Table of Contents

List of Tables and Figures

Tables

Figures

Tables in the Appendices

Abbreviation

CPR…… Common Pool Resources

CPA……Cooperative Promotion Agency

EPLUA……Oromia Environmental Protection and Land Use Authority

EIA……. Environmental Impact Assessment

E.C…….Ethiopian Calander

HHs……Households

IWRM…….Irrigation Water Resource Management

IWUA……Irrigation Water Users Association

NGOs…….Non-Government Organization

O&M ……Organization & Management

OIDA……Oromia Irrigation Development Authority

PA…… Peasant Association

WUA……Water Users' Association

1 INTRODUCTION

1.1 Background

The potential of water governance institutions in keeping the common pool characteristics of irrigation schemes and their sustainability is no doubt substantial, but their success in performing their duties differs from place to place and level of the scheme viz small, micro and macro. There are some settings where appropriators are able to self-organize successfully and other settings where they are not. Despite the adoption of Irrigation Water Resource Management (IWRM)principles, overuse and mismanagement of water, competition and conflict over water are common challenges in Farmer-Managed Irrigation. These challenges translate to one central question: is the water management institutions in-use achieving the desired performance? Common Pool Resources (CPRs) including water show that if the resource is mismanaged or depleted, the problem might be attributed to the fact that institutions do not fit well to the characteristics of the resource or to the users of the resource. This implies that available institutions are not performing adequately.

Common Pool Resource system has a structured ownership arrangement within which rules are developed andenforced, group size is known, and incentives exist for co-owners to follow accepted institutional arrangements. Suchsocial arrangement regulating the maintenance and consumption of CPR is termed as common property regime. Irrigation schemes, fishing grounds, grazing lands, underground water and forests by their nature areexamples of CPRs(Devotha B. Mosha *et.al.* 2016). In the case of farmer- managed irrigation schemes, enabling legal system of land and water use rights, strong woreda level state irrigation agency support service (irrigation extension), well established water user associations through which the purpose of irrigation is achieved, clear policy direction on irrigable land use and rights, defined tenure rights and responsibilities should be put in place, before schemes begins to operate.

In most cases, weaknesses in the organization and management are the major reason for the poor performance of irrigation schemes. The good performance of irrigation scheme depends on an efficient operation and maintenance of the systems, as well as provision of services supported by detail technical knowledge and skills accompanied by accurate planning and budgeting.

The fulfillment of this condition relies on the strength, ability and commitment of the irrigation management organizations and the user community, keeping and utilizing the scheme and associated resources. This of course requires developing the management and technical capacity of the farmers and institutions that provide support so that they would effectively and efficiently manage their resources and use their scheme in a sustainable manner.

Therefore, the organization and management study component of the Irba Giristuirrigation Project has followed complete assessment of current policies related to irrigation development and management and other relevant policies, involvement of stakeholders including institutions at regional levels, options for future ownership and management of the scheme and possible ways of financing the operation and maintenance works.

Finally, the study come up with institutional arrangement and organizational structures suitable management methods and training programs, which are determinant factors for sustainable management and good performance of the Irrigation scheme if irrigation is required to promote sustainable economy growth of and plays a significant role in poverty reduction through enhancing the productivity and profitability of an appropriate resource use.

2 Objectives

2.1 General Objective

The aim of Irba Giristu Irrigation Project Organization and Management study is to come up with appropriate institutional set- up for the implementation of appropriate organizational structure, suitable management methods and adequate services for sustainable and good irrigation schemes performance.

2.1.1 Specific Objectives

- to propose appropriate organizational structure, suitable management and adequate services,
- To develop, functions and capacity requirements of the units that will be responsible to coordinate and undertake activities pertaining to scheme management, operation and maintenance.
- to propose roles of government institutions and the users to manage, operate and maintain the scheme

3. Scope of the Study

The scope of the study is to review and define institutional and legal requirements for the ownership, governance and management of the irrigation system. The scope also has extended to assessing regional and local institutions and stakeholders to be involved in the project implementation cycle. Scope of the organization and management study includes the following major activities.

- Collect data form literatures pertaining institutional management practices and challenges of small scale irrigation schemes in our country, review relevant existing policies, regulations, strategies and proclamation and propose relevant institutions and management system for farmers-managed irrigation scheme.
- Develop project implementing concerned organizations and beneficiaries
- Draw up an organizational structure required to manage the project

- Required manpower
- Required qualification
- Functions

- Identify training requirement.
- Produce study report that shows the required organizational arrangement and responsibility of institution in implementing and operating the project.

4. Methodology and Approaches

Methodologies and approaches used to conduct O&M study of Irba Giristuincludes both appraisal of theoretical assumptions on conditions of possibility for successful irrigation scheme management and mainly employed secondary data collected through desk review of regional and national irrigation policy statements, legal framework regarding irrigation land and water right institutions, proclamations and regulations. Primary data was collected through, field visit, interview and consultation with stakeholders. The approaches followed are presented as below:

a) Review of Legal framework and relevant resources/ literatures

Review of existing laws and policies pertaining to water resources development and management; relevant documents and literature including necessary experience at local and international levels;

b) Interviews of experts and consultation of institutions and stakeholders

Interview was conducted at a number of sector organization, management and personnel levels so that the findings would reflect the entire spectrum of existing situation of the institutions (stakeholders) to be involving in the irrigation scheme management, operations and maintenances.

c) Analysis

Information gathered have been critically analyzed to come up with an appropriate organizational structure, suitable management methods and adequate services, which ensure sustainable and good irrigation schemes performance.

5. Review of the Legal Frame Works and Existing Situation

In order to propose suitable institutional arrangement and organizational structure, it is important to understand the existing policy, legal framework, roles and responsibilities of the pertinent institutions that involve in the irrigation project implementation and provision of services. Through desk review of relevant documents legal framework to be based on are presented in the following sub-sections.

5.1 Major Policies and strategies

5.1.1 Environmental policy

The Environment Policy of Ethiopia states the overall goal is to improve and enhance the health and quality of life of all Ethiopians and to promote sustainable social and economic development through sound management and use of natural, human-made and cultural resources and the environment as a whole so as to meet the needs of the present generation without compromising the ability of future generations to meet their own needs".

Guidelines for EIAs have also been developed aimed at the integration of environmental concerns into development planning, thus preventing environmental deterioration, and contributing to improved land and water management for sustainable development and ensure the needs of the present generation without compromising the ability of future generations to meet their own needs to sustain and continue development from generation to generation.

5.1.2 Ethiopian Water sector Strategy

To ensure the sustainability of the irrigation schemes, the institutional aspect of the strategy stipulates to:

- Ensure operational sustainability of the irrigation schemes by establishing O&M units within the regional bureaus, preparation of O&M manuals and strengthening the capacities of the implementers and beneficiaries.
- Establish self-financing autonomous public institutions to undertake O&M activities of large-scale irrigation schemes.

- Encourage the participation of private sector, especially for the O & M and management phases of medium and large-scale irrigation schemes.
- Sustain the functioning of irrigation systems through their regular O&M andgradualupgrading of the O&M capacities of the local beneficiaries.

According to the strategy, by establishing O&M units within the regional bureaus, preparation of O&M manuals and strengthening the capacities of the implementers and beneficiaries, the sustainability of management, operation and maintenance activities of schemes, will be ensured.
The strategies of the irrigation sector cover a wide range of issues across the borders of technical and engineering, financial & economic, institutional, capacity building, and social and environmental aspects. In this regard, most of the relevant issues are:

5.2. Major applicable policies and strategies

5.2.1 Irrigation policy

This policy explains role of irrigation in the nationaldevelopment policy; the national economic development strategy placesheavier emphasis on the agricultural sector to enhance food-self-sufficiencyand ensure food security at the household level and todevelop an agriculture-based industrial development in the long run. Based on the above,the overall objective of irrigation policy is to develop the huge irrigatedagriculture potential for the production of food crops and raw materialsneeded for agro industries, on efficiency, and sustainable basis andwithout degrading the fertility of the production fields and waterresources base.The detail objectives are as follows:

1) Development and enhancement of small scale irrigated agriculture and grazing lands for food self-sufficiency at the household level.
2) Development and enhancement of small-, medium- and large – scale irrigated agriculture for food security and food self – sufficiency at national level including export earnings and to satisfy local agro industrial demands.
3) Promotion of irrigation study, planning and implementation on economically viable, socially equitable, technically efficient, environmentally sound basis as well as

development of sustainable, guideline for irrigation master plan study preparation on surface water resources

5.3 Legal Frame Work and Institutions

5.3.1 Pertinent Proclamation and Regulations

There are some relevant rules and regulations that need to be considered in connection with irrigation schemes management and operation. Accordingly, important proclamations and regulations are reviewed as bellow:

b) Ethiopian water Resources Management Proclamation

From the Proclamation, the following articles have been considered, as they are more relevant articles to the irrigation sector development. These are:

Article 6 (2)

It is one of the Fundamental Principles of the Proclamation that stipulates the following:
"The social and economic development programs, investment plans and programs and water resources development activities of any person, shall be based on the country's Water Resources policy, the relevant Basin Master Plan Studies and Water resources laws".

Article 27

This Article initiates the Water Users' Association (WUA) establishment as follows;

- *The supervising body may, in consultation with the appropriate public bodies,* encourage the establishment of water users' associations, as it deems necessary to utilize water for beneficial uses.
- Association of water users may be established upon initiation and the will of the users.

This proclamation is a significant piece of legislation with important contributions to make towards the proper implementation of the irrigation project at hand, since it lays the basis for the utilization of water resources for irrigation purposes, provides legal frameworks for water resources development activities and an establishment of Water Users' Associations. However,

the Proclamation has left the details of organization of water users' association to the subsidiary legislation, i.e. the **Ethiopian Water Resource Management Regulation**, which is presented hereunder.

c) Ethiopian Water Resource Management Regulation

Regarding Water Users Cooperative Societies Formation; Article 28 of the regulation stipulates the following:

- "The holders of water use permit pursuant to article 27 of the Proclamation or persons exempted from the requirement of permit may establish a water user's cooperative society".
- "The Cooperative Societies Proclamation No. 147/1998 shall have effect on water users' Cooperative societies".

The Regulation details organization of water user cooperatives such as registration, permit fees, charges for use of water etc**. Proclamation No. 147/1998-Cooperative Societies** proclamation is issued to create enabling environment for the establishment of cooperative societies, which are formed by individuals on voluntarily basis and who have similar needs for creating savings and mutual assistance among themselves by pooling their resources, knowledge and property, in order to receive dividends from the profits made.

In order to maximize their profits, Cooperatives involve in different commercial activities, such as the supply of inputs, processing and agricultural marketing activities. The scope of the Cooperatives' tasks is wider than the Water Users' Associations' which should be limited to water management, that is, the management, operation and maintenance of the irrigation system.

As a result, the Cooperative Societies Proclamation No. 147/1998 is not a suitable guideline to regulate the establishment and operation of the Water Users' Associations as internationally accepted irrigation management organizations.

e) Proclamation for the establishment of Irrigation Water Users' Associations (IWUAs)

The IWUA Proclamation creates a specific legal basis for the establishment of Irrigation Water Users' Associations (IWUAs) as a particular type of legal entity for operation and management of irrigation and drainage systems. The pre-existing legal framework in Ethiopia (i.e.

proclamations on cooperatives and associations) does not provide an appropriate legal basis for IWUA establishment given that:

- IWUAs are public law organizations and their mandate is of a public interest nature;
- Membership is compulsory;
- IWUAs operate on a non-profit / non-commercial basis but they will nevertheless provide services to their members, namely the provision of irrigation water, on a paid basis;
- IWUAs are self-managed organizations governed by their members, but due to the public interest nature of their tasks are subject to some form of supervision by the government.

In accordance with their mandate, the tasks of IWUAs are strictly limited to management, operation and maintenance of an irrigation and drainage system and watershed management/ protection. IWUAs are not permitted to undertake any other activities such as the procurementof agricultural inputs or marketing of the commodities produced within the irrigation systemthey manage.

5.3.2. Regional level institutions involving in water management, watershed development, landadministration and environment

At Regional level, institutions involving in irrigation project implementation have four tiers of organizational set-up. These are the Regional level Bureaus, Zonal level Departments/offices, Woreda level offices, and the grass-root level institutions-Kebele Administration and Water users' Associations/Irrigation Cooperatives. The tiers of organizational set-up largely depend on the prevailing political administrative structure of the Region. In addition to the line offices, i.e., institutions that are directly responsible for project implementation, political administrative structures are also involve in the development project implementations.

5.3.3. Oromia Irrigation Development Authority (OIDA)

Oromia Irrigation Development Authority (OIDA) is responsible for the regional irrigation development with its zonal and Woreda level subordinate irrigation development offices. It is also responsible for the coordination and close supervision of the project implementation up to the final transfer of the scheme to the beneficiaries and or/to the Government institution to be established to operate and manage it. In addition, OIDA is responsible for the operation and maintenance of large scale irrigation schemes, which are beyond the capacity of the community. In general, the Authority is responsible for:

- Supervision and follow up the implementation of the irrigation projects;
- Coordination of the stake holders during irrigation project implementation stage;
- Training of irrigation water user farmers on water management, i.e., Operation & maintenance;
- Enforcement of water related regulations;
- Land distribution and registration in collaboration with Kebele Administration;
- Cause payment of compensation to those affected by the construction of irrigation scheme;

On the other hand, OIDA is responsible for setting the water rate (cost recovery) to be paid by irrigation water user farmers. It assumes also the responsibility of provision of necessary regulatory frameworks in irrigation water utilization and it is mandated by the Regional State to, own, operate and maintain large- scale irrigation in the region. This includes:

- ❖ Own and manage large irrigation schemes.
- ❖ Carry out operation and maintenance of irrigations systems and collect water charges in accordance with the cost recovery directives to be issued by the regional state.

As OIDA is big institution and expected to operate in projects that worth its reputation and responsibility is not expected to meddle in such small scale irrigation project of Irba Giristu to undertake routine duties like water fee collection and scheme administration, but help to stabilize strong farmer- based irrigation scheme management institution like WUA and give other technical supports, importantly extension service.

5.3.4. Oromia Environmental Protection and Land Use Authority (EPLUA)

EPLUA is responsible to decide the use of the land and when the need arises, to redistributes the land to those who have the right to land holding on the basis of the existing Environmental Protection and rural land use regulation. As a result, it is responsible for the process or land redistribution from survey, recording and mapping of existing landholdings. In summary, farmer locations are important to allow full participation in the formation of the water users group, as well as the selection of particular farmers to occupy specific tasks in the operation of the scheme. Therefore, according to existing guideline and practices, EPLUA is responsible for the redistribution and reallocation of land in Irba Giristuirrigation command area. In principle, the irrigated farmland for each irrigation water user shall be strictly 0.25 ha. Therefore, any land to be cultivated by modern irrigation may cause the acquisition of proper share of the previous landholder, to be re-distributed.

5.3.5. The Cooperative Promotion Agency (CPA)

The responsibility of the establishment and development of Cooperatives as per the Regulation and recommendation of this report falls under the Cooperative Promotion Commission (CPA) and its subordinate offices at Zone and district level.

The Cooperatives should attain the required legal capacity for the purpose of getting access to services such as credit and marketing. Oromia Regional State Cooperative Agency is therefore, responsible for awareness creation, organizing, training and promotion of the cooperatives and follows up. Therefore, CPA support is very crucial in strengthening the administrative capacity of the cooperative, especially in resource management areas. The Agency supports irrigation cooperatives to get legal entities, to qualify for marketing and rural credit facility. The details are as follows:

- Promoting the cooperation, training of farmers and administrative committees of irrigation schemes cooperatives;
- Co-ordinate and facilitate the provision of agricultural input supplies through credit in collaboration with Agricultural and Natural Resource Protection Office.
- Provide audit service to ensure the safe guard of financial and property of same

- Ensuring the properties and assets of the associations are properly utilized
- Ascertains the establishment of cooperative societies policies and procedures are adhered to local conditions;
- Involving communities at all levels of project cycle in all rural development projects.
- Facilitate training and Capacity building

As a result, the responsibility, establishment and development of Irba Giristu Water Users Association and Irrigation Water Users Cooperatives as per the Regulation and recommendation of this report fall under the OIDA and Cooperative Promotion Commission (CPA) and their subordinate offices at Zonal and district level, respectively.

5.3.6 Agricultural and Natural Resource protection Bureau/Offices

Agricultural Bureau is responsible for the provision of agricultural extension services, coordination of input supplies, facilitation of credit service and marketing, selection and utilization of agricultural technologies, produce productive and adaptive crop varieties through research and strengthening the capacity of farmers through training. The fulfillments of these services are inevitable in achieving the irrigation development objectives. Some of the relevant responsibilities Agricultural Bureau are the following.

1) Give extension services and trainings for farmers, pastoralists, agro pastoral and investors to increase productivity of the agricultural sector, prepare favorable packages suitable for the climate condition , evaluate, cause to be implemented, lead it;

2) Facilitate, manage and follow up conditions through which agricultural inputs that assist to increase products and productivity be supplied and distributed at proper time and place with the required quantity and quality to farmers and pastoralists;

3) Cause agricultural products raw materials to be supplied in required quantity and quality for domestic and foreign market as well as factories with concerned body;

4) Work and lead activities which will enhance relationship among agricultural research, farmers, extension services and other beneficiaries order to make use of research outputs;

5) Cause farmers and pastoralists to produce market oriented products with required quality and standard; undertake studies with concerned bodies on how to get market for products and implement same;

6) Facilitate conditions to create appropriate system of agricultural production and input supply in order to make the regional agricultural development lead by market;
7) Organize, encourage, supervise, follow –up and train associations and irrigation beneficiaries;
8) Carries out different programs that government prepares to bring economic growth and food security;
9) Undertake, coordinate, support, follow-up development activities related with valley development;
10) Undertake, coordinate, support and follow-up development activities of soil and water development and conservation activities.

5.3.7. Trade and market development Bureau

Oromia Trade and Market Development Bureau is mandated for facilitating agricultural marketing improvement activities in the region. The Bureau through its zonal and woreda offices coordinate agricultural marketing improvement programs by establishing agricultural marketing councils with full involvement of major stakeholders and sectors involved in agricultural marketing activities.

The Bureau shall have the following duties and responsibilities:-

1) Undertake study on market need assessment, cause market participants and stakeholders to be aware of the same;
2) Undertake study and prepare market strategy on sustainable foreign and domestic product market opportunity which will make small, medium and large enterprises participate in the market;
3) Undertake study to identify opportunity and need on product which have wide and sustainable foreign market opportunity and effective work on its expansion;
4) Undertake study to identify the capacity and need to produce products that will contribute for the expansion of agro-industry, prepare expansion strategy for this product, facilitate conditions for its implementation;

5) Make strong and sustainable marketing network among the participants of market found at different level, producers, collectors, whole sellers and retailers, exporters, industries, consumers and so on, coordinate and follow –up;
6) Establish market information collection and dissemination center , establish modern information collection and dissemination system, strengthen it with the capacity of utilizing technology and human resource;
7) Undertake studies on market change related with product prices, present with the concerned bodies with proposed solution, implement up on approval, cause to be implemented, follow –up and control.

5.3.8. Woreda and Kebele Administrative Bodies

a) **Woreda Administration**

Woreda Administration office, with Kebele Administration (KA) in which the project is located, is responsible for the overall coordination and community mobilization. They are to liaise in land redistribution or transfer, acting as a witness for the agreement and help in enforcement of the By-law. The primary roles and functions of the woreda administration is to ensure security and maintain peace within its boundary, coordinate different key development activities between the responsible agencies and kebeles and support the activities and efforts of different sector offices and kebeles. Moreover, Wored administration share responsibilities for a range of functions in the Woreda under various line offices including administration, capacity building, peace and security, public organization, agricultural and rural development affairs, women's and youth affairs, information, education, health and finance and economic affairs.

b) Kebele Administrations: These are the grass-roots-level arm of the Government and report to the appropriate woreda executive committee. They also serve as vital bridges between peasants and the government. The kebeles **Administrations** have their own council and are comprised of kebele chairman, kebele administration, information and public organization affairs, peace and security, agricultural and rural development, education, health sector representatives and kebele court or traditional judiciary.

Each kebele has different administration units which makes easy to pass orders in hierarchy in arrangement of community work. The chain begins from Gare, development zone (zoni misoma), kebele, and Woreda. Community mobilization is more successful in slack period of farming activity which concedes with dry seasons. Therefore KAs will play a vital role in ensuring effective farmer's participation in the implementation and operation of the project.

5.3.9. Traditional Irrigation Schemes and Existing Irrigation Practices

Traditional irrigation schemes are generally range from micro scale to small scale and based on sprigs and diversion of small stream or river, which are constructed by farmers by utilizing mud, rocks, twigs or mixtures of these. The structures are generally washed away by seasonal floods and required maintenance or reconstruction frequently.

The beneficiaries of the schemes have organized themselves into associations led by elected leaders. Traditional irrigation schemes are operated and managed by these associations. These schemes are built, operated and maintained with the full participation of the beneficiaries, because of this, they appear to be more sustainable than those schemes built with either government or None Governmental Organization (NGO) support. Accordingly, the kebele has traditional irrigation scheme developed from Irba River two years back fully diverted and managed by irrigation beneficiaries.

5.4 Institutions and services

Different institutions are required that contribute service to accomplish the general goal set i.e. effective management and utilization of land and water resource to secure food supply and ultimately surplus for internal and external market. Small irrigation projects administration is set aside for institution formed by direct beneficiaries. But, this does not mean the contribution of other stakeholders is not important. Institutions and services need for this small scale irrigation is explained as follows.

5.4.1 Establishment of Water Users Associations (WUAs)

The IWUA Proclamation creates a specific legal basis for the establishment of Irrigation Water Users' Associations (IWUAs) as a particular type of legal entity for operation and management of irrigation and drainage systems. The pre-existing legal framework in Ethiopia (i.e. proclamations on cooperatives and associations) does not provide an appropriate legal basis for IWUA establishment. In accordance with their mandate, the tasks of IWUAs are strictly limited to management, operation and maintenance of an irrigation and drainage system and watershed management/protection. IWUAs are not permitted to undertake any other activities such as the procurementof agricultural inputs or marketing of the commodities produced within the irrigation systemthey manage.

5.4.2. Agricultural Extension and Related Services

In order to increase production per unit area and scale- up the technologies and good practices, farmers have to be supported by improved technologies and farming practices. Accordingly, important farm level services are discussed and presented in the following sub topics:

5.4.2.1 Irrigation practices improvement

Agricultural extension is one of the supporting services which mean that it is the transfer of newimproved technologies from the research centers to the users or farmers to make them beneficiary of the disseminated technologies. Extension is provided to enable the client to take informed decision. Of the three most important field activities of irrigation management - water distribution, system maintenance and irrigation extension are likely to presume greatest relative importance in the early stages of a project. For this reasons, the extension service need to be adequate in quantity as well as quality to properly respond to the need of the farmers at the level and time required. Therefore, sufficient number of extension workers, qualified in all aspects of irrigation, agronomy marketing and cooperatives has to be assigned to irrigation schemes as required.

5.4.2.2 Land Preparation (On-farm Land Development)

The introduction of suitable irrigation methods is an important point that is intimately related to the need for appropriate land development work (usually grading), and land preparation. In the project area where mixed farming is practiced, for land preparation, the farming communities use oxen plowing and hand hoeing for cultivation.

Frequently, in irrigation development project on-farm development work is left to the farmers' initiative and his own responsibility. However, on-farm development i.e., land preparation work is not attractive to the farmers, because it is usually expensive that require financial and technical assistance. Therefore, in order to make this operation attractive to farmers, it is imperative that some sizeable incentive should be offered if possible.

5.4.2.3 The Operation & Maintenance of Canal System

Since operation and maintenance of the tertiary and quaternary canal system i.e., micro level systems is the responsibility of the users of irrigation water, farmers must finance most of the irrigation improvement works themselves and, where possible, participate in actual execution of the work. In this regard technical assistance is desirable for this purpose from the support institutions. Therefore, under these conditions, the establishment of an irrigation assistance service as part of the government institution to be formed at micro irrigation systems level of Irba Giristu Irrigation Scheme appears logistically justified. However, the capacity of the scheme and canal system will be determined late after design is completed to decide on management options. In accordance with the general truth, the scheme is small to employ body other than farm-managed scheme level.

5.5. Institutions and institutional services

5.5.1 Governmental Institutions

The enhancement of development activities in the grass root levels can be determined by service providing governmental institutions and organizations. Institutional factors include various formal and informal institutions and organizations and services they provide. Accordingly,

factors facilitating and enhancing the rural development include services such as extension services, credit provision, and joint planning, marketing services and market information etc.

Government institutions constitute government bodies that have various roles and responsibilities of their own. Accordingly, government bodies that could play a role during the project implementation can be listed as administration office, agriculture and natural resource development office, cooperative promotion office, water resource mining and energy office, finance and economic development office, civil service and capacity building office, education office, health office, women's and child affairs office, rural roads authority, trade and market development and livestock development agency.

5.5.2 NGOs and their contribution to development in the area

There are many NGOs operating in the area but, mainly focused relief aid and environment rehabilitation and protection. It is basic truth that aid does not emancipate people from poverty. Of course, for a man to live and work, his immediate question (food) must be answered. However, NGOs should involve themselves on projects that ultimately solve problems like irrigation development that help to produce enough food than looking for donor agencies.

5.5.3 Gender Relation and General Situation of Women

Women who found in the study area, like all other rural women of the country, are performing all types of jobs starting from household chores to marketing of commodities. These activities include child rearing, cooking, fetching water and collecting of fuel wood and participating in various social obligations. Women contribute in irrigated agriculture both as farm laborer (family or hired) and as farm decision maker and land owners. Women's activities are limited around home caring for livestock and caring for the family. Particularly in irrigated vegetable production, women tend to lay a more active role like weeding, transplanting and harvesting in addition to their role in door task.

The overall irrigated land use system, will contribute to the increment of production and productivity of the HHs. Moreover, switching to crop production in general and specifically to irrigation crops, the majority of which are vegetables grown for sale, is likely to result in some

reorientation in the control of income between household members. Most studies show that vegetable growers are better off in terms of poverty situation implying that irrigation project planners should consider the crop mix in future irrigation development plans. This can provide equal opportunity for both men and women in terms of employment and access and control over resources. But, primary task to realize women's benefit calls for taking measures at farm level to enhance women participation in WUA, land rights, decision making and management.

5.6 Community Attitude and Social Acceptance of the Project

If the construction of the Small scale irrigation is not accepted and supported by the community, it is likely to suffer from misuse and will not be sustainable. Therefore, community consultation can help in clearing ambiguity and enables dispossessed farmers to have informed choice. During the socio-economic survey, the attitude of the different part of the society and local authorities towards the project idea, specifically, on possible problems and conflicts that may arise from the project implementation; their willingness to participate and contribute to the realization of the project was assessed.

5.6.1. Community attitude

As survey prevails, the farmers in the area have positive attitude towards the implementation of the project. The rationale behind the interest of the local farmers is the prevailing situation of farming in terms of rainfall distribution, soil fertility, pests etc. which has constrained crop and livestock production. Therefore, farmers believed that irrigation development could tackle some of the problems and thereby increase production, productivity and income. During community consolation, targeted beneficiaries were rejoiced and formed committees that coordinate community contributions to realize the project.The committees are working in agreement by scheduling water allocation for upstream and command area as well as for downstream livestock drinking purpose

5.6.2. Administration Bodies

The local authorities are positive on the project idea and enthusiastic to be involved and participate in its implementation. The authorities of Kebele administration and woreda are also expressed their commitment and willingness to co-ordinate all items related to the project

implementation. Furthermore, the authorities expressed their capability to handle any conflict that could arise in the process of project implementations. However, coordinating the activities of irrigation project construction requires strong commitment from the local administration and project authority.

Peasant Association Leaders-Leaders of the Irba Giristu have organized the community gathering in order to explain about the intended project. During the community consultation meeting, they have expressed their interest and willingness for the realization of the project by promising to contribute all needed.

District Administrative Officials- The administration council of Dalo Mana also considers the project as a sustainable development opportunity to reduce poverty among the rural communities. During the session of community consultation, they told the people to cooperate in the whole process of the project. They indicated that their need is also the same to that of the kebele administration and beneficiary community i.e. to see the implementation of the project.

Others:-During the community consultation meeting, members of the PA (those who wouldn't be beneficiaries) expressed their wish for the project and no negative attitude is heard or observed from them.

5.6.3. Community Commitment

5.6.3.1 Compensation

During the community consulting meeting, it was under stood and agreed by all not to demand compensation for the path of the canal and all other works done on this project. Beneficiaries showed their agreement on a meeting held to create awareness to participate wherever the work of the project demands for their support. In addition to this, they came to a common decision to:-

1. Use commonly the irrigable command area as a whole.
2. Share land as stated by law and /or the existing social norms.
3. Participate in soil and water conservation.
4. Contribute 10% of the project cost.

N.B. all the necessary documents are attached

During the consultation and awareness meeting the issue of scheme cost recovery, was raised to the beneficiaries. However, the opinion of the beneficiaries was that "it is not the right time for them to deicide and agrees ahead for the scheme cost recovery". However, later on after the realization of the project they may re-consider the issue.

5.6.3.2 Forms of Participation

One strategy for increasing the beneficiaries' stake in the scheme has been through their contribution of free labor and local materials to civil works and conservation activities. Accordingly, it was agreed that all unskilled labor required for construction would be met by free contribution from the users. Users would also contribute all naturally occurring materials required for construction.

5.6.3.3 Estimated Number of Beneficiaries

The total number of beneficiaries attended the community consultation meeting and put their signature were 100. However, by assuming the irrigable command area of 200 hectares and by assuming to allocate 0.25ha for one person a total number of 400 farmers would benefit from the project.

5.6.3.4 The Irrigation Water Users Committee

Water users organizations are vital associations organized to manage irrigation system and are seen to be the cornerstone of scheme ownership and sustainability. On 11/5 2011 E.C. meeting was held with the beneficiaries in the project area. The purpose of the meeting was to discuss about the design of pump irrigation project on Irba Rive as well as establishment of the scheme users committee. During community consultation, it was proved that management and organization structure has existed for traditional irrigation structure underway. Therefore, it was not fair and legal to ignore the already existing and functioning structure and establish new committee or change the existing one without reason. Forming new is rather duplication and cause role conflict among the members and thus members of the existing organizations were

nominated. Accordingly, five individuals doing the same activity were assigned as water committee. The selected persons were

1. Obbo Adam Aliyi ,chairman (2) Obbo Ahmad Hasan, Vice chairman (3) Abdusalam Shei Bakri, Secretary (4) Hasen Jibrril, member and Jibril Mohamad, a treasury. Summarized discussion points of the day with list of beneficiaries and selected committee is attached to this document.

5.6.3.5Supporting institutions' human resource situation

The viability of any irrigation schemes (systems) is determined by the strength of the organization involved in its coordination and management. This requires full cooperation and coordination of the institutions and the farmers combined with well trained and motivated staff. Without Sufficient number of adequately trained professional, skilled and motivated manpower they cannot deliver their mandate efficiently.

The number of extension agents assigned to each farmers association appears to be insufficient, because the farmers needing extension service program. In addition to the shortage, most of the extension agents have a general training in agriculture, which is appropriate for the variety of duties they have to perform in rain fed areas of the project, but have no special training in irrigation techniques and practices. In general, the project area supports institutions that participate in irrigation development implementation, have limited institutional and logistics capacity to carry out their duties efficiently and effectively. Hence, it is required to undertake institutional strengthening programs that include training and motivating of staffs to be involved in the implementation and operation phases. Thus, it is also necessary to capacitate the offices in terms of provision of operating rules and regulations, the required manpower, field vehicles and adequate budget.

5.6.3.6 Organizational structure and Manpower

Dalo Mana Irrigation Development Office is organized according to the new structure approved by OIDA. The woreda level structure has three basic teams namely, extension, study and design and agronomy and horticulture. The irrigation office has only 7 workers with educational

background of Small scale irrigation technicians, extension, horticulture and agronomy and crop protection to support farmers involved in irrigation production.

In Dalo Mana district following main rivers Yadot, Welmel and Shawe, there are individual irrigators that produce vegetables like cabbage, peppers, tomatoes and onions. As regard to production problem, disease and pest, lack of water pump and land allocation in irrigation project command area as per the proclamation of of Oromia Regional state was mentioned as a problem.

5.6.3.7 Coordination Problems

Irrigation project implementation at all stages or its phases requires the full involvement and participation of various institutions functioning at regional, zonal and Woreda level as well as kebele and beneficiary farmers. The full involvement and participation of all concerned institutions is decisive for the effective implementation of the project and sustainability of the irrigation scheme. This requires the full cooperation and coordination of all line offices and farmers combined with well -designed coordination mechanism. The existing experience shows that there is lack of coordination effort and mechanism overlapping and duplication of functions among the institutions involving in irrigation project implementations. Identifying responsibilities of each institution may avoid the risks of overlapping and duplication of efforts. However, the best result may be achieved through effective and appropriate coordination mechanism.

5.7 The Water Management, Operation and Maintenance Institutional Arrangement

5.7.1. General

Unlike separate management body required for macro irrigation schemes, the case of Irba Giristuis different in that the scale of the project is small to require such separate unit responsible for the maintenance, water distribution (at macro level) and management at the tertiary level each with its professionals. Therefore, IWUA can take over the responsibility and perform tasks as stated below.

5.7.2. Establishing of WUAs on structure (canal) management

This scheme as a traditional has its own WUA established based on proclamation and directives of cooperative low. The WUAs has its own committee toperform different activities as per organizational structure for WUA. However, certain adjustment and reformation is required that fit the scale of operation of the new project. This is true and obligatory since new members and land is encompassed in the project area after upgrading. The committee be established will be responsible for the operation and maintenance of irrigation scheme by making the farmers to participate on actual execution of the work. Structures liable to control and management of WUAs are water distribution, maintenance of main, secondary and tertiary canal, road, main drain and other infrastructures to ensure safety of the system, and sustained supply of water for irrigation. However, maintenance requirements beyond the capital and capacity of WUAs can be reported to a hierarchical body set at different level and enact on it at request. After rapport is made, higher maintenances that require much capital and should involveOIDA and its line departments is identified and accomplished as per the agreement made.

5.7.3. The consolidation of Irba Giristu Irrigation Scheme IWUAs and Cooperatives

5.7.3 1. General

It is not legal and just to form new IWUAs while the older existsas a self-governing none profit legal entities in accordance to the proclamation of Irrigation water users associations by the Ministry of Water resources that fits the scale of operation of the new project. Therefore, it is awful to form new unless the association is disassociated based on cooperative law and members' agreement. The scale of operation of the new project also does not permit existence of other IWUAs, but, a committee can be organized to act on secondary and tertiary canals management and administration. In spite of the fact that community is new for crop production in general and irrigated crops in particular, complex situation and intensive utilization of irrigation resource may not surge at one occasion, immediately after commence. To ease management and share responsibility, tertiary or on farm system composed of pipes and hydrants, the service area of

each structure should be demarcated and shared to this subordinate bodies under the general WUAs.

5.7.3.2 Principles and Steps re organizing the existing IWUAs

a) Principles

The area of WUA should not be too big or too small. In large scale irrigation schemes, a command area of 200 to 500 ha is considered quite suitable for WUA. Being this fact as it is, Irba Giristu project is expected to develop nearly 200 hectare. This is quite small to establish more than one WUA. If necessary, water users groups can be formed at outlet, tertiary, secondary levels responsible for the water management activities of their respective blocks, division and field level. Here it is important to note that the existing association is registered and legally certified except modifications needed to fit the new scale, boundary and extent.

b) Steps for reorganizing IWUA

The statement narrated under this sub tittle and the subsequent is to remind reorganizations needed based on new structures to be built depending on scaling up the project activities. Therefore, a person who deals or go through statement shall not consider forming new WUA ignoring the former. The statement is left to rehearse the procedure and requirements needed during reorganizing or adding responsible committee for the new structures come along upgrading plan.

a) Outlet level

The primary or the lowest level of organization will be at outlet level. All the beneficiaries, i.e. the farmers whose land falls under the command of quaternary canals will become members of the general assembly at outlet. The general assembly will elect executive committee comprising of five to seven members, which will manage the day-to-day affairs of the system. The general body will also elect two members to represent the outlet committee at the higher levels – one at tertiary canal and the other at secondary canal level.

b) Tertiary canal level

All the elected members from the different outlets in the command area of each tertiary canal of the scheme will form a general body of the tertiary level committee of the concerned scheme. The general body of the tertiary level committee will elect executive committee comprising of three to five members. This committee will manage the day-to-day work for the tertiary canal as outlet committee does for the quaternary canal. This will be responsible for resolving disputes out among farmers of different out lets.

c) Secondary canal level

A secondary canal level group, if any, will be constituted with elected members from all outlet level representatives. At these level water users associations (WUAs) will be formed. All the elected members from the different outlets in the command of the scheme will form a general body of water user association. The general body will elect an executive committee comprising of 5 to 7 members to manage the day-to-day affairs. This will be responsible for resolving disputes out among farmers of different tertiary canals in other words, water users' associations (WUAs) having responsibility for the operation and maintenance of the secondary canal irrigation systems level will be formed to operate within each secondary canal irrigation command area. Organizational structure for typical WUA is presented as below.

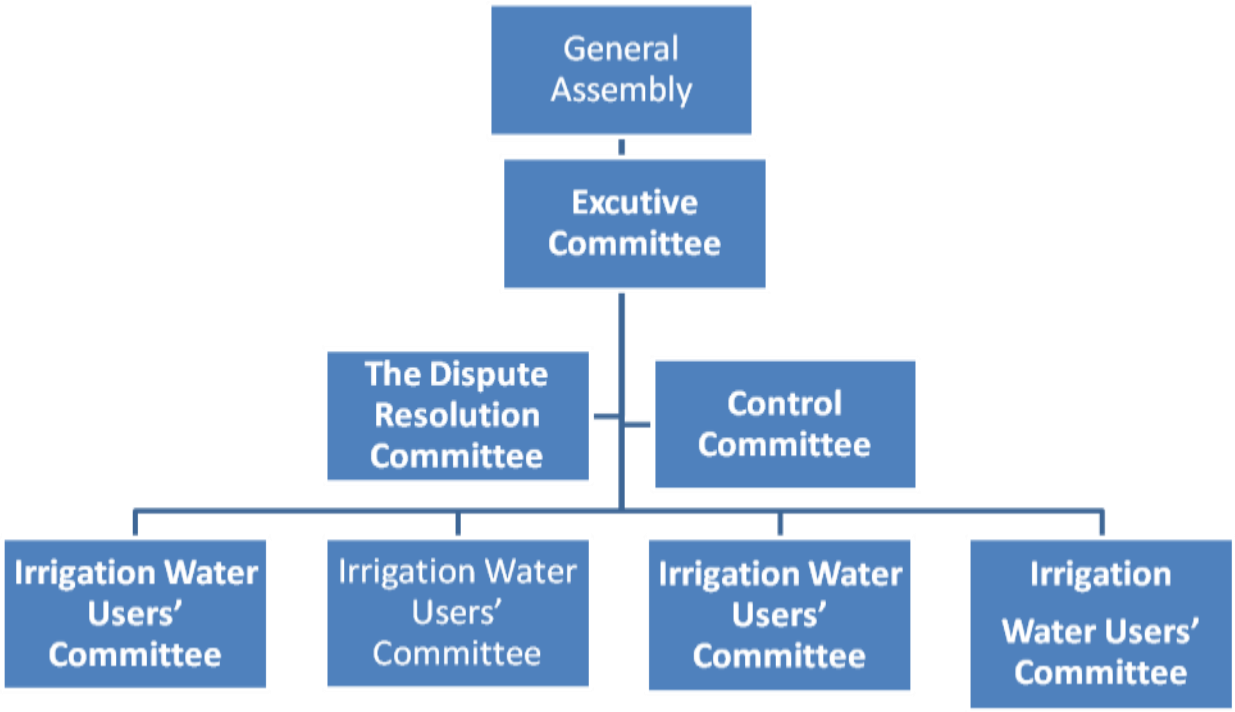

Figure 1: Proposed organizational structure for Irrigation Water User Association (IWUAs)

5.7.3.3 Responsibilities and Tasks of IWUAs

a) The tasks of IWUAs include the following

- Agreeing with the MSO the allocation of water (in time and quality) to the command area;
- Planning of the cropping calendar with farmers and irrigated agriculture advisers;
- To supervise on farm irrigation water delivery in order to ensure fairness and equity in water allocation to its members and to prevent water wastage;
- To maintain, improve and rehabilitate the tertiary and on farm irrigation systems within the service area and undertake re-construction and repair works;

- To establish internal regulations for irrigation water consumption and to collect fees and charges, from its members for the services provided;
- To take measures to combat erosion, pollution , salinization and flooding;
- To train its members in irrigation , techniques irrigated agriculture, water saving methods and new technology; and
- To collect water duties from individual farmers and ensuring that payments are made according to agreements between MSO and IWUAs that will cover O&M and management costs.

b). Responsibilities of WUA

The IWUA Proclamation creates a specific legal basis for the establishment of Irrigation Water Users' Associations (IWUAs) as a particular type of legal entity for operation and management of irrigation and drainage systems. The pre-existing legal framework in Ethiopia (i.e. proclamations on cooperatives and associations) does not provide an appropriate legal basis for IWUA establishment given that:

- IWUAs are public law organizations and their mandate is of a public interest nature;
- Membership is compulsory;
- IWUAs operate on a non-profit / non-commercial basis but they will nevertheless provide services to their members, namely the provision of irrigation water, on a paid basis;
- IWUAs are self-managed organizations governed by their members, but due to the public interest nature of their tasks are subject to some form of supervision by the government.
- IWUAs as public law organizations have a public interest mandate

The mandate of IWUAs is the provision of irrigation water to its members for agricultural purpose. It has a public interest nature because (1) IWUAs provide irrigation water to a largenumber of people and communities, and (2) they very often use public irrigation infrastructures,i.e. infrastructures built with public money and owned by the government.

5.7.4 Governing Bodies of IWUAs

IWUAs are self-managed organizations and governed by their members through the General Assembly. In addition to the General Assembly, each IWUA has a Management Committee and a Control Committee; the Dispute Resolution Committee is optional

a) General Assembly

The General Assembly is the sovereign, or main decision making body of each IWUA. The tasks of the General Assembly include:

- Setting the annual budget for the IWUA including the level of fees and charges payable by members
- Approving an annual work-plan and watering plan or schedule
- Approving the annual report on the annual accounts of the IWUA prepared by the management Committee
- Electing the executive officers and members of the committees of the IWUA
- Adopting binding operating rules necessary for the functioning of the IWUA (e.g. as to procedures for requesting, using and paying for water and operation and maintenance) and the level of fines payable if such rules are breached
- Amending the by-laws of the IWUA as needed

The tasks of General Assembly are essentially decision-making undertaken during General Assembly meetings. Key tasks in this respect are the election of the Management Committee, the

- General Assembly
- Management/executive committee
- Control Committee
- Employees
- Dispute Resolution Committee

In order to promote the collective responsibility of the Management Committee, the chairperson is elected by the Management Committee from among its members. The specific role of the chairperson is to formally represent the IWUA, to act as its spokesperson, to chair the meetings of the Management Committee and General Assembly, to call emergency meetings of the Management Committee and General Assembly, and, in accordance with resolutions of the Management Committee, to sign contracts and enter into other legal relationships on behalf of the IWUA.

The Management Committee members may also appoint its members to specific positions such as Secretary and Treasurer and more generally decide on specific roles and responsibilities for each of the Committee members. The decisions of the Management committee are made by consensus and consensus must be reached by vote with each member having one vote.

b) Control Committee

The Control Committee (3-5 persons) is elected by the General Assembly. Its tasks are to monitor the financial performance of the IWUA and to report back to General Assembly meetings. The purpose of the Control Committee is to create an internal financial control system for each IWUA such that IWUA members can be confident that the money they have paid is being used properly for management and operation and maintenance. An important task of the Control Committee in this respect is the presentation of annual report to the General Assembly concerning the manner in which the finances of the IWUA are managed.

c) Dispute Resolution Committee (optional)

Each IWUA can establish a 3-5 persons Dispute Resolution Committee to resolve disputes between IWUA members. The by-laws agreed upon by the IWUA General Assembly will specify the procedures to be followed by such a body. The establishment of a Dispute Resolution Committee is optional. In Ethiopia local community based dispute resolution mechanisms may play an equivalent role. It is important to stress that its mandate is restricted to the resolution of disputes between IWUA members and not disputes between members and the

IWUA itself as that would undermine the authority of both the Management Committee and the General Assembly.

5.7.5. Employees of IWUAs

As a legal organization IWUA can hire employees. They will be appointed by the Management Committee within the agreed budget of the IWUA and accountable to the Management Committee for their performance. IWUA employees may be IWUA members but, to avoid any possible conflict of interest, they may not be elected officers or users' groups' representatives. In practice some of these employees will be permanent, although they may not need to be employed full time. Others may be employed on a seasonal or temporary basis.

5.7.6 IWUA by-laws

Each IWUA must have its own by-laws. The by-laws constitute the identity of the IWUA in terms of name and address, service area, its organization and functions *vis* à vis external actors. The by-laws are also the primary source of internal rules and regulations that regulate the IWUA's activities. In other words, the by-laws are the constitutional rules of each IWUA. Like the constitution of a country by-laws should not be amended frequently in order to promote stability and should be amended only if strictly necessary.

5.7. 7 Supply of Water to IWUAs and Collection of Fees

Water pricing and recovery of the costs of irrigation investment, operation, and maintenance have been contentious (arguable) issues for many decades. If the fees collected do not cover the costs of Operation and Maintenance of an irrigation project, its sustainability, without continued government subsidies, may be at risk. As stated in water resource development policy and strategies, medium and large scale irrigation development schemes are to operate on full cost recovery principle; whereas small scale irrigation project to be implemented on cost sharing and towards stage by stage cost recovery transition.

Therefore, economic efficiency and fiscal sustainability demand that the capital costs of irrigation infrastructure should eventually be recovered from the users, in order to permit longer-

term replication of investments. Hence, investigation of procedures and methods of water fee collection will look into:

- The group's responsibility to allocate water amongst its members and to recover the charges; weather the experience is that users' groups are more effective collectors of fees or not;
- Assessment and identification of method that can be appropriate and encourages efficient water use such as charging by irrigation volume, by the size of the irrigated area or by a portion of the harvested crop.

5.7. 8 General

The basic point of conducting institutional analysis of a project is to establish a suitable organizational structure for a purpose that adequately manages the proposed task. In this regard, the starting point in determining the structure and shaping of any organization is identification of the intended activities and functions. This is derived from the analysis of project objective, components, outputs etc.

This report proposes the establishment of Irba Giristu irrigation water management unit that will have the overall management, operation and maintenance responsibility for the main structure of the scheme. In addition, the water users' association assigned by the unit to be established, under OIDA, will be responsible for the operation and maintenance of the system below the tertiary canal system.

Accordingly the joint management of irrigation scheme is an appropriate institutional arrangement for complex and large scale irrigation scheme, as one under consideration, where a long period of time required transferring the full responsibility to the farmer's organization. Detail of the proposal is presented as follows.

5.7.9. Location

The proposed project Irba Giristuirrigation project is located in Dalo Mana District Bale Zone of Oromia Regional State at a distance of about 555km from Finfine in the South- East direction.

According to the results of the socio-economic feasibility studies conducted in the project command areas, the total number of kebeles covered by this irrigation project is expected to be three rural kebeles, which would be covered by command area fully or partially by the study. In general, the geographic site of the project falls between UTM Co-ordinate _____ to_____ North, and_____ to _____East.

,

The boundaries of the project district (include:-

- From South Meda Walabu district
- From North, Goba North East Berbere district
- From East, Guradhamole
- west and south west, Harena Buluk district

The initially targeted area of the project that would be developed under the Irba Giristu Irrigation project was 200 hectares net command area of land in Dalo Mana District of Oromia Regional state, Bale Zone.

5,7. 10 Major Components of the Project

The three main components or constituents of pump Irrigation Project are electro mechanical part, motor house and canal systems. The two major components of project with their elements are presented as follows:

(i) **The canal system:** This is important component and it has the following elements:

- Primary Canal (Main Canal)
- Secondary Canal (Distributaries)
- Tertiary Canals (Minors)
- Quaternary Canal (Water Course)
- Field Canals (Field Channel)

5.7.11. General

The sustainability of irrigation schemes depends on the capability of the organizations responsible for operation and maintenance of the systems. The management, operation and maintenance of irrigation scheme require strong and effective organizations. Therefore, for

effective and efficient irrigation service provision, stakeholders involved in irrigation scheme management and operation should have an adequate number of specialized professionals at all levels of the service delivery and management. In this regard the major strategy for capacitating human resource knowledge and skills are pre-service and in-service training.

To enhance the implementing capacity of the government institutions to be involved in irrigation implementation, there is urgent and essential need for imparting training to all those who are involved in irrigation management systems to achieve the sustainability and good performance of irrigation scheme. These include the following:

(i) **Irrigation Engineers**: including other supporting staffs that are responsible for activities related to the planning, design, implementation and operation.

(ii) **Agricultural Experts**: including extension workers who are expected to provide assistances and guidance in the field of irrigated agricultural farming to the farmers.

(iii) **Irrigation Water Users**: These include the members and the officials of the Irrigation Water User Cooperative proposed to be formed for the responsibility of Irrigation infrastructure Management. They are the representatives of the real beneficiaries, i.e., farmers.

(iv) **Farmers:** They are the beneficiaries and the important stakeholders. They are those who are going to optimize the agricultural produces with limited land and water resources.

5.8. Strengthening Government Agencies and Staff Capacity

Training has a crucial importance in the proposed organizational structure of irrigation scheme management unit. The type of training that is urgently needed is training that is suited to the specific requirement of the job, for the organizational need. The types of training proposed are similar to job enhancement trainings to perform preventive maintenance, small and medium maintenance, engineering, agronomic and the like related to their specific job. Another example of training need can be enhanced raining programs geared to the new job definition and job description in the organization. This would give the opportunity to advance skills of managers on-the-job. In summary, training programs should have to be designed to achieve goals that meet particular institutional needs. Hence goals and objectives are crucial in determining the training environment and unless they are specified there are no means of measuring success.

The major project staffs that require skill upgrading training and experience transfer are those who are responsible for the overall management of the project, operation staff and maintenance staff. It may be noted that while training for irrigation engineers are required to concentrate on the:

- Engineering aspect of irrigation;
- Crop, soil land characteristics;
- Crop water requirement;
- Irrigation scheduling ;
- Water management and methods of irrigation.

These items are common to all groups as they are very basic, especially in any scale of irrigation farming (small, medium, large scale).

5.9. Developing Farmers' Capacities

This will include training and educating local representatives in the management, operation, and maintenance of irrigation systems, proper water usage, and other related matters. For capacitating the community, the training coordinator, in coordination with other stakeholders, will organize on–the– job trainings, workshops, seminars, and visits. Building local people's capacity for operation and management is given a high priority because it is one of the activities most likely to enhance sustainability and effectiveness of irrigation systems.

Training methodologies should focus on learning by doing. Therefore, on the job training and participating local representatives in the operation and maintenance of the scheme before transferring the scheme to IWUAs is highly recommended. The training should be in the local language, appropriate for different age, gender and class groups and the prevailing level of literacy. The training areas to be provided include, but not limited to:

- Community management structures and their roles (management boards, general assembly, water service providers)
- Constitution and bye-laws for governing the use of irrigation systems
- Members' rights

- Participatory decision-making
- Accountability of leaders
- Transparency in financial management
- Setting development goals and objectives
- Planning and budgeting skills including setting of water charges
- Leadership/management skills
- Monitoring and evaluation mechanisms
- Record keeping and accounting procedure
- Financial management skills
- Community conflict resolution skills and mechanisms
- Negotiation skills, contract with private sectors, with suppliers of inputs, buyers of their produces and with extension agents
- Procurement and marketing strategies

5.10. Duties and Responsibilities of Stakeholders

Like any other development interventions, various parties are expected to be involved in the irrigation projects from the design stage up to the full operation of the schemes. However, the primary responsibility of implementation and operation of irrigation projects will on institutions working at Regional, Zonal, Woreda and kebele levels as well as communities targeted to be served. They will form multi-disciplinary Woreda irrigation Teams for implementation as The following Table illustrates institutions to be involved and their roles and responsibilities at Zonal/ woreda levels.

Matrix Table1: Summaries of Roles of Stakeholders and Institutions (at their different levels)

No	Name of the institutions	Their Responsibilities
1	Political Administration Offices at different level	§ Coordination and supervision of line offices,
		§ Farmers Mobilization & Law enforcement
		§ Securing the necessary budget/fund for the O&M support.
2	Zone / **Woreda** Trade and market development Offices	§ Coordinate agricultural marketing improvement programs;
		§ Establish agricultural marketing councils
		§ Undertake studies on market change related with product prices
		§ Information collection and dissemination
3	**Administration** with Kebele Administration	§ Coordination and community mobilization enforcement of the by-law.
		§ Ensure security and maintain peace within its boundary,
		§ Coordinate different key development activities
		§ Support the activities and efforts of different sector offices
4	Cooperative promotion commission Office	§ Establishment and development of cooperatives as per the regulation
		§ Services such as credit and marketing
		§ Awareness creation, organizing, training and promotion of the cooperatives and follows up.
		§ Supports irrigation cooperatives
		§ Provision of agricultural input supplies through credit in collaboration with Agricultural and natural resource protection Office
5	Oromia Irrigation Development Authority	§ coordination and close supervision of the project implementation ;
		§ transfer of the scheme to the beneficiaries and
		§ Coordination of the stake holders during irrigation project implementation stage; § Training of irrigation water user farmers on water management, i.e., Operation & maintenance ;
		§ Enforcement of water related regulations;
		· Land distribution and registration in collaboration with Kebele Administration
		§ Back up operation and maintenance of irrigation scheme intensive activities; backstop services like follow up and guidance
		Primarily responsible for monitoring and evaluation; including facilitation of participators M&E

No	Name of the institutions	Their Responsibilities
6	Zone/ Woreda Agricultural and Natural Resource protection /Offices	·Provide agricultural extension services, coordination of input supplies, facilitation of credit service and marketing, selection and utilization of agricultural technologies, and strengthening the capacity of farmers
7	Trade and market development Offices	§ Coordinate agricultural marketing improvement programs ;
		§ Establishing agricultural marketing councils with full involvement of major stakeholders and sectors involved in agricultural marketing activities
		§ Undertake studies on market change related with product prices
		§ Information collection and dissemination
8	Cooperative Promotion Commission	▪ Establishment and development of Cooperatives as per the Regulation ▪ Services such as credit and marketing ▪ Awareness creation, organizing, training and promotion of the cooperatives and follows up. ▪ Supports irrigation cooperatives ▪ Provision of agricultural input supplies through credit in collaboration with Agricultural and natural resource protection Office
9	Zone Woreda Women's' Desk	Assists in monitoring gender balance within the district RSWW program
10	Religious Institutions	Assists in coordinating communities affairs, especially concerning religious matters
11	Water Users and Sanitation Committee	▪ Represent the water user community in all matters; facilitate and coordinate all irrigation management related activities at the levels of kebeles; ▪ Elect members to the general Assembly.
12	The Water Users Committee & Individuals	Coordinate water users; protect scheme; established (WUA) Individual(as for operation and maintenance) will be recruited among them

5.11. Establishment of Coordination Committee

Irrigation project implementation at all stages or its phases requires the full involvement and participation of various institutions functioning at federal level steering committee, Regional, Zonal and Woreda levels and the farmers. This requires the full cooperation and coordination of all line offices and farmers combined with well designed coordination mechanism. The members of the coordinating committee will be represented from the following Institutions.

a) Woreda Administration Office
b) Woreda Irrigation Development Authority Office
c) Woreda Agriculture and Natural Resource Office
d) Woreda Cooperation Promotion Commission Office
e) Kebele Administration; and
f) Irrigation Cooperative (LDIC)

The Coordinating committee will be responsible for the overall coordination, guidance and supervision of the project implementation.

Major functions and responsibilities of the committee are as follows;

- Supervise the overall irrigation of the Scheme O&M activities ;
- Coordinate the activities of institutions involving in implementation
- Review the annual technical support plan of the institutions and plan and budget of the scheme;
- Ensure that the IWUA supporting institutions work in line with the plan and procedures laid for the scheme;
- Ensure the coordination activities with government institutions and private sector participation;
- Resolve any dispute arises among the members of IWUAs and beyond the capacity of the controlling committee.

8. MONITORING AND EVALUATION

Information provided by routine monitoring are important to timey assesses strengths and weakness, document challenges and lessons learn which can usefully feedback in to future evaluation of impacts and ultimately influence decision-making. Progress monitoring provides evidences on accomplishment of the core activities planned under each activity which is scrutinized by assigning milestones and implementation timelines. Outcome monitoring is also important to track the expected changes such as increased capacity of the government sectors, communities' access to water increased community awareness, and are measured by the preset qualitative and quantitative indicators.

Therefore, there is a requirement to assess the desired outcome and results of the planned inputs, outputs and impacts of the project objectives on the communities/populations. The accountability and results matrix at the end of the document outlines the core results and their indicators as well as the sectors accountable and the measuring period for these indicators. The matrix hence, serves as a monitoring and evaluation framework for all irrigation scheme management.

Table 1: Monitoring and Evaluation matrix (Performance indicators)

No	objectives	Out put	Outcome indicators	Means of verification
1	Strengthen the institutional, management and technical capacity of the irrigation sector at all levels to plan, implement and monitor the scheme.	Irrigation sector at all level capacitated and equipped with necessary logistics and budgeted	Proportion of Irrigation sector sector staff skilled to plan, implement and monitor scheme management and operation of projects	Sectors capacities need assessment.
2	Strengthen the institutional, management and technical capacity of ***Irrigation Water User(IWU)***	Irrigation Water User Associations managing effectively irrigation and drainage infrastructures	*Functional IWUA* *registration by supervising body* (ii) its own bylaws 30 per cent women members	Sectors and community organizational and capacity need assessment report
3	To provided sustainable irrigation and drainage services	Beneficiaries provided with sustainable irrigation and drainage services disaggregated by new improved systems	Area (Hectare) provided with improved irrigation and drainage services disaggregated	Sectors and community o organizational and capacity need assessment report
4	Strengthen collaboration between sectors/actors with responsibilities for water management through coordination mechanism at all levels	Public sector agencies with relevant roles consult and collaborate in water management and other issues	Number of inter-sectoral meetings	reports and minutes of the scheme management units and sector steering committee meeting
5	Strengthen monitoring and evaluation of scheme management through routine management information system.	Activities reported by scheme management units and sectors through captured data.	scheme management and operation is considered in the communicable activities	annual Woreda irrigation plans, ,records and reports

8.1. Project Implementation and Coordination

Project strategy of working through pertinent government structure is considered to be cost effective and contributes to the efficient utilization of the available resources. Overall responsibility for project implementation is vested in OIDA. Besides, all institutions responsible for irrigation, agricultural and marketing organizations have the mandate, responsibility and authority to carry out project activities. The stakeholders of the new scheme include scheme beneficiaries, woreda administration, office of OIDA, agriculture department/office and cooperative promotion agency. Major points to be considered are:-

- Develop project-implementing unit that incorporate the concerned organizations and beneficiaries.
- Draw up an organizational set up required to manage the project
- Required man power
- Required qualification
- Required local office
- Determine place for recruiting and training the required personnel.
- Identify training requirement, indicate the time and duration of training.
- Preparing a guideline that shows the required organizational arrangement after implementation of the project.

The stakeholders of the new scheme include scheme beneficiaries, woreda administration, office of water resource, energy and mining branch office, and agriculture department/office cooperative promotion agency. The total would be beneficiaries of the scheme are 400 in number assuming the allocation of 0.25 ha of plot per individual.

8.2. Monitoring and Evaluation

It can be argued that if performance of irrigated agriculture project, in achieving their objectives are to improve significantly, it is essential that Monitoring and Evaluation (M&E) to become an integral component of management process. This will help to determine their achieving levels and what adjustment and corrective measures are necessary in order to ensure future benefit accrue to the target group.

For the implementation of irrigation projects, it is not enough to analyze the various technical, socio-economic and environmental aspects. But it is essential that both institutional arrangements and constraints be reviewed as well. Therefore, Oromia Water, mines and Energy Bureau, zone and Woreda offices and other concerned government offices will be monitor implementation of the project. External/independent monitoring & evaluation will be carried out by the will be appointed consultant. To this end, it is advisable to device means of continuous information flow on monthly bases that enables to take corrective measures timely.

9.3 Monitoring plan of action

Preparation of a detailed monitoring plan needs to monitor the implementation of mitigation measures and to evaluate their performance. The plan should specify the type of monitoring or indicators with institution and expertise, costs and other requirements like raining needed for the implementation of the monitoring plan. As is stated elsewhere, since the principal objective of SSI is to improve the reliability of food security through increasing household income by establishing sustainable production system, monitoring plan and its implementation is to clearly see whether the proposed action is effectively materialized and if not suggest possible corrective measure (see attached performance indicators in the Appendix).

9. FINANCIAL REQUIREMENT

9.1. Running costs

The Dalo Mana river diversion irrigation project will involve different kinds of investment and operational costs that will be incurred throughout the implementation and operational phases. It will involve different kinds of investment and operational costs that will be incurred throughout the implementation and operational phases. The costs are categorized under annual operational and training and equipment costs. These are one of the basic parameters that serve for the estimation of the viability of the organization and management component of the project.

Table 2: Summary of Estimated costs for the operational and manage the scheme

S.No	Type of costs	Estimated Amount in Birr	Remark
1	Capacity building	2062000	
2	Annual office expense	598320	
3	Project office equipments and furniture for implementation	569,500	
	Total	**3,229,820**	

Implantation of irrigation projects requires running costs of administration, personnel, equipments, services etc. Accordingly, total investment budget for Capacity building and Project office for implementation is estimated to be Birr 3,229,820. Accordingly detail costs for proposed and envisaged services to operate and manage the project are presented in Annex

10 Bibliography

Devotha B. Mosha *et.al* (2016). PERFORMANCE OF WATER MANAGEMENT INSTITUTIONS IN FARMERMANAGED IRRIGATION SCHEMES IN IRINGA RURAL AND KILOMBERO. *International Journal of Asian Social Science, 2016, 6(8): 430-445*.

Council of Ministers Regulation No 135/2007 Payment of Compensation for Property Situated on Landholdings Expropriated for Public Purposes. ADDIS ABABA- 18th May, 2007

FDRE (Federal Democratic Republic Of Ethiopia), Ministry of Water Irrigation and Energy, GTPII, 2007

Ministry of Water Resource, (2001), Ethiopian Water Sector Policy,

Ministry of Water Resource, (2001) Ethiopian Water Sector Strategy

Oromia Rural Land Use and Administration (2007), Proclamation No. 130/ 2007. Proclamation to amend the proclamation No. 56/2002, 70/2003, 103/2005

Proclamation No. 147/1998-Cooperative Societies

.

Bibliography

Devotha B. Mosha *Et.Al.* (2016). Performance of Water Management Institutions in Farmermanaged Irrigation Schemes in Iringa Rural And Kilombero. *International Journal Of Asian Social Science, 2016, 6(8): 430-445*.

Equation 1 **Appendix Table 1: Annual office utilities costs**

S.N	Type of expense	Monthly expense	Total yearly cost in Birr	Remark
1	Rent expense	4000	48000	
2	supplies	2000	24000	
3	Electricity expense	100	1200	
4	Water expense	20	240	
5	Telephone expense	500	6000	
6	Fuel, oil expense	10,000	120000	
	Total operating expenses firs year		199440	199440*3=598320

Equation 2 Appendix Table 2: Facilities and Equipment for Operation office

Category of facilities	List of Facilities and equipment	Proposed Number	Unit Price	Total Price
	Motorcycles for Agronomists	2	80000	160000
Equipments	Motorcycles for operation	2	80000	160000
	Bicycles for DAs	3	10000	30000
	normal tables	8	1500	12000
	semi-executive chair	4	2000	8000
Furniture	guest chair	16	1000	16000
	secretarial desk	1	1500	1500
	secretarial chair	1	2000	2000
	drawer filing cabinet	4	2500	10000
Equipments	desktop Pc with printer	4	30000	120000
	photocopy machine	1	50000	50000
Total				**569,500**

Equation 3 Appendix Table 3: Annex c estimated Five years training and capacity building budge

S.No	Activities	Frequency	Total 3Year Cost	Contraction		
				yr1	Yr2	yr3
1	Formation of Irrigation Water Users Associations					
	Support establishment and strengthening of IWUAs	Implementation phase	150,000	100,000	50,000	-
	Legal registration of IWUAs	Implementation phase	90,000	30,000	30,000	30,000
	Preparation of training material for IWUAs	Implementation phase	75,000	-	25,000	25,000
	Promote community awareness on communal resource uses	Every two to three years period	12,000	-	40,000	40,000
2	Prepare training plan based on need assessment findings					
	Training of experts at all levels	Operation phase all the year round.	90,000	-	30,000	30,000
	Training of IWUAs committee members	Operation phase all the year round.	300,000	-	150,000	150,000
	Training of farmers	Operation phase all the year round.	300,000	-	150,000	150,000
3	Introduction of Improved Irrigated Agriculture Advisory/Extension (Integrated Crop and Water Management) Services					
	Establishing and conducting technology demonstrations	Operation phase all the year round.	300,000	-	150,000	150,000
	Irrigation Performance Assessment		60,000	-	30,000	2,400
	Improper farming practices & Soil erosion Avoidance	Irrigation operation phase all the year round	60,000	-	30,000	30,000
	Protection of Canal siltation	operation phase all the year round.	300,000	-	150,000	150,000
	Train water committee on efficient irrigation water use	Irrigation operation phase all the year round	75,000	-	25,000	25,000
	Canals lining including fencing in residences and	Operation phase	150,000	-	100,000	50,000

S.No	Activities	Frequency	Total 3Year Cost	Contraction		
				yr1	Yr2	yr3
	settlements					
	awareness on risk management and protection	Operation phase	100,000	-	50,000	50,000
	Total		**2,062,000**			

Equation 4 Appendix Table 4: Project Operation Time table for three years program Span

No	Project Years	PY-1				PY-2				PY-3			
	Description	1	2	3	4	1	2	3	4	1	2	3	4
1	**Formation of Irrigation Water Users Associations**												
2	**Support establishment and strengthening of IWUAs**												
3	**Legal registration of IWUAs**												
4	**Preparation of training material for IWUAs**												
5	**Promote community awareness on communal resource uses**												
6	**Training of IWUAs committee members** **Training of experts at all levels**												
7	Introduction of Improved Irrigated Agriculture Advisory/Extension (Integrated Crop and Water Management) Services and (Training of farmers **technology demonstrations(**												
8	Irrigation Performance Assessment and settlements Awareness on risk management and protection												