
11	Are there any other sources from which the PP is receiving funds?		
12	Are there any funds available at the district level which the PP can avail of?		

#### Participatory Planning Environment:

SN	Item	Yes / No	Remarks
1	Has the PP ever carried out local level planning in the past		
2	Has there been any attempt in the past to train and / or provide technical backstopping to PP for local planning?		
3	Is the PP aware of its responsibility & power to carry out local level planning for the O&M of its tank system?		
4	Does the PP have any data base available for carrying out local level planning?		
5	Does PP level Sub-Committees exist (specify)		
6	Whether the Sub-Committees are functioning		
7	What are the different developmental projects that are being implemented in the Village? <i>[specify]</i>		



**People's Participation in the Planning Process:**

SN	Item	Yes / No	If Yes, Specify
1	Has any action been taken to promote people's participation in PP?		
2	Have members been consulted during planning of PP activities in the past?		
3	Have members contributed in terms of labour / finance in past PP plan activities?		
4	Have people made any contribution in cash / kind in past PP activities?		
5	Have people participated in O&M activities implemented by PP in the past?		
6	Are people willing to pay water charges to the PP?		
7	Are the people willing to carry out O&M activities on the tank system under PP co-ordination in the future?		
8	Are the people willing to carry out water audits and crop planning under the co-ordination of the PP?		
9	Are the people willing to adopt efficient water use practices and technologies under the co-ordination of the PP?		
10	Are the people willing to make contribution in cash & kind towards the project?		

**Note:**

*The Participatory Planning Environment Assessment is objectively designed to understand the current functioning of PP in different aspects (planning, implementing, monitoring etc.), strengths and weaknesses of PP, areas that need further strengthening etc. The findings of the assessment will be a part of the overall institution development framework and PP capacity building plan. The identified gray areas will be address during the project life through capacity building measures.*

## ANNEXURE IV:

### Tank System Status and Restoration

Particulars	Mapping Aspects	Activity Planned (Yes/No)	Activity Taken Up (Yes/No)	Value of Work (Rs.)	Implementing Agency	Progress to date
Catchment	Highly encroached and disturbed					
	Disturbed					
	Encroached					
	No Problem					
Feeder Channel	Highly blocked & disturbed					
	Not much blocked					
	Good condition					
Tank Bed	Heavily silted					
	Moderately silted					
	Not silted					
	Heavy tree growth					
	Heavily weeded					
	Moderately weeded					
	No weeds					
Tank Bund	Breached					
	Badly dilapidated					
	Moderately dilapidated					
	Fairly good					
	Good					
	No Problem					
Sluice/s	Not working and need Replacement					
	Dilapidated and need major repair					
	Need minor repair					
	In Good Condition					

Particulars	Mapping Aspects	Activity Planned (Yes/No)	Activity Taken Up (Yes/No)	Value of Work (Rs.)	Implementing Agency	Progress to date
Surplus Weir	None existent					
	Needs replacement					
	Major repair					
	Minor repair					
	In Good Condition					
Canal System	Non-existent					
	MC needs repairs					
	Main canal not adequate					
	MC needs extension					
	Canal is in good condition					

## ANNEXURE V:

### Tank Details

1.	Cascade Name:		1.	Cascade No.:	
2.	Name of the Tank:		2.	Tank No.	
5.	District / GP / Village Tank Code:				
6.	PP No.:		7.	Year of Construction:	
8.	Catchment Area (Ha / Ac):		Ha:	Acre:	
7a	Independent:		Intercepted:		
7b	No. of Feeder channels:				
8.	Tank bed (Ac):		Silted or not:		
9.	Dimensions of Tank Bund (M):	Length:	Width:	Height:	
9a	Side slopes:		Upstream:	Down Stream:	
9b	Bund Top Level:		Sluice sill level:		
9c	Level at MFL:		Level at FTL level:		
10.	No. of Sluices:				
11.	Waste weir Details:	Length:	Crest height:	Type:	
12.	Original Storage Capacity (TMcft):		Present Storage (TMcft):		
13	Original Dead storage (TMcft):		Present Dead storage (TMcft):		
14	No. of canals:				
15	Total Ayacut (Acres):				

Canal	Length (m)	Irrigated Area	Supplementation	Total
		100% (Ac) Tank		
1				
2				
3				
4				

Landholding Categories (disaggregated by size)									
Marginal Farmers		Small Farmers		Large Farmers		Women Farmers		Tribal Farmers	
No.	Land holdings area (acre)	No.	Land holdings area (acre)	No.	Land holdings area (acre)	No.	Land holdings area (acre)	No.	Land holdings area (acre)



## ANNEXURE VI:

### PP/ WUA Committee Members

Name of the PP:

Location of Office:

#### Members of the PP/ WUA Executive Committee

SN	Name	Designation	Occupation	Sex (M/F)
1				
2				
3				
4				
5				
6				

#### Members of the PP/ WUA Sub-Committees:

SN	Name of the Sub-Committee	Name of the Member	Designation	Occupation	Sex (M/F)
<b>A</b>	<b>Finance &amp; Resource</b>				
<b>B</b>	<b>Works</b>				
<b>C</b>	<b>Water Management</b>				

## ANNEXURE VII: Irrigated Area Details

Total Cultivated Area under Tank Command (Ha.):

Net Irrigated Area (Ha.):

Gross Irrigated Area (Ha.):

### Rainfall and Area Cultivated:

Particulars	2019	2020	2021	2022	2023	2024	2025
Rainfall							
Rainy Days							
Total Cultivable Area							
Cultivated Area (Ha.) –Kharif							
Cultivated Area (Ha.) – Rabi							
Cultivated Area (Ha.) – Fallow							

### Crop Area and Area Irrigated (Ha.):

Particulars		2019		2020		2021		2022	
<i>(Give crop names)</i>		Crop Area	Area Irrigated	Crop Area	Area Irrigated	Crop Area	Area Irrigated	Crop Area	Area Irrigated
Season	Crops:								
Kharif	1.								
	2.								
	3.								
	<b>Total</b>								
Rabi	1.								
	2.								
	3.								
	<b>Total</b>								
Total	1.								
	2.								
	3.								
	<b>Grand Total</b>								

## ANNEXURE VIII:

### Capacity Building of PP / WUA

Training Theme	Training Organized For	No. of Training days	Training Dates	No. of Participants		Facilitated by
				Male	Female	
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						
<b>TOTAL</b>						

## ANNEXURE IX:

### PP/ WUA Records /Books of Accounts

SN	Type of Records	Record No.	Period of Maintenance				Updated (Yes / No)	Last Updated (Date)
			Daily	Weekly	Monthly	Quarterly		
1								
2								
3								
4								
5								
6								



## ANNEXURE X:

### Revenue Collection and Expenditure

Source of Revenue	Revenue Collection (Rs)							
	2019	2020	2021	2022	2023	2024	2025	2026
Water Fee (plough back)								
Fishery Lease								
Contribution								
Agribusiness								
Custom Hiring (CHC)								
Donations								
Others								

Heads of Expenditure	Expenditure (Rs)							
	2019	2020	2021	2022	2023	2024	2025	2026
1.								
2.								
3.								
4.								
5.								
6.								
7.								

## ANNEXURE XI:

### Note on IIAP Process

#### Introduction:

To a farmer, IIAP means getting the right amount of water to the crops at the right time with minimum labor and expense. It refers to meeting the water needs of the farmers as efficiently as possible, with minimum waste or loss. The IIAP can benefit the farmers, their institution as well as to the environment. The range of potential benefits includes:

1. Better water service to farmers / water users;
2. More effective use of available water;
3. Reduced operating costs;
4. Improved revenues;
5. Improved crop yields and quality;
6. Reduced on-farm costs;
7. Development of additional water supply capabilities;
8. Diminished groundwater overdraft;
9. Improved system and water supply reliability;
10. Reduce need for new or expanded water supplies;
11. Reduced drought impacts.

There are a variety of problems that can be avoided by such planning, like

1. Water shortage during Kharif and Rabi;
2. Excessive losses or spills from water delivery systems;
3. Over or under application of water on farm fields;
4. Loss of water through waste or abandonment;
5. Adverse relationships with other water users;
6. Drainage and erosion control problems;
7. Ill-timed water deliveries to farm fields.

#### The Planning Process

The planning process of IIAP is a logical sequence of decision-making steps or activities that can be followed to achieve some desired outcome. Steps in the process include:

1. Gathering information;
2. Identifying and prioritizing issues;
3. Setting goals and objectives;
4. Identifying measures capable of achieving the goal / Objective;
5. Evaluating the planned measures;
6. Defining a plan of action;
7. Implementing the plan of action;
8. Monitoring implementation progress;
9. Evaluating progress and updating the plan.

In the context of irrigation and agriculture planning, it can be used as a framework to ensure a systematic and thorough decision-making process. Integrated Irrigation and Agriculture Planning should be viewed as an ongoing activity and not as a one-time effort. It must become a routine part (for Kharif and Rabi) to be effective in the long run.

### **Step 1: Information Collection**

The first step in the planning process includes information gathering and organising it in a way that is helpful in problem-solving along with bridging information gaps and uncertainties. The information that are needed are like;

**Physical Setting:** Understanding the local hydrology and climatic situation and identify the factors which affect water supplies and irrigation demands. Data that would be useful include (1) hydrology, (2) water availability and (3) climate information such as precipitation and temperature.

**Lands and Crops:** Understanding the agricultural details is key to develop a sound management plan. Data that should be collected include (1) acreage under each crop during Kharif and Rabi (household and plot specific information), (2) irrigation coverage and methods, and (3) soil, topography, and drainage

**Government Policies:** The plan will involve alignment to the existing policies of the Government which covers (1) water delivery procedures / mechanism, (2) water pricing structure, (3) water allocation etc. It would also include operation of irrigation sources, main canal operations, timing of use of different sources, groundwater extraction policies, flood control policies, facilities maintenance etc.

**Water Resources Inventory:** The infrastructure and water supply currently in place will be the most important factors in determining where water use efficiencies can be improved. Records of flow amounts will be key to estimating losses and potential savings. The types of data that may require are (1) irrigation sources and distribution system, (2) groundwater extraction capacities and actual extraction, (3) storage capacities, storage and release records, and evaporation data, (4) delivery

records including deliveries during Kharif and Rabi etc.

**Other Water Uses:** It covers non-agricultural water uses such as domestic, cultural or pisciculture including recreational and environmental uses.

**Existing Water Management and Conservation Measures:** Measures that have already been taken for irrigation improvement / management and agriculture promotion. This would include use of micro irrigation system, training / capacity building of farmers in water management, community water regulation mechanism, water sharing norms etc. Lessons from different irrigation and agriculture planning process and its execution will be valuable inputs for planning.

### **Step 2: Identifying and Prioritizing Issues**

Issues are the reasons or justifications for performing actions which may result from specific requirements of the community. Water management planning issues are often thought to relate only to water supply issues. However, issues can involve different aspects of irrigation and agriculture, including water management and use. Areas to be considered should include (1) cropping pattern / crop production, (2) availability of facilities and its capabilities, (3) finances, (4) information collection and its management, (5) legal, institutional, and/or environmental requirements, (6) operation and maintenance, (7) policy environment, (8) soil erosion and soil characteristics, (9) water supply or water availability and (10) water use. Local irrigation and agricultural issues can be identified in a participatory manner (involving PP / WUA and departmental officials) based on day-to-day observation and experience of people / water users. Another important way to learn about irrigation and agriculture is by analyzing the collected data.

**Setting Priorities:** Identification of issues will follow setting priorities. Priorities will emphasize issues that are perceived to be important to the greatest number of people in the command area. The process of prioritizing the issues will identify critical issues that should be given immediate attention. The lower priority issues will require less immediate attention and some may be of so low a priority that no attention is required.

### **Step 3: Setting Goals and Objectives**

In addition to addressing specific issues, some other areas also required to be focused, such as (1) leadership in solving irrigation and crop planning issues (institutional arrangement), (2) coordination with farmers and other stakeholders, and (3) enhancing the water productivity and efficiency in the tank command. The goal and objective for irrigation and agriculture plan can be framed taking in to account all these aspects. The goal of the IIAP could be addressing actual issues faced by the farmers with regard to availability of water during Kharif and Rabi. The objective of the planning process is to identify and take appropriate actions to address irrigation and water availability issues.



#### **Step 4: Listing Out Action Points**

At this point in the planning process, all that are required to do is to select all those measures that have the potential in achieving the planning goal / objectives. More than one measure might be required to completely achieve the goal of improving irrigation and agriculture. Consultation with PP / WUA will help to evolve different measures which are more location specific and would be useful for the farmers in general. The action points could be (1) improvement in water supply and its measurement, (2) changes in the cropping pattern / crop varieties during Kharif and Rabi, (3) changes in water pricing and billing methods, (4) education and training programs, (5) improvement in operational facility to reduce water losses, (6) improvements in water delivery and scheduling, (7) incentives for improving on-farm water management, (8) development of contingency plans for shortage periods, (9) ways of water sharing among the farmers (among high and low water demanding farmers), (10) use of water saving instruments etc.

#### **Step 5: Evaluating the Measures**

This phase of the planning activity involves investigating how well each option or measure might contribute in achieving the overall planning goal. Usually this will refer to assessments of costs, water savings or other benefits, community acceptability etc. of each of the suggested measures. In evaluation of measures, certain possibilities might be kept aside and certain measures may be modified to the acceptable norms. With this process, most promising options will be selected in the planning for execution.

#### **Step 6: Defining A Plan of Action**

Based on critical examination, most suitable option/s for irrigation and agricultural improvement will be selected. It will cover selection of different crops based on water availability, sharing of water among the farmers, availability of quantum of water for different crops etc. Various management improvement measures may also be clubbed at the tank command level, with the consent of the farmers like reducing high water consuming crops in Kharif / Rabi, promotion of micro irrigation system, ground water draft based on its availability (safe, semi-critical) etc. In order to make irrigation and agriculture plan a reality, detail schedule will be prepared taking all the planned measures in to account.

#### **Step 7: Implementing the Plan of Action and Monitoring**

Once the action plan is prepared and agreed by all concerns, it will be executed as per the plan. PP / WUA will play a critical role in ensuring the follow up of the execution and monitoring the overall process.

## ANNEXURE XII:

### Contingency Planning

A. Local Agricultural Profile			
District:		Block	
GP:		Village:	
Cascade No.		Tank Name:	
Latitude		Longitude	
Altitude			

B. Rainfall				
Particulars	Average (mm)	Normal Rainy days (number)	Normal Onset (specify week and month)	Normal Cessation (specify week and month)
SW monsoon (June-Sep):				
NE Monsoon (Oct-Dec):				
Winter (Jan-February)				
Summer (March-May)				
Annual				

C. Land Use Pattern (in Ha.) in the Cascade / Tank			
Geographical area		Cultivable Waste Land	
Cultivable area		Land under Misc. tree crops and groves	
Forest area		Barren and uncultivable land	
Land under non-agricultural use		Current Fallows	
Permanent Pastures		Other fallows	

D. Major Soils		
Soil Type	Area (in Ha.)	Percentage (%)
1.		
2.		
3.		
4.		

<b>E. Agriculture Land Use</b>	
<b>Particulars</b>	<b>Area (in Ha.)</b>
Net Sown Area	
Area Sown More than Once	
Gross Cropped Area	
Cropping Intensity (%)	

<b>F. Irrigation Coverage</b>		
<b>Irrigated Area</b>	<b>Area (in Ha.)</b>	<b>Percentage of Area (%)</b>
Net cultivated area		
Net irrigated area		
Gross irrigated area		
Rainfed area		

<b>G. Source of Irrigation</b>			
<b>Sources</b>	<b>No.</b>	<b>Area (in Ha.)</b>	<b>Percentage of Area</b>
Canals			
Tanks			
Open wells			
Bore wells			
Lift irrigation			
Other sources			
Total irrigated area			

<b>H. Ground Water Availability and Use</b>			
<b>Category</b>	<b>Yes</b>	<b>No</b>	<b>Remark</b>
Safe			
Semi-Critical			
Critical			
Over exploited			

<b>I. Area Under Crops (Agriculture / Horticulture)</b>								
<b>Crops</b>	<b>Kharif</b>			<b>Rabi</b>			<b>Summer</b>	<b>Total</b>
	<b>Irrigated</b>	<b>Rainfed</b>	<b>Total</b>	<b>Irrigated</b>	<b>Rainfed</b>	<b>Total</b>		
1. Paddy								
2. Black Gram								
3. Green Gram								

4. Arhar								
5. Groundnut								
6. Sunflower								
7. Vegetables								
8.								
9.								
10.								
11								
12.								

J. Production and Productivity									
Crops	Kharif		Rabi		Summer		Total		
	P	Y	P	Y	P	Y	P	Y	
1. Paddy									
2. Black Gram									
3. Green Gram									
4. Arhar									
5. Groundnut									
6. Sunflower									
7. Vegetables									
8.									
9.									
10.									
11.									
12.									

Note: P: Production; Y: Yield

K. Sowing Period / Window (in Week and Month)				
Crop	Kharif-Rainfed	Kharif-Irrigated	Rabi-Rainfed	Rabi-Irrigated
1.				
2.				
3.				
4.				
5.				
6.				
7.				

<b>L. Major Contingencies</b>			
<b>Incidents</b>	<b>Regular Occurrence</b>	<b>Occasional Occurrence</b>	<b>No Occurrence</b>
Drought			
Flood			
Cyclone			
Hail storm			
Heat wave			
Cold wave			
Frost			
Sea water intrusion			
Pests and disease outbreak			
Other (Specify)			

<b>M. Strategies for Weather Related Contingencies</b>					
<b>Drought</b>	<b>Major Farming Situation</b>	<b>Normal Crop / Cropping System</b>	<b>Change in Crop / Cropping System / Variety</b>	<b>Agronomic Measures</b>	<b>Implementation Arrangement</b>
Early season drought (delayed onset)					
Delay by 2 weeks					
Delay by 4 weeks					
Delay by 6 weeks					
Delay by 8 weeks					
Early Season Drought					
Mid-Season Drought					
Terminal Drought					
Delayed / limited release					
Lack of inflows					
Insufficient ground water					
<b>Flood</b>					
Transient Water Logging / Partial Inundation					



<b>N. Overall Contingent Strategies</b>			
<b>Contingencies</b>	<b>Before the Event</b>	<b>During the Event</b>	<b>After the Event</b>
Drought			
Flood			
Cyclone			
Hail storm			
Heat wave			
Cold wave			
Frost			
Sea water intrusion			
Pests and disease outbreak			
Other (Specify)			

*Note: This is a sample format covering agriculture and horticultural aspects. Other aspects can be clubbed in to the format during planning. The format to be adopted only after piloting.*



