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Oromia Irrigation Development Authority (OIDA)

The Study

for

Meki Irrigation and Rural Development Project

in

Oromia Region, Ethiopia

Guideline for WUA Establishment

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Nippon Koei Co., Ltd.

Guideline for WUA Establishment

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CHAPTER 1 INTRODUCTION

1.1 General

1.1.1 Purpose

- The GUIDELINE describes process of establishment and management of a water users' association (WUA).

1.1.2 Applicability of the Guideline

- The GUIDELINE is applied for community-based small-scale pump irrigation projects in the Meki area, Dugda Bora Wareda, East Showa Zone. The command area of the scheme is 5 ha with 20 members. It is noted that contents of the GUIDELINE can be applied similar schemes in other area.

1.1.3 Users of the Guideline

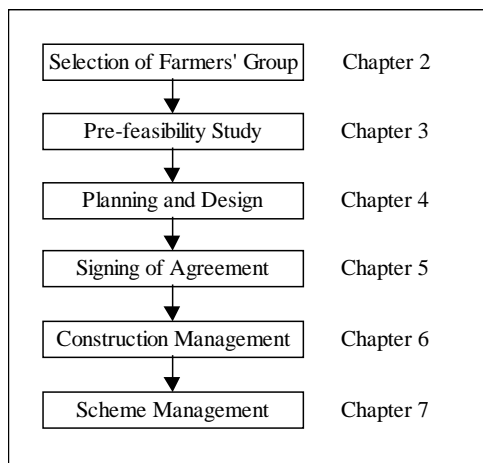
- Users for the GUIDELINE are social workers being engaged in community mobilisation of irrigation development projects.

1.2 Concept of the Project

- The GUIDELINE indicates the process in line with the following concepts, learning the past experience:
 - ① Concepts to achieve sustainable irrigation development, focusing on the following aspects.
 - Fair distribution of land and water resource among farmers
 - Fund formation by farmers
 - Saving for replacement of a pump
 - ② Awareness creation to let farmers understand the above concept and difficulty of irrigated farming practice
 - ③ Discussion of responsibilities of OIDA and farmers, and consequent signing an agreement with farmers.
 - ④ Enhanced farmers' participatory approach in planning and construction period
 - ⑤ Strengthening WUA support for scheme management
 - ⑥ Strengthening monitoring and evaluation system by OIDA

1.3 Work Flow of the Project

- The GUIDELINE describes according to the work procedure of the project as show below.



1.4 OIDA Team for the Project

- The OIDA team for the project should be organised by the following members:

	Office	Designation	Selection of group	Pre-F/S	Planning & design	Construction	Scheme management
1.	Branch office	Design Engineer		⊙	⊙		
2.		Social Worker		○		○	⊙
3.		Construction Engineer				⊙	
4.		Surveyor			○		
5.		Draftsmen			○		
6.		Mechanic				○	
7.	Wareda office	Wareda head	⊙	○	○	○	○
8.		Experts	○	○	○	○	○

⊙: Responsible person

○: Person in charge

- In addition to the above personnel, a manager of the branch office, a design engineer in planning and design department of the head office, and a social worker in community mobilisation department of the head office, will provide necessary supports and guidance.

CHAPTER 2 SELECTION OF FARMERS' GROUP

2.1 General

- Selection of Farmers' groups for the Project will be conducted in the following procedure:
 - Announcement of the Project
 - Application by Farmers
 - Scrutiny by OIDA
 - Preliminary field survey
 - Screening of applicants

2.2 Announcement of Project

- Announcement of the Project should be noticed on notice board in Wareda Office, indicating conditions for the application shown in Attachment 2-1.

2.3 Application by Farmers' Groups

- Applicants for the project shall visit the Wareda Office to receive the application form.
- The applicants shall submit the form to the Wareda Office after getting approval by PA Chairman.
- The application with its covering letter is shown in Attachment 2-2.
- The Wareda Office receive the application after scrutiny described in the Section 2.4.

2.4 Scrutiny by OIDA

- An application should be scrutinised whether some data and information are missing.
- Name of the representative for each applicant should be confirmed.

2.5 Preliminary Field Survey

- The staff in the Wareda Office shall conduct preliminary field survey for selection of the farmers' group, with check sheet shown in Attachment 2-3.
- Points for the field survey are as follows:
 - Location of pump station
 - Topography of command area
 - Approximate length of irrigation canal
 - Soil
 - Farmers' experience for irrigation
 - Sketch of proposed scheme

2.6 Screening of Farmers' Groups

- Based on the results of field survey, staff of Wareda Office shall conduct screening of the farmers' groups according to the following criteria:

- 1 The size of the command area is not more than 5 ha, with some members
- 2 The location of the pump station and command area are not located in frequent flood-affected area.
- 3 Soil in the command area is not sandy.
- 4 Design head for the pump is not more than 10 m.
- 5 Length of the main canal is not more than 500 m.
- 6 The proposed canal does need nor high filling or deep excavation.
- 7 The proposed canal does not need the such related structures, as siphon, aqueduct.

2.7 Report of Result

- Result of the screening shall be noticed to the applicants.
- Original of the check sheet and the application form shall be kept in the Wareda Office.
- Copies of them shall be sent to the Branch Office.

2.8 Action for Next Step

- The Branch office shall co-ordinate schedule for dispatching an design engineer and a social worker in the pre-feasibility study.

Responsibilities of OIDA and the group in the scheme

- OIDA is responsible for
 - Procurement and installation of a small pump of 10 HP for irrigation, which enable them to feed 5 ha of land.
 - Planning and design of irrigation facilities, including mapping
 - Construction of pump house
 - Assistance and guidance for construction of irrigation canal
 - Construction of related structures of irrigation canal, if needed.
 - Provision of initial training of the pump operation.
 - Provision of guidance for WUA establishment and management, such as water management, financial management, farming, marketing.
 - Monitoring of performance of irrigation scheme

- WUA are responsible for:
 - Selection of leader, secretary, accountant, and auditor
 - Selection of a pump operator
 - Coordination of irrigation farming size of 0.25 ha per household
 - Conducting land consolidation and exchange among farmers so that every member can make benefit with irrigated farming
 - Construction of irrigation canals under guidance of OIDA
 - Operation and maintenance of the scheme, such as procurement and management of fuel, repair and maintenance of the pump, water distribution, maintenance of canals.
 - Opening bank account in the name of WUA
 - Saving money for depreciation cost of the pump
 - Keeping account records of WUA, income and expenditure
 - Keeping records of fuel procurement and consumption
 - Opening the account records to the member
 - Procurement of agricultural input, like seed, fertilizer, pesticide, and marketing of agricultural products
 - Reporting regularly to OIDA
 - Preparation of by-law of WUA

list of the farmers of ○○peasant

Association and their irrigable land size

No.	Name	Sex (M/F)	Land Size (ha)	H.H Size		Signature
				Male	Female	
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						

Guyyaa 13/10/93

Godina Shawaa bahaa Aanaa Dugdaa booraatti

Waa'isira misooma Jallesii

Aanaa Dugdaa booraattiif

Maqii

Iyyatoonni:- Miseensota ganda Aonnaan bulaa Baqalee -

- Girisaa kan taane: 1-Obboo

2-Obboo

3-Obboo

4-Obboo

5-Obboo

6-Obboo

7-Obboo

8-Obboo

9-Obboo

10-Addee

Iyyannus maasan keenya laga Maqii bira kan jiru fi kan wal gabate yoo ta'u illee dhabiiinsa farshii (motora bishaanii) kan ka'e lafa teenya misoomsinee, jireenya keenya fayye -
 - fannee hiisoollee teenya kan ittis guddifannu dhabiiinsa farshii (motora bishaanii) irraan kan ka'e abbaa qabeenyaa kan motora (farshii) qabu irra qixxee kennuuf yoo dirqamne illee amma qaruu yaada, qalbee fi kanyoo tokkoon gurmoofnee jerra, isinis rakkina keenya kana gadi faqeenyan nuu itaalhani qaana dhimmi ilaalunis nuu geessani furmaata akka nuu kennitan kabajaan iyyanna.

ገጽ 12-102 ገጽ 1

Sp. Sambatu
Boonaa

D.C. 16 2/4

Maqaa Waa'isira baati 13/10/93

Luka Broba-ndu

R.K. 1/2/4

R.K. 1/2/4

4/7 7/11/93

Sp. Dabbea Darsaa

Sp. 1/2/4

Sheet for Preliminary Survey

a. General Information

- Name of PA

- Location

- Leader (Name, Education)

- Name of Water Resource (Distance from Meki River or Ziway Lake)

- Numbers of Applicants (Male and Female)

- Total area of cultivating land (acre)

- Soil Condition in the Command Area

- Topography in the Command Area

b. History of the Group

- Experience of Irrigation Farming

c. Present condition of agriculture

- Present crops under cultivation

- Proposed crops under irrigation

d. Information of Irrigation

- Question if the some persons have experience for irrigation

e. Idea of irrigation scheme, if the communities have it

(Let them draw the proposed layout including the following information)

- Location of pump
- Layout of channels
- Houses
- Farm lands

Proposed Layout of the scheme

- Total Design Head of the pump

- Length of Proposed Main Canal

- Does the main canal need the such structure as aqueduct, siphon?

CHAPTER 3 PRE-FEASIBILITY STUDY

3.1 General

- Pre-feasibility study of the project will be conducted in the following procedure
 - Confirmation of Application Form
 - Field Investigation and Interview
 - Meeting with farmers
 - Provision of information for management of irrigation schemes
 - Consensus among beneficiaries

3.2 Staff and Organisation

- All the activities presented in this chapter shall be carried out by design engineers, social workers, and staff in the Wareda Office.

3.3 Field Investigation and Interview

3.3.1 Confirmation of Applicants

- Names of applicants shall be confirmed again based on the application form.
- It is noted the membership of WUA is entitled for sons of the members over 18 years old as well as the head of household if the members of WUA approve that the children have membership. Thus, it is necessary to check the membership by not only the authorised application but also interview of the WUA member.

3.3.2 Collection of Data and Information

- Applicants' experience in irrigation, if any, should be described on the Attachment 3-1
- Especially, the relationship between private pump owner and the WUA members will be interviewed if they experience such type of cultivation. This includes share of land, farm inputs, and production.
- The format should be brown up and attached on a big board in order to deepen the applicants' awareness.
- In order to evaluate capacity to pay for the scheme management, data of each applicant, such as cultivated area per growing crop as well as number of cattle, shall be collected.
- Farmers' preference for crops cultivated under irrigation shall be clarified.

3.3.3 Resources Mapping

- The applicants prepare mapping of a community resource. The OIDA Team assists the applicants draw it.

- A map should include:
 - Farm land of individual farmer with border,
 - Roads,
 - Proposed location of pump installation,
 - Proposed layout of irrigation canals,

3.3.4 Confirmation of application

- The OIDA Team requests representative of farmers to outline the applied scheme based on the resource map prepared previously.

3.3.5 Field Transect Walk

- The OIDA staff shall conduct field transect walk with applicants.
- They shall confirm locations of proposed pump station and main canal, boundary of command area, present land use.
- Soil condition and topography shall be also surveyed so as to study validity of irrigation plan.

3.4 Points for Awareness Creation

Needs for awareness creation

An emphasis shall be put on an awareness creation to farmers is, so that they have knowledge of responsibility and management of WUA as well as general information of irrigation farming. It is expected that OIDA also get farmers' intention for proposed schemes so as to realize sustainable irrigation development.

To achieve proper resource management and sustainable irrigated agriculture, technical and financial constraints for the project implementation should be informed to farmers. This project adopts an awareness creation procedure, through presenting the condition for supplying pump equipment.

The social workers of OIDA should let farmers understand risk accompanied with an irrigated agriculture. Thus, they are expected to enhance knowledge for crop budget and marketing for major irrigated crops.

Group fund formation

Group fund formation by WUA shall be promoted for securing the funds for the initial cultivation. In stead of 10% labour contribution in construction cost, wages for the construction works will be paid to the farmers.

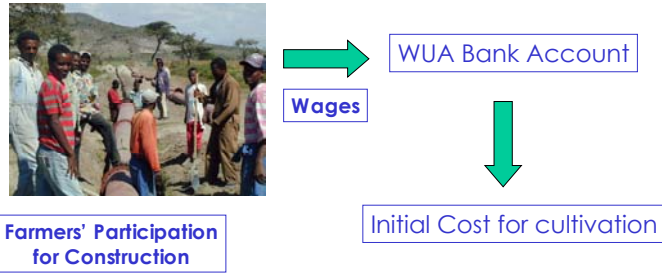


Figure 5.3 Group Fund Formation of WUA

The wages will be saved into a bank account of WUA and they will be utilised as the initial cost for cultivation. OIDA will help WUA to open the bank account.

Saving for replacement of pump

OIDA is requested to instruct WUA members to save money annually for replacement of a pump considering a life of the pump.

Land consolidation

Land consolidation of irrigated land near water resource shall be facilitated in order to enhance irrigation performance. This measure could reduce canal length and water seepage, and consequent fuel cost, improving irrigation efficiency and performance of the pump.

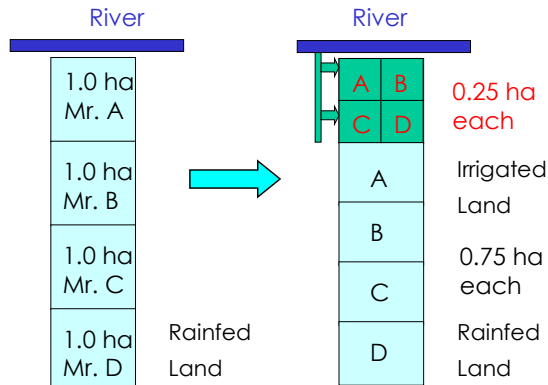


Figure 5.4 Consolidation and Exchange of Lands

It is essential to exchange of farmland among the WUA members to achieve the effect of land consolidation, discussing thoroughly among the members.

Support to WUA to be self-help organisation

From planning stage, OIDA will be requested to support WUA continuously so that the WUA become a self-help organisation. This will include mechanism of decision-making, operation and maintenance of the scheme facilities, water management, and financial management.

Strengthening of monitoring & evaluation by OIDA

Function of OIDA for monitoring and evaluation of the schemes shall be strengthened, determining their method, such as frequency, monitoring index, and so

on.

3.5 Presentation of Responsibilities of OIDA and Farmers' Group

- The responsibility of OIDA and the WUA member in the project will be presented in due course. The presentation shall be conducted by use of paper on panel.
- The condition to implement the project is shown in Attachment 3-2
- The important points of the condition are as follows:
 - ①Irrigation farm land size of 0.25 ha per members
 - ②Land consolidation and exchange for efficient irrigation
 - ③Saving money for pump replacement

3.6 Awareness Creation for Land Holding Issue

3.6.1 Allocation of Irrigated Land

Irrigation farm land size should be 0.25 ha per applicant.

- Asked by the applicants, commenting that 0.25 ha of irrigated land is too small to have benefit, the following explanation will be made to them:
 - 0.25 ha is the optimum scale by family labour force,
 - Large-scale cultivation may result in the loss, accompanied with high risk,
 - It is appropriate to start the irrigation farming practice with the optimum scale,
 - It is no objection for the WUA members to expand the irrigation area, arranging another pump, when the irrigated cultivation will be well under way.

3.6.2 Land Consolidation and Exchange

Land consolidation and exchange for efficient irrigation is essential.

- OIDA Staff will explain the necessity of the land consolidation and exchange in the following manners:
 - Irrigated land consolidation will reduce canal length, resulting in water loss,
 - Then, it leads to improvement of performance of pump as well as irrigation efficiency, and
 - Fuel consumption is reduced.
- For easier understanding of the land consolidation, it is recommended to use the tools made of ropes and papers.

- The following pictures show the irrigated areas without and with land consolidation for irrigation development.
- By use of tool the effect of the land consolidation and exchange can be explained.

3.7 Awareness Creation for Financial Issue

3.7.1 Replacement Cost for Pump

- Needs to save money for depreciation reserve of the pump can be presented as follows:
 - Ask whether applicants know life of the pump
 - What if the pump is dead?,
 - Unless money is saved, there is no fund for replacement of the pump
 - Then, the scheme shall be corrupt.
 - Thus, annual saving for pump replacement is essential.
- Example :

<ul style="list-style-type: none"> - Life of a pump = 8 years - Price of the pump is Birr 30,000.00 - Double cropping a year - Number of applicants is twenty (20) - Saving amount per member per is $30000 \text{ (Birr)} / 8 \text{ (years)} / 20 \text{ (members)} / 2 \text{ (season)} = \text{Birr } 93.75$
--

- The presentation also can be made by use of the following tools so as to let the WUA members understand the concept of depreciation reserve:
- The explanation by use of tools may help the applicants to understand the concepts. Sample of tools is shown below.

3.7.2 Group Fund Formation

- The OIDA Team shall explain necessity of the group fund formation according to the following procedures.
 - Based on cost-benefit analysis presented in the section 3.8, the OIDA Team will ask the applicants whether they can afford farming cost, including seeds, fertiliser, chemicals, and others,
 - The OIDA Team will ask the applicants how much they can arrange farming costs selling rainfed crops, cattle.
 - During the discussion, farmers will be aware that it is very difficult to arrange the fund for irrigated farming under present rainfed farming.

- Then, the OIDA Team will introduce the proposed system indicated in the section 3.4, paying labour wages for their participation in the construction works in stead of 10 % contribution.

3.8 Cost – Benefit Analysis

- The OIDA Team shall inform the applicants crop budget for major crops, such as tomato, cabbage, chilli, onion, and papaya.
- Through this awareness session, the OIDA Team shall inform the applicants the fact that benefits with irrigated farming is accompanied with risk depending on market price of the crops.
- The OIDA Team shall explain gross revenue as shown below.
 - Farm gate price of the products with range from annual minimum and maximum price (trend of annual fluctuation).
 - Factors the price varies, such as mass production and production in another areas
 - Yield of the products with range from minimum and maximum yields.
 - Gross income per household
- The OIDA Team shall explain production cost as shown below.
 - Composition of production cost
 - Input (seed, fertiliser, and pesticide)
 - Labour cost
 - Fuel
 - Depression cost for the pump
- Net revenue
 - Net revenue
 - Break even price
- Samples of crop budget for the major crop are presented in Attachment 3-3.

3.9 Awareness Creation for Scheme Management

- The OIDA Team shall provide several information of scheme management, including the responsibilities of the members as well as committee members.
- Throughout this session, the OIDA Team shall let the applicants understand difficulty of irrigation scheme management.
- The discussion material is shown in Attachment 3 - 4.

3.10 Consensus within Group Members

- The following matters should be explained again
 - Give the community the pump
 - Irrigation canal constructed by the community
 - Land exchange issue due to reduction of beneficiary area shall be settled
 - Selection of committee members like leader, secretary, cashier, and auditor.
 - Self-management of the scheme
 - Opening of bank account
 - Saving money for replacement of the pump
 - Saving money for operation of the pump
- If the applicants wish to implement the project, understanding the above condition, the OIDA staff shall help the applicants to prepare “records of consensus” for the implementation.
- The original of the document shall be kept in the Wareda Office. Copies shall be sent to the Branch Office, and the Head Office.

3.11 Action for Next Step

- The Branch office shall co-ordinate schedule for dispatching an design engineer and a surveyor in the planning and design.

Historical Map

Year	Events related to Irrigation	Irrigated Farmers Irrigated area	Problems arisen	Solution
1993 E.C.				
1992 E.C.				
1991 E.C.				

1990 E.C.				
1989 E.C.				

Examples of Events:

Application submitted

Drought

Past experience of irrigation and lessons leant

Items	Problem arisen	Cause	Action for solution	Results
Relation to pump owner				
Selection of Leader				
Selection of pump operator				
Water distribution				
Procurement of fuel				

Items	Problem arisen	Cause	Action for solution	Results
Contribution				
Procurement of inputs				
Marketing of products				
Access to credit				
Financial management				

Responsibilities of OIDA and the group in the scheme

- OIDA is responsible for
 - Procurement and installation of a small pump of **10 HP** for irrigation, which enable them to feed **5 ha** of land.
 - Provision of construction cost for pump house
 - Provision of initial training of the pump operation.
 - Provision of guidance for WUA establishment and management, such as water management, financial management, farming, marketing.
 - Monitoring of performance of irrigation scheme
- WUA are responsible for:
 - Selection of leader, secretary, accountant, and auditor
 - Selection of a pump operator
 - Coordination of irrigation farming size of **0.25 ha** per household
 - Conducting land exchange among farmers so that every member can make benefit with irrigated farming
 - Construction of irrigation canals
 - Procurement of construction material and construction of pump house
 - Operation and maintenance of the scheme, such as procurement and management of fuel, repair and maintenance of the pump, water distribution, maintenance of canals.
 - Opening bank account
 - Saving money for depreciation reserve
 - Keeping account records of WUA, income and expenditure
 - Keeping records of fuel procurement and consumption
 - Opening the account records to the member
 - Procurement of agricultural input, like seed, fertilizer, pesticide, and marketing of agricultural products
 - Reporting regularly to OIDA
 - Preparation of rule and regulation for management of the scheme
- The performance of irrigation scheme should be monitored by OIDA, especially in financial status of the scheme.
- OIDA reserves the right to withdraw the pump from community in the following cases:
 - Saving money for depreciation reserve is not carried out properly.
 - No cultivation is made during two consecutive years after installation of the pump.
 - Unclearness or dishonesty is found in the account book.
- The farmers should not entrust cultivation of their land to an outsider without consent of WUA committee.
- The WUA should not resell of the pump in all cases. In such case, the pump should be compensated by the WUA.

Crop Budget Analysis

[Irrigation: Tomato]

Description	Unit	Amount	Remark
Tomato	Farm gate Price variation ('00-'01)		
I. Gross Revenue	Min Mean Max		
(1) Yield [100 qts]/ ha	kg/ ha	8000.00	Marketable rate of produce is estimated to 80 %
(2)Unit Price	Birr/kg	0.45	
(3)Gross Revenue(2)x(1)	Birr	3600.00	
II Crop Production Cost			
(1)Seed (250 gms/ha)	Brr/ha	113.00	
Improved Variety (ex. Manglobe) Birr 450 /kg			
(2)Fertilizers			
1)Urea(100 kg/ ha, 1.8 Birr /kg)	1.8 Birr/ka	180.00	
2)DAP(100 kg/ ha, Birr 2.75/kg)	2.8 Birr/kg	275.00	
(3)Chemicals			
Menkozeb(Fungicide) 2.0 kg/ ha x 2 =4 kg/ ha	74.0 Brr/kg	296.00	
74 Birr/kg			
Endsulphan(Pest) 3 Lt/ha x 2 =6 Lt/ ha	55.0 Brr/Lt	330.00	
55 Birr/Lt			
(4) Labor cost			
Seed bed preparation (1-1.2 m width x 5-6 m length x 6 beds for 1 l	2 MD	0.00	
Seeding/covering/mulching/watering	4 MD	0.00	
3 times weeding for nursery period : 9hrs	2.3 MD	0.00	
Watering for the nursery bed 10 times = 16 hrs	2 MD	0.00	
Translating:			
Land preparation: disc plowing by tractor (240 Birr + 20 Birr fo	260 Birr/0.5 ha	0.00	
1st Land clearing	16 MD	0.00	
1 st plowing by oxen 2 oxen day	15 Oxen-day	0.00	
2 nd plowing by oxen 2 oxen day	15 Oxen-day	0.00	
Ridging by one oxen	15 Oxen-day	0.00	
Leveling	14 MD	0.00	
Pre Irrigation by pump	4 MD	0.00	
Planting seedling into the main field:	18 MD	0.00	
		0.00	
Hoeing 1 32 MD/ ha	32 MD	0.00	
Hoeing 2 32 MD/ ha	32 MD	0.00	
Hoeing 3 32 MD/ ha	32 MD	0.00	
Supporting Plant by stick 80 MD/ ha- 72.4 MD (Family labor)=7.0	7.6 MD	60.80	
Spraying chemical for nursery: 2 MD x 4 times =8 MD	8 MD	0.00	
Spraying chemicals for main filed 4 MD x 5 times = 20 MD	20 MD	0.00	
Spraying chemicals-2 (DDT) 2 MD x1 time = 2 MD	2 MD	0.00	
Harvesting (16 MD x 8times = 128 MD/1.5 months, 85.3 MD/month)	13 MD	104.00	
(5) Irrigation			
2man x 1 hr/each x 8 times = 8 hrs =2 MD (Nursery)	2 MD	0.00	
Irrigation (ManDay x 20 times/every 7 days)			
10 man x 5 hrs/each x 20 times = 1000 hrs = 125 MD	125 MD	0.00	
(6)Diesel			
10 liters/day/ ha x 20 times=200 Lts,	188.7 2.65 Birr/L	500.06	
Change Engine oil (5 lt x 4 times = 20 Lts) 19.8 birr/lt x 20 =390	4.0 19.8 Birr/L	79.20	
(7) Stick for tomato plant			
Cost of stick to support Tomato plants			
100 cm x 30 cm spacing = 33333 plants/ ha			
No of sticks per ha = approx 6000 sticks Birr 0.25/stick			
6000 x 0.25 Birr/pc =1500 Birr/ ha			
(8) Hand sprayer (MEC 16 Lt cap) Birr 520 /unit			
Total Crop Production Cost II		1938.06	
III Depreciation cost			
(1) Pump			
Birr 35000 /8 years/2 crops/5ha= Birr 437.5		437.50	
(2)Sprayer			
Birr 520 /6 years/2 crops/FH = Birr 43.3		43.30	
(3)Stick			
Birr1500 /6 crops = Birr250		250.00	
Total Depreciation cost		730.80	
IV. Net Revenue (I-II)	Brr/ha	1661.95	
V. Net Revenue (I-II-III)	Brr/ha	931.15	
Break Even price (without depreciation)=Birr 24.2 per 100 kg			
Break Even price (with depreciation) = Birr 33.4 per 100 kg			

Crop Budget Analysis

[Irrigation: Papaya]

Description	Farm gate Price variation			Unit	Amount	Remark
	Min	Mean	Max			
I. Gross Revenue						
(1)Yield [500 qts]/ ha				500 qts/ ha	50000.00	marketable rate is e to 70 %. Annual mean yield o 5 years is estimated 500 qts/year.
(2)Unit Sale Price	0.15	0.8	1	0.15 Birr/kg	0.15	
(3)Gross Revenue(2)x(1)				Birr/ha	5250.00	
II Crop Production Cost						
(1)Seed([]kg/ha :[] kg/ ha)				Brr/ha	0.00	
local seed from matured fruits (no actual cost).						
(2)Fertilizers						
1)DAP([0] kg/ ha, Birr 2.75/kg)				Brr/ha	0.00	
2)Urea([0] kg/ ha, 1.8 Birr /kg)				Brr/ha	0.00	
No fertilizer is applied through the cropping years.						
(3)Chemicals						
No chemicals are sprayed through the cropping years.						
(4) Labor cost						
[Nursery]						
Land clearing for shading				16.4 MD	0.00	
Land preparation for nursery				16 MD	0.00	
Sowing papaya seed on nursery				12 MD	0.00	
Weeding 1				6 MD	0.00	
Weeding 2				8 MD	0.00	
Weeding 3				4 MD	0.00	
[Main field]						
Land Clearing				40 MD	0.00	
1st plowing 2 oxen-day				15 Birr/oxenday	0.00	
2nd plowing 2 oxen-day				15 Birr/oxenday	0.00	
Transplanting (2 m x 2.0-2.3m)				40 MD	0.00	
watering				8 MD	0.00	
Replanting plant due to maile/femaile tree				12 MD	0.00	
Harvesting (8 MD x 25 times/year = 200 MD				200 MD	0.00	
(5) Irrigation						
Irrigation (every 15 days during Oct-May amounted to 18 times)						
12 MD/each x 18 =216 MD				216 MD	0.00	
(6)Diesel						
20 Lts/nursery				20 Lt	53.00	
8 Lts for transplanting 8LTs x 2.65 =21.2				8 Lt	21.20	
Fuel cost 26 Lt/each irrigation						
26 Lt x 18 times =468 Lt (@=2.65 468 x 2.65 =1240.2				468 Lt	1240.20	
Oil consumption: changing oil every 45 days						
3.5 Lt/each x 6 times = 21 Lts (@= 19.8 Birr/Lt x 21Lts = 415.8/£				83 ha	83.00	
Production cost total:					1397.40	
III Depreciation of the pump						
Pump cost Birr [35000] /8 years//5 ha = 875 Birr/yr/ha					875.00	
IV. Net Revenue (I-II)						
				Brr/ha	3852.60	
V. Net Revenue (I-II-III)						
				Brr/ha	2977.60	
Break Even Price (without depreciation)=Birr [4] per 100 kg						
Break Even Price (with depreciation) = Birr [6.5] per 100 kg						

Crop Budget Analysis

[Irrigation: Onion]

Description	Farm gate Price variation(Past 3 years)			Unit	Amount	Remark
	Min	Max	Mean			
I. Gross Revenue						
(1)Yield [170 qts] /ha				kg/ha	15300.0	Marketable production is esti to 90 %.
(2)Unit Sale Price	0.3	1.5	0.9	0.3 Birr/kg	0.3	
(3)Gross Revenue(2)x(1)				Birr	4743.0	
II Crop Production Cost						
(1)Seed([4000]gm/ ha				100 Brr/kg	400.0	
Improved Variety :Adama Red Birr [100] Birr/kg x 4 kg =400						
(2)Fertilizers						
1)DAP([100] kg/ ha, Birr 2.75/kg)				Brr/0.5ha	275.0	
2)Urea([100] kg/ha, 1.8 Birr /kg)				Brr/0.5ha	180.0	
(3)Chemicals						
Fungicide [Mencozeb , 334] gm/10 beds x [6]times = [Nursery				Brr/ 5beds	140.0	
Fungicide [Mencozeb, 1000 gm]/ ha x [8]times = [8 kg]				75 Brr/kg	600.0	
Pest cide [Tiodan, 166 cc]/10 Beds x[6]times = [1000 cc]				30 Brr/5beds	60.0	
Pest cide [Tiodan, 1000 cc]/ha x[8]times = [8 Lt]				60 Brr/Lt	480.0	
(4) Labor cost						
Nursery:						
Seed bed preparation (1 m width x 5m length x 10 beds for ha)				4 MD	0.0	
Seeding/covering/mulching/watering				2 MD	0.0	
3 times weeding for nursery period(60 days 18 hrs				2.25 MD	0.0	
Watering for the nursery bed 5 times = 40 hrs				5 MD	0.0	
Main field						
Land preparation: disc plowing by tractor (240 Birr + 20 Birr for t				260 Birr/ ha	0.0	
Oxen plowing (2 oxen-day x 2 times=4 oxen-day)				8 Oxen-day	0.0	
Ridging by oxen				2 Oxen-day	0.0	
Translating:(60 MD x 8 brr/day=480 Birr, Space: 15 cm x 5 cm)				60 MD	0.0	
Weeding 30 MD/ ha x 2 = 60 MD				60 MD	0.0	
Hoeing 40 MD/ ha x 3 times = 120 MD-72.4 MD(Family labor) = 47.6				47.6 MD	380.8	
Spraying chemicals for nursery 2 MD x 6 times =12 MD				12 MD	0.0	
Spraying chemicals for main field: 4 man x ha x 8 times = 32 MD				32 MD	0.0	
Harvesting (100 MD - 72.4 MD)= 27.6 MD short				27.6 MD	220.8	
(5) Irrigation						
Pre irrigation before transplanting (6 MD x 8 Birr=48 Birr)				6 MD	0.0	
Irrigation on transplanting day (6 MD x 8 Birr = 48 Birr)				6 MD	0.0	
Irrigation (17 times/every 7 days)						
6 man x 4 hrs/each x 17 times = 408 hrs = 51 MD				51 MD	0.0	
(6)Diesel						
Fuel for pre-irrigation+ cropping = 10 Lts/each x 19 times x 2.65 F				188.7 Lt	500.1	
Oil 5 Lts x 5 times = 25Lts = 25 Lts x 19.8 Birr/Lt= 495/5 ha				5 Lt	99.0	
(Engine Oil is scheduled to be replaced on every 45 days operation)						
(7) Manual Sprayer						
Cap. : 15 Lt 520 Birr/unit						
Total Crop Production Cost II					3335.7	
III Depreciation cost						
Pump cost: Birr [35000] /8 years/ 2 crops/5ha= Birr/yr/ha					437.5	
Sprayer cost: Birr[520]/6 year/2 crops/FH = 43.3 Birr					43.3	
IV. Net Revenue (I-II)					1407.3	
V. Net Revenue (I-II-III)					926.5	
Break Even Price (without depreciation)=Birr [21.8] per 100 kg						
Break Even Price (with depreciation) = Birr [24.9] per 100 kg						

Crop Budget Analysis
[Irrigation: Chili]

Description	Unit	Amount	Remark
Chili	Farm gate Price variation (Past 3 years)		
I. Gross Revenue	Min Max Mean		
(1)Yield [62 qts]/ ha	kg/ ha	6200.0	Marketable rate of the product estimated to 80 %.
(2)Unit Sale Price	Birr/kg	0.7	
(3)Gross Revenue(2)x(1)	Birr	3224.0	
II Crop Production Cost			
(1)Seed([1500]gm/ ha Improved Variety Birr[12] /kg	18 Brr/ha	18.0	
(2)Fertilizers			
1)DAP([0] kg/ ha, Birr 2.75/kg)	Brr/ha		
2)Urea([0] kg/ ha, 1.8 Birr /kg)	Brr/ha		
(3)Chemicals			
Fungicide 1[Mencozeb, 150 gm]/6 Beds x [3]times = [Nursery	33.8 Brr/6 beds	33.8	
Fungicide 2[Kocide, 150gm]/6 Beds x [3]times = [Nursery	29.2 Brr/6 beds	29.2	
Fungicide [Mencozeb, 800 gm]/ ha x [4]times = [3.2 kg]	75 Brr/kg	240.0	
Fungicide [Kocide, 800 gm]/ ha x [4]times = [3.2 kg]	65 Brr/kg	208.0	
Pest cide 1[Tiordan, 166 cc]/6 Beds x[3]times = [500 cc]/6 Bed	30 Brr/6beds	30.0	
Pest cide [Tiordan, 800 cc]/ha x[4]times = [3.2 Lt]	120 Brr/Lt	384.0	
Pest cide [DDT, 1000 gm]/ha x[1]times = [1000gm]	40 Brr/kg	40.0	
(4) Labor cost			
Seed bed preparation (1-1.2 m width x 5-6 m length x 6 beds for ha	2 MD	0.0	
Seeding/covering/mulching/watering	2 MD	0.0	
3 times weeding for nursery period(45 day:18hrs	2.25 MD	0.0	
Watering for the nursery bed 9-15 times = 24 hrs	3 MD	0.0	
Translating:			
Land preparation: disc plowing by tractor (240 Birr +210 Birr fc	260 Birr/0.5 ha	0.0	
1st Land clearing	16 MD	0.0	
1 st plowing by oxen 2 oxen day	8 Oxen-day	0.0	
2 nd plowing by oxen 2 oxen day	8 Oxen-day	0.0	
Ridging by one oxen	4 Oxen-day	0.0	
Leveling	14 MD	0.0	
Pre Irrigation by pump	4 MD	0.0	
Planting seedling into the main field:	18 MD	0.0	
Weeding - 1 8 MD/ ha	8 MD	0.0	
Weeding - 2 12 MD/ ha	12 MD	0.0	
Hoeing 1 26 MD/ ha	26 MD	0.0	
Hoeing 2 32 MD/ ha	32 MD	0.0	
Hoeing 3 30 MD/ ha	30 MD	0.0	
Spraying chemicals-1 2 MD x 5 times =10 MD	10 MD	0.0	
Spraying chemicals-2 (DDT) 2 MD x1 time = 2 MD	2 MD	0.0	
Harvesting	20 MD	160.0	
(5) Irrigation			
2man x 1 hr/each x 12 times = 24 hrs =3 MD (Nursery)	3 MD	0.0	
Irrigation (ManDay x 16 times/every 7 days)			
10 man x 5 hrs/each x 16 times = 800 hrs = 100 MD	100 MD	0.0	
(6)Diesel			
Fuel for cropping season: 24 Lts/day x 16 times=384 Lts x 2.65 Bir	188.7 Lt	500.1	
Oil 3.5 Lts x 4 times x 19.8 Birr/Lt = 277.2/5ha	2.8 Lt	55.4	
(7) Manual Sprayer			
Cap. : 15 Lt 520 Birr/unit			
Total Crop Production Cost II		1698.5	
III Depreciation cost			
Pump cost: Birr [35000] /8 years/2 crops/ha = 437.5 Birr/crop/ha		437.50	
Sprayer cost: Birr[520]/6 year/2 crops/FH = 43.3 Birr		43.30	
IV. Net Revenue (I-II)	Brr/ ha	1525.5	
V. Net Revenue (I-II-III)	Brr/ ha	1044.7	
Break Even Price (without depreciation)=Birr [27.4] per 100 kg			
Break Even Price (with depreciation) = Birr [35.1] per 100 kg			

Crop Budget Analysis

[Irrigation: Cabbage]

Description		Farm gate Price variation			Unit	Amount	Remark
Cabbage		Min	Max	Mean			
I. Gross Revenue							
(1)Yield [120 qts]/ ha					120 kg/ ha	10800.00	Marketable rate of t produce is estimated 90%.
(2)Unit Sale Price		0.15	0.7	0.425	Birr/kg	0.30	
(3)Gross Revenue(2)x(1)					Birr	3240.00	
II Crop Production Cost							
(1)Seed([700]gm/ ha, CV: Copenhagen					154 Brr/ha	154.00	
Birr [220]/kg							
(2)Fertilizers							
1)DAP([100] kg/ ha, Birr 2.75/kg)					2.75 Brr/kg	0.00	
2)Urea([50] kg/ ha, 1.8 Birr /kg)					1.8 Brr/kg	0.00	
(3)Chemicals							
Fungicide 1[Kocide, 166 gm]/8 Beds x [3]times = [500 gm]					33 Brr/4 beds	33.00	
Pesticide 2[Malatine, 150gm]/8 Beds x [3]times = [450 gm]					27 Brr/4 beds	27.00	
Fungicide [Mencozeb, 800 gm]/ ha x [5]times = [4 kg]					75 Brr/kg	300.00	
Fungicide [Kocide, 800 gm]/ ha x [5]times = [4 kg]					65 Brr/kg	260.00	
Pest cide 1[Tiodan, 166 cc]/6 Beds x [3]times = [500 cc]/6 Be					30 Brr/3beds	30.00	
Pest cide [Tiodan, 800 cc]/ha x [5]times = [4 Lt]					60 Brr/Lt	240.00	
Pest cide [DDT, 1000 gm]/ha x [1]times = [1000gm]					40 Brr/kg	40.00	
(4) Labor cost							
Nursery:							
Seed bed preparation (1-1.2 m width x 5 m length x 8 beds for ha)					2 MD	0.00	
Seeding/covering/mulching					4 MD	0.00	
3 times weeding for nursery period(45 day:12 hrs					1.5 MD	0.00	
Watering for the nursery bed 9 times = 18 hrs					2.3 MD	0.00	
Main field:							
Land preparation: disc plowing by tractor (240 Birr + 20 Birr fc					260 Birr/ ha	0.00	
Harrowing by hoe					10 MD	0.00	
Clearing plant residue					6 MD	0.00	
Plowing by oxen 2 oxen x 2 = 4 Oxen days					15 Oxen-day	0.00	
Operator 8 Birr/day					8 MD	0.00	
Ridging by one oxen day					15 Oxen-day	0.00	
+ operator one MD					2 MD	0.00	
Finalizing ridge by hoe					16 MD	0.00	
Pre Irrigation by pump (10 man x 5 hrs = 50 hrs)					6.3 MD	0.00	
Transplanting seedling into the main field:					20 MD	0.00	
Weeding - 1 6 MD/ ha					6 MD	0.00	
Hoeing 1 24 MD/ ha					24 MD	0.00	
Hoeing 2 24 MD/ ha					24 MD	0.00	
Hoeing 3 24 MD/ ha					24 MD	0.00	
Spraying chemicals-1 2 MD x 5 times =10 MD					10 MD	0.00	
Harvesting (4 times: 16 MD/each x 4 = 64 MD)					23.63 MD	189.04	
(5) Irrigation							
Irrigation (10 Man x 5 hrs x 12 times in every 7 days = 600					75 MD	0.00	
(6)Diesel							
Fuel for cropping season: 16 Lts/day x 12 times=192 Lts x 2.65 Bir					188.7 Lt	500.06	
Oil 3.5 Lts/each x 2 times x 19.80 Birr/Lt = 210/5ha					1.4 Lt	27.72	
(7) Manual Sprayer							
Cap. : 15 Lt 520 Birr/unit							
Total Crop Production Cost II						1800.82	
III Depreciation cost							
Pump cost: Birr [35000] /8 years/2 crops/5 ha=437.5/crop/ha						437.50	
Sprayer cost: Birr[520]/6 year/2 crops/FH = 43.3 Birr						43.30	
IV. Net Revenue (I-II)					Brr/ ha	1439.19	
V. Net Revenue (I-II-III)					Brr/ ha	958.39	
Break Even Price (without depreciation)=Birr [16.7] per 100 kg							
Break Even Price (with depreciation) = Birr [21.1] per 100 kg							

Difficulty of irrigation to be explained to farmers

Points to be stressed (Creation of ownership to scheme)

- Farmers' managed scheme by self-help. Free from dependency on the Government
- Create and follow the rule and regulation by Farmer themselves
- Member should follow leader's instruction
- Difficulty of irrigation farming should be solved by farmers themselves
- Irrigation farming could lead to not only more benefits but also more cost.
- Operation cost of the scheme should be borne by farmer themselves. Farmer should save money.
- Life of a pump is 5 years. Farmer should save money for replacement. No assistance for the cost by the government.

Responsibility and Obligation of Farmers

It cost very much to operate an irrigation scheme. Let farmers understand the facts as shown below

Responsibilities of farmers' Group

	Item	Leader and Committee members	Members
1.	Organizing group	-	-Selection of leader and committee member
2.	Meeting	-Chair a meeting -Participation in committee meeting	-Participation in a general meeting
3.	Irrigation scheduling and water distribution plan		-Decision of irrigation plan in general meeting -Follow cropping season according to irrigation schedule
4.	Water distribution	-Water distribution by water master	-Follow water distribution plan -Follow instruction by water master
5.	Maintenance	-Preparation of maintenance plan -Maintenance of pump -Maintenance of canals	-Patrol of facilities -Communal work for maintenance -Cleaning of canals -Pay fuel charge -Saving for pump replacement
6.	Financial management	-Book keeping by accountant -Internal auditing by auditor -Opening of account book to members	
7.	Rule and penalty	-Preparation of rule and regulation -Action to violator	-Follow rule and regulation
8.	Conflict management	-Settle dispute among farmers	-Communication in case of dispute -Self-help concept by WUA

Questions to Farmers

1 Cost – benefit

- 1.1 How much do you expect benefit by irrigation per households?
- 1.2 Do you know price of tomato (Max and Min)?
- 1.3 Do you know yield of tomato (Max and Min.)?
- 1.4 Gross Income Range (Max and Min)?
- 1.5 Do you know composition of production cost?

(Expected answer: Fuel, Fertilizer, Chemical, Allowance of pump operator, Spare parts, Depreciation)

- 1.6 Do you understand why the depreciation cost is required?
- 1.7 How much is the total cost?
- 1.8 How much is the net income?

2 Necessity of Land Consolidation

- 2.1 Why is the land consolidation necessary?
- 2.2 What is positive effect of land consolidation?
- 2.3 Can you discuss how to carry out land consolidation in your community?

3 Repair and Maintenance of Pump

- 3.1 Do you know an average life of pump around Meki area?
- 3.2 Do you know why is the pump broken down very shortly?
- 3.3 Do you know how the pump operates for long time?
- 3.4 Do you know why pump operation records should be kept?
- 3.5 Do you know the place where the pump can be repaired?
- 3.6 Do you know the repair is not free of charge?
- 3.7 Do you know what spare parts are needed for regular maintenance?

4 Financial Management

- 4.1 At present, I suppose that you do not have money for first cultivation. How are you going to buy fuel? **OIDA surely does not support in this matter.**
- 4.2 How much are you going to save money.
- 4.3 Do you think you can manage pump in such amount?
- 4.4 Do you know fuel consumption of pump (liter per an hour)?
- 4.5 How many hours are you going to operate pump a day?
- 4.6 How many days are you going to operate pump a season?
- 4.7 How much do you need money for pump operation?

5 Rule and Regulation within Community

- 5.1 What kind of rules and regulations are required to keep the pump good condition?
(Expected answers is shown in page 3)
- 5.2 What will you do if some of member do not keep the rules?

CHAPTER 4 PLANNING AND DESIGN

4.1 General

- Planning and design of the project will be conducted in the following procedure
 - Field survey and mapping
 - Delineation of irrigation area
 - Design of facilities
 - Cost estimate
 - Support of WUA establishment

4.2 Staff and Organisation

- Staff being engaged in planning and design period are as follows.

	Work Item	Head office	Branch office				Wareda office
		Design Engineer	Design Engineer	Surveyor	Draftsman	Social Worker	Staff
1.	Field Survey		●	●		●	●
2.	Mapping			●	●		
3.	Delineation of irrigation area		●			●	●
4.	Design	●	●		●		
5.	Cost estimate	●	●				
6.	WUA establishment support					●	●

4.3 Planning

4.3.1 Field Survey

- A surveyor in the branch office shall commence a survey in the field, including some benchmark, grid survey at intervals of 20 meters to prepare the topography map.
- The surveyor shall mark boundaries of land holders by pegs.
- The surveyor in co-operation with a design engineer in the branch office shall take an elevation of area, where irrigation is likely to be difficult.

4.3.2 Mapping

- The surveyor in Cupertino with a draftsman shall prepare the topography map in accordance with the following manner.
 - Scale: 1 to 1000
 - Contour interval: 1.0 m
- The map should include:
 - Farm land of individual applicants with border,

- Distinction of lands of applicants and non-applicants
- Area of farm land cultivating papaya and other permanent crops,
- Roads,
- Proposed location of pump installation,
- Proposed layout of irrigation canals, and
- Houses and public facilities,

4.4 Formulation of Development Plan

4.4.1 Delineation of Irrigation Area

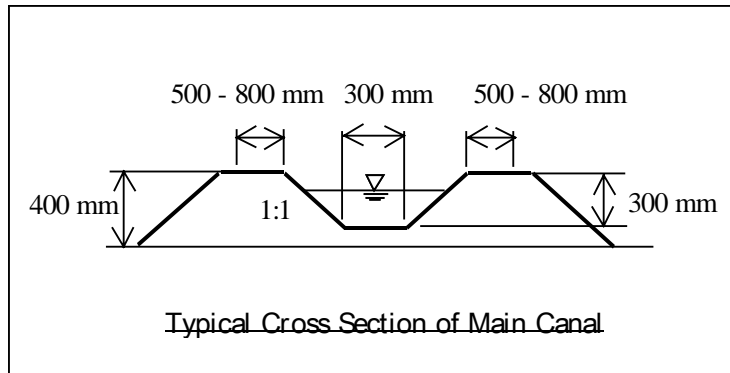
- Based on the map prepared by WUA member, delineation of irrigation area with land consolidation and exchange was discussed taking into consideration topographic condition and intention of the applicants.
- Location of the pump station and irrigation canal network is also decided tentatively.

4.4.2 Design of Facilities

- The design engineer shall conduct the location of the pump house and layout of the canals.
- Pump House
 - The location of pump house is decided considering the following conditions:
 - River slope is stable against erosion.
 - Sufficient water level can be secured during the dry season
 - Inundation resulting from flood is minimal
 - Floor area is 9 m² (3m x 3m)
 - Material of the pump house is recommended as follows.

Item	Material
Foundation	Masonry
Wall	Concrete block
Roof	Corrugated iron sheet
Window and door	Steel
Outlet	Masonry
Floor	Mortal

- Irrigation Canal
 - Irrigation canals consist of a main canal and field canals.
 - Excessive cut and embankment shall be avoided as far as possible for stability as well as to minimise cost of the canal.
 - Longitudinal design of the main canal shall be carried out by the design engineer.
 - Typical cross section of the main canal is shown below.



- Quantities of cut and filling shall be well-balanced so as to minimise the transportation of filling materials.
- Related structures consist of off-take, drop, culvert, and so on.
- The structures, in principle, shall be constructed by masonry.
- The OIDA Team shall discuss with the applicants whether the off-takes shall be constructed or not.

4.5 Cost Estimate

- Based on the topographic map, design engineers of the planing and design department in the branch office carried out design and cost estimate for the main canal with related structure and pump house.

4.6 Confirmation of Development Plan

- With design drawing and the map, development plan, including location of the pump house and irrigation canal route, shall be discussed and confirmed with the applicants in the field.

4.7 Support of the WUA Establishment

4.7.1 Selection of Committee Members

- The OIDA Team shall assist the applicants to select committee members, consisting of a chairman, a secretary, a cashier, and an auditor.
- The OIDA team shall assist the applicants to prepare minutes of the meeting of selection of the committee members. Sample of the minutes is indicated in Attachment 4-1.

4.7.2 Responsibilities of Committee Members

- The OIDA team shall explain the applicants roles and responsibilities of the committee members according to the followings.

Chairperson

Chair person is elected by General Meeting and has the following authorities:

- a) Keeps minutes of meetings
- b) Chairs the EC and GA
- c) Approve the expense of the association

Secretary

- a) Keeps minutes of meetings
- b) Attaches letters directed from the chairperson to their respective files if necessary replies to concerned offices.
- c) Administers the office of the association.

Treasures

- a) Collect income of the association
- b) Save the money in the bank
- c) Pay the money after it has been approved by chairperson or secretary
- d) Withdraw the money from the bank
- e) Keeps all documents of cash flows, expenses and income.

Auditors

- a) Controls whether the EC is functioning according by or not.
- b) Controls all activities of the association
- c) Controls the utilisation of money and properties of the association.
- d) Prepare report for GA.

4.7.3 Selection of Block Leader and Pump Operator

- Leader of each irrigation block of 1 ha, consisting of four applicants, shall be selected. He (she) will be representative of the irrigation block and be members of the committee to decide irrigation schedule.
- Pump operator(s) shall be selected among the applicants.

4.7.4 Opening Bank Account

- The OIDA Team shall support the applicants to obtain bank account in the name of them as described below
 - The minute of meeting, that appoints three (3) representatives for the bank operation, shall be prepared and sent to the Wareda Administration Office.
 - The application shall be forwarded to the Zonal Administration office with recommendation letter by the Wareda Administrator.

- The applicants shall submit the approval letter by the Zonal Office, minutes of the meeting, attaching the copies of ID cards of the representatives.
- Sample of minutes of meeting is shown in Attachment 4-2.

4.8 Action for the next step

- The OIDA team shall start to arrange a signing of agreement between OIDA and the applicants for the implementation of the project.

GUYANA 25-11-93 A.L.H

Gabaasa Filanoo Kotee Hojii raawachista Fii opiree
fataffa itti fa yada mtoota bishaan jallisi shubii
waigahin Guyana 25/11/93 kessaa kina noo kotee ho
jii raawachista shubii wolkayee ga'g'ee fame irratti
miseensaa ta waldachihaan Filanoo kotee ga'g'ee
same juree Haaluma kanaan namoota kan filata
mani Aka Hyimean jediftuu.

- 1, obboo
- 2, obboo
- 3, obboo
- 4, obboo
- 5, obboo

waigahin Filanoo kotee kana irratti summaalee mar
dabalataan filanoo opireetataa paampii yodhame
namoonni (lamma) miseensaa aymaan jeditti fi
lafa mani jita.

- 1, obboo
- 2, obbo

miseensaa waigahii irratti Aotzamaa Hendhu
saagaa lee Gujju dhanii Filateonii nama fi dani
a jto isaan obboo ya'ec kana wa jijin waigahetee jiiha

Handwritten signatures and scribbles, including some legible words like "BIB" and "3/3/93".

Handwritten marks at the bottom of the page.

ቃለ ጉባኤ

ቀን _____
 እለት _____
 የሰብሰባ ቦታ _____

በሰብሰባው ላይ የተገኘት፡

- 1/ _____
- 2/ _____
- 3/ _____
- 4/ _____
- 5/ _____

ሂሳብ ሠራተኛ ሲሆኑ የእለቱ መነጋገሪያ ሃሳቦች /አጀንዳ/

1ኛ/ ስለ ባንክ ሂሳብ አንቀሳቃሽ 3/3/ ሰዎችን መምረጥ ይሆናል።

ውይይቱ በተራ ቁጥር የሰፈረውን ሂሳብ አስመልክቶ ሰብሰባው ከወረዳው መስኖ ልማት ጽ/ቤት በተሰጠው መመሪያ መሠረት እኛ የሹቤ መስኖ ተጠቃሚዎች ማህበር ከኮሚቴው ውስጥ ሶስት ሰዎችን መርጠን የባንክ ሂሳብ እንዲያንቀሳቅሱ በተገለጸው መሰረት በሚገባ ውይይት ካደረግን በኋላ፡

- 1ኛ/ _____
- 2ኛ/ _____
- 3ኛ/ _____

ገንዘብ ያኻ ሆነው በሙሉ ድምፅ መርጠን የባንክ ሂሳባችንን እንዲያንቀሳቅሱ በሙሉ ድምጽ ወስነናል።

ቁጥር _____
ቀን _____

**ለመቂ ንግድ ባንክ ቅርንጫፍ ጽ/ቤት
መቂ**

የሹቢ መስኖ ውኃ ተጠቃሚዎች ማህበር በወረዳው መስኖ ልማት ጽ/ቤት በማህበር ተደራጅቶ የማህበሩን ንገዘብ በጋራ ፊርማቸው እንዲያንቀሳቅሱ

1ኛ/ _____

2ኛ/ _____

3ኛ/ _____ ንገዘብ ያኻፍ አድርገው የመረጡ ስለሆነ ለማህበሩ የባንክ ሂሳብ ተክፍቶ ሂሳቡን በጋራ ፊርማቸው እንዲያንቀሳቅሱ የዱግዳ ቦራ ወረዳ አስ/ጽ/ቤት በቁጥር _____ በተፃፈ ደብዳቤ ጠይቀናል።

ስለዚህ በሹቢ መስኖ ውኃ ተጠቃሚዎች ማህበር ስም የባንክ ሂሳብ ተክፍቶ ሂሳቡ በሶስቱ ሰዎች የጋራ ፊርማ እንዲያንቀሳቅስ እናሳስባለን።

ከሠላምታ ጋር

ግልባጭ

- > ለሊቀመንበሩ ቢሮ
- > ለኢኮኖሚ ዘርፍ
ምስ/ሸዋ/አስ/ጽ/ቤት
- > ለዱግዳ ቦራ ወረዳ አስ/ጽ/ቤት
መቂ
- > ለአቶ ወንድሙ በዳሶ
- > ለአቶ አፍራሶ ገመዳ
- > ለአቶ ጃንቦ ገለታ
ባሉበት

CHAPTER 5 AGREEMENT BETWEEN OIDA AND WUA

5.1 Preparation of Draft Agreement

- The draft agreement shall be prepared by the social workers of the branch office.
- Sample of the draft agreement is shown in Attachment 5-1.

5.2 Explanation of the Agreement to WUA members

- The OIDA Team shall hold a meeting in order to explain contents of the agreement for the project implementation including the followings.
 - Responsibilities of OIDA and the farmers' group
 - Development plan, including location of the pump station, canal layout, length of the canals
 - Scope of construction works with applicants' participation
 - Condition of the participation in the construction works, such as daily labour wage, necessity of group fund formation, and so on,
- The explanation of the agreement shall be made by Oromo language.
- The agreement shall be modified or amended according to the discussion with the applicants.

5.3 Signing of the Agreement

- A signing of the contract shall be made between representative of OIDA and leader of the applicants.
- All the applicants are requested to make a signature in the attached sheet.
- In this occasion, each applicant has reserve right to join or leave the farmers' group.
- OIDA shall give the applicants enough time to let them think it over.
- The farmers' group are allowed to replace some members with any other persons, who will wish to join the group, understanding the condition of the agreement.

5.4 Action for the next step

- The OIDA Team shall remind the applicants of process of the bank account opening since it may need much time to complete it.

**The Study on Meki Irrigation and Rural Development Project
In Oromia Region, Ethiopia**

**AGREEMENT
FOR
IMPLEMENTATION OF COMMUNITY-BASED
SMALL-SCALE PUMP IRRIGATION PROJECT**

_____, 1993

between

Oromia Irrigation Development Authority (OIDA)

and

_____ **Water Users' Association**

AGREEMENT

**Implementation of Community-based Small-scale Pump Irrigation Project
for
The Study on Meki Irrigation and Rural Development Project
in Oromia Region, Ethiopia**

This *AGREEMENT ON Implementation of Community-based Small-scale Pump Irrigation Project* (hereinafter referred to as *WORK*) is made between Oromia Irrigation Development Authority (hereinafter referred to as *OIDA*) and Water Users' Association (hereinafter referred to as *WUA*) on the date of _____, 1993 (_____, 2001). The terms and conditions set for performance of the *WORK* are as follows:

WITNESS

Whereas:

1. Both *OIDA* and *WUA* shall undertake the *WORK* complying with the "Condition of Agreement" attached herewith.
2. Both *OIDA* and *WUA* agree to the terms and conditions in respect to the *WORK* as specified hereunder.
 - (i) The following documents are considered as a part of this agreement, viz.:
 - (a) The General Conditions of the Agreement, and
 - (b) List of Applicants with their Signatures
 - (ii) The Contract shall be effective on the date the agreement is signed by the *OIDA* and the *WUA*.

Both OIDA and WUA agreed in witness hereof, and the Agreement is being effective on the date of _____, 1993 (_____, 2001) through signing of the authorised representatives.

Signature of OIDA

Signature of WUA

Mr.
Oromia Irrigation
Development Authority.
(OIDA)

Mr.
Representative of
_____ Users' Association

Implementation of Community-based Small-scale Pump Irrigation Project
for
The Study on Meki Irrigation and Rural Development Project
in Oromia Region, Ethiopia

General Condition of Agreement

1. Obligations of OIDA

1.1 OIDA is responsible for

- Procurement and installation of a small pump of some **10 HP** for irrigation with spare parts.
- Construction of pump house and related facilities
- Construction of irrigation canals and related structure
- Provision of initial training of the pump operation.
- Provision of guidance for WUA establishment and management, such as water management, financial management, farming, marketing.
- Monitoring of performance of irrigation scheme

2. Obligations of WUA

2.1 WUA are responsible for:

- Selection of committee members, such as leader, secretary, accountant, and auditor, and other committee members required
- Selection of a pump operators
- Coordination of irrigation farming land size of **0.25 ha** per each member
- Conducting land exchange among farmers so that every member can make benefit equally with irrigated farming
- Construction of irrigation canals under supervision of OIDA
- Conducting excavation, land clearing, filling & embankment, and others works directed by OIDA,
- Operation and maintenance of the scheme, such as procurement and management of fuel, repair and maintenance of the pump, water distribution, maintenance of canals.
- Opening bank account for communal money saving
- Saving all money obtained from wages of the construction works in the bank account of WUA
- Saving money for depreciation reserve of the pump
- Keeping account records of WUA, income and expenditure
- Keeping records of fuel procurement and consumption
- Opening the account records to the member
- Procurement of agricultural input, like seed, fertilizer, pesticide,
- Marketing of agricultural products
- Reporting regularly to OIDA according to the specified formats

- Preparation of rule and regulation for management of the scheme

3 Cautions

- 3.1 The performance of irrigation scheme shall be monitored regularly by OIDA, especially in financial status of the scheme.
- 3.2 If, in the opinion of OIDA, WUA shows that he is unable to perform the Works due to the following reasons, OIDA reserves the right to withdraw the pump from community:
 - Saving money for depreciation reserve is not carried out properly.
 - No cultivation is made during two consecutive years after installation of the pump.
 - Unclearness or dishonesty is observed in the account book.
 - Unfairness is observed for irrigation water distribution,
 - Unfairness is observed for land consolidation and exchange
- 3.3 The farmers shall not entrust cultivation of their land to an outsider without consent of WUA committee.
- 3.4 The WUA shall not resell of the pump in all cases. In such case, the pump should be compensated by the WUA. The act will be illegal and accused.
- 3.5 The WUA shall not transfer the Work or the benefits or obligations to any other person.

4 Construction

- 4.1 The schedule of procurement and installation of the pump shall be decided by OIDA taking into consideration progress of the construction works.
- 4.2 The work quantity and specification for construction of irrigation canal and related structures, if any, shall be specified in other documents.
- 4.3 The amount or labor wage rate for participation in the construction works shall also be specified in other documents
- 4.4 The time of completion for construction of irrigation canals and related structures, if any, shall be specified in other documents.

5. Others

- 5.1 If there are some issues, which are not specified in the agreement, it shall be settled by mutual discussion between both parties.
- 5.2 If any dispute shall arise between OIDA and WUA in connection with the agreement, it shall be settled by mutual discussion between both parties.

Naannoo Oromiyaatti

Qorannoo pirojakkii Jallisii fi Misooma Baadiyya Maqii

Waligaltee ijaarsa Jallisii paampii xixiqaa ummataa Bulan.

Waligalteen kun kan taasifame

Abbaa Taayitaa Misooma Jallisii Oromiyaa fi WIBJ Shubii giddutti.

Hagayya 1993

WALII GAITEE

Naanno oromiyaatti, qoranno projektii jallisii fi misooma baadiyyaa maqii keessatti. projectii Jallisii paampii xixiqaa unmataan bulan ijaaru.

Walii galteen kun ijaarsa projektii jallisii paampii xixiqaa ummataa bulan, kanaan boodatti hojii pirojektii jedhamani kan fudhatamanman Abbaa Taayitaa Misooma Jallisii Oromiyaa (ATMJO) fi WIBJ Shubii giddutti Hagayya ---- bara 1993 (Aug. ---, 2001) godhamee jira.

Haali fi sagantaan hojii ijaarsaa akka armaan gadii ta'a.

Haala waligalaa

1. A.T.M.J. fi WIBJ hojii kana kan raawatan “haaluma wallgaltee” mallataa’ee kana irratti hundaa’udhan ni ta’a.
2. A.T.M.J. fi WIBJ Lameenu haalaa fi saganta hojii armaan gaditti tuqamaniin waliigalani jiru.
 - i) Haalli asii gadditti ibsamani fi dokumeentiin kanatti qabate akka qaama waliigalteetti fudhataman:
 - (a) Haali dokumeentii waliigalaa irratti ibsame
 - (b) Maqaa itti fayyadamtoota mallattoo wajjin
 - ii) waligalteen kun hojiirra kan oolu guyyaa A.T.M.J.O fi WIBJ mallateesan irraa kaase ta’a.

Kan kenne
A.T.M.J.O
Maqaa B/B

kan fudhate
W.I.B.J Shubii
Maqaa Dura ta’a fi malattoo

Malatto

Maqaa Barreesaa fi malattoo

Guyyaa _____

Maqaa to’ataa koree fi malatto

Tajabtoota

Maqaa

Bakka hojii

1. _____

2. _____

3. _____

Itti Gaafatamummaa A.T.M.J.O/ JICA/ fi Garee

Ittifayadamtootaa

1. ATMJO /JICA/

1. Paampii huumnii isaa HP 10 ta'e bitee dhiyeesuu fi dhaabuu.
2. Baasii ijaarssa mana pampii tiif barbaachisu kennuu.
3. Baasii leenjii operetera pampii dandaa'uu (yeroo duraa tiif qofa)
4. Qajeelfama woldaan Itti. Fayadamtoota Bishaanii /WIBJ/ itti dhaabatuu fi ittiin bulu kkf. haala bulchiinssa fi itti fayadama bishaanii, bulchiinssa maallaqaa, toftaalee qonnaa fi gabaayaa fi kkf. qopheese dhiyeesuu.
5. Ijaarsa bo'oo jallisii fi kkf gaggeesu, hordofu fi to'achu.
6. Raawwii hojii misooma jallisii yeroo yerodhan too' achuu , qajelfama barbaachisu kennuu fi kkf.dha.

2. Ittigaafatamummaa W.I.B.J.

1. Dura taa'aa koree isaani, Barreesa, hojjata herreegaa fi to'ata filachu.
2. Oporeetara paampii filachuu.
3. Baldhinna lafa jallisiin misoomuu, mataa-mataa ittifayadamtootaatiin gara ha.0.25 hirachuu.
4. Lafa jallisiin misoomuu irraa akka qoteebulaan hundinuu walqixxedhan akka fayyadamuu danda'amutti waljijjiira lafa raawachu.
5. Booyii Jallisicha qotu, ijaaru fi qopheesu.

6. Meeshaalee mana paampii ijaaruuf barbaachisu kan naannoo sanitti argamuu danda'an dheyesuu fi mana paampii ijaaruuf humnaan gargaaruu.
7. Meeshaa harkaa kan akka akaafaa, doomaa yeroo ijaarsatti dhiyeefachuu.
8. Hojii oporeeshiniif suphaa pirojakkicha hunda danda'ee adeemsisuu, FK.
 - bittaa fi seera ittifayyadama boba'a.
 - Suphaa fi bakka bu'insa "spare partii" adda addaa kan paampii
 - Bishaan seeran walii hiruu.
 - Bo'oo qulquleesuu fi kkf.
9. Lakkoofsa Herreega Baankii banachu.
10. Qarshii paampiin yoo dulloome ittiin bakka buufatan kuufachu.
11. Galii fi Baasii W.I.B. iiaalchise odeefannoo fi galmee gaya qabachu
12. Baay'ina bittaa fi ittifayyadama boba'a irratti odeefannoo fi galmee gahaa qabachuu.
13. Gabaasa herreega Baankii isaani yeroo yeroon miseensotaf ibsuu.
14. Sanyii filatama, xaa'oo, qorichaa fi kkf. qonnaa isaani tiif bitanii dhiyeesu.
15. Yeroo murtayetti A.T.M.J.O tti gabaasa dhiyeesu.
16. Gatii human namaa fi kan yeroo ijaarsaa hirmaanaa ummataatti shaalagame gara ATMJO tiin kan kanfalamu Baank tti kuufachu fi akka ka'umsa kaapitaala godhachudhan naanefatani itti fayyadamu.
17. Seera ittiin bulmaata pirojakkicha kan keessaa baafachuu fi hojii irra oolchu fi kkf. dha.
18. Waa'ee gabaa callaa qonna jallisii irraa argamuu hordofuu xinxaluu fi murteesuu.

3. Akeekkachiisa

3.1 Qabeenyi faayinaansi fi hojiin misooma jallisii ATMJO dhan ni to'atama.

3.2 ATMJOn dhimmoota asii gaditti dhiyaatan kana irratti hundaayudhaan paampii isaa deebisee fudhachuudhaaf mirga qaba.

1. Yoo qarshiin paampiin dulloome ittin bakka bu'u seeraan

hin qusatamne ykn hin kuufatamne ta'e.

2. Paampiin kennamee waggoota walitti aanu lamaaniif hojii irra haala gaariin kan hin oole yoo ta'e.

3. Lakk. Heerrega baankii isaanii irratti qulqullinni yoo dhabame, ykn malaa-maltummaan adda addaa yoo hojjetame.

4. Itti fayyadama fi qabeenya lafaa irratti rakkoon gara WIBJ kanaattin hiikamu kan hin dandeenye yoo ta'e,

3.3 Itti fayyadamtoni /miseensonni/ walii galtee WIBJ alatti lafa jallisii isaani namoota alaa dhufatiif kireessuu hin danda'an.

3.4 WIBJ paampii kana haaluma kamiinuu gurguruu fi kiraa kennachu hin danda'u. yoo godhee argamee seeratti dhiyaatee adabama.

3.5 WIBJ bu'aa fi diraqama walii galtee kanaa nama biraa tiif dabarsuu hin danda'u.

4. Ijaarsaa

4.1 Haalaa adeemsa ijaarsa irratti hundaa'uun yeroon bittaa fi dhaabuu paampii A.T.M.J.O.tiin murtaawa.

4.2 Baay'ina hojii fi gosni hojii jallisii jechuun qonna bo'oo kkf yoo jiraatan waligatee biraa keessatti ni dhiyaata,

4.3 Gatiin human namaa kan hirmaanaa ummata kan ijaarsa keessatti barbaachisu dokumeenti biraa keessatti ni dhiyaata.

4.4 Yeroon jalqaba fi xumura ijaarsa jallisicha dokumeenti biraa keessatti ni qophaa'aa.

Kan biraa

5.1 Walii galtee kana keessatti wanti hin gale yoo jiraate, marii qaamolee lamaanitti ni hiikama.

5.2 Walii galte kanaan wal qabatee rakkooleen ATMJO fi WIBJ gidduutti yoo uumame marii qaamolee lameenittin furmani ni kennamaaf.

CHAPTER 6 CONSTRUCTION MANAGEMENT

6.1 General

- Construction management of the project will be conducted in the following procedure
 - Preparation of work program and schedule
 - Arrangement of equipment, material and labour
 - Construction management
 - Communication with WUA members
 - Inspection and handing over

6.2 Staff and Organisation

- Staff being engaged in construction period are as follows.

		Head office	Branch office			Wareda
		Construction Engineer	Construction Engineer	Surveyor	Social Worker	Staff
1.	Mobilisation works		●	●		●
2.	Procurement of equipment	●	●			
3.	Construction management		●			●
4.	Communication with WUA		●		●	●
5.	Inspection and handing over	●	●		●	●

- A construction engineer in the branch office, as a site representative, responsible for all field activities, supervising the Wareda staff.
- Staff in the Wareda Office will carry out construction of irrigation canal, monitoring of farmers' participation in the works.
- A construction engineer in the head office is responsible for overall management of the construction works.

6.3 Work Program and Schedule

- The construction engineer shall prepare the work program according to the format in Attachment 6 - 1.
- It is noted that performance of the work is supposed to be as follows.
 - Performance of irrigation canal is 1 m / day / person.
 - The construction of the pump house will be completed with two weeks.

6.4 Arrangement of Equipment, Material and Labour

6.4.1 Pump

- The construction engineer in the head office shall proceed procurement of the pump equipment, such as price quotation, selection of supplier, order of the equipment, delivery, and so on.
- Procurement of spare parts shall be carried out in consultation with the supplier.
- It is noticed that length of suction pipe and delivery pipes shall be decided based of field investigation taking into consideration lowest water level of the river and location of outlet structure of the pump house.

6.4.2 Pump House

- The construction engineer is responsible for procurement of the materials for the pump house, such as cement, sand and stone, reinforcement bar, concrete block, wood, corrugated iron sheet, window, doors, and so on.

6.4.3 Irrigation Canals

- The construction engineer is responsible for the following arrangement for the construction of the main canal:
 - Production of compaction tools for filling works
 - Procurement of hoes, buckets, and any other tools for the construction works upon requests of the WUA members and hired labours.
- In the case that equipment for soil transportation is required, the construction engineer shall request the manager of the branch office manager to arrange the equipment, such as dump trucks, and wheel loader.

6.5 Construction Works

6.5.1 Preparatory Works

- Before commencement of the construction works, the location of pump house and irrigation canal, off-take shall be confirmed with the WUA member in the field.
- If an access road shall be constructed, its route shall be discussed with the members so as to avoid such conflict with them, as damage of crops.
- In the case the new constructed canal crosses existing canal, the measures to secure the water to the lands fed by the canal.
- Selection of the borrowed area shall be decided carefully in consultation with the Wareda Administration, PA chairman, and farmers residing near the place.

- The surveyor shall proceed field setting based on the map and design drawings. According to ground elevation, the construction engineer shall calculate the excavation depth and embankment height for the pump house and the canals.

6.5.2 Construction of Pump House

- The OIDA shall employ carpenters, mason, and labours for the construction of the pump house.
- The construction includes foundation, wall, roof, door and window, water outlet.

6.5.3 Delivery and Installation of Pump

- The construction engineer in the head office is responsible for arrangement of vehicle and transportation of the pump equipment to the site.

6.5.4 Construction of Irrigation Canals

- OIDA is responsible for the construction of the main canal, while the field canals shall be constructed by the WUA members.
- Demolish of existing canals
 - The existing canal shall be demolished to construct the new irrigation canal
- Clearing of canal route
 - Before embankment, all top soil, organic deposit, grass, bushes, etc. shall be stripped.
- Excavation
 - Excavation of soil shall be made by manpower.
 - The excavated soil shall be re-used for embankment as much as possible.
- Embankment
 - In principal, material for embankment of canal is brought near the site.
 - The OIDA Team shall arrange borrowed material in the case the local filling materials are not appropriate
 - Quality of canal embankment shall be carried out carefully with proper watering
 - The OIDA Team shall instruct the WUA members to compact soils properly, providing the with a compaction tools.

6.6 Construction Management

6.6.1 Revision of Design

- The construction engineer can revise the design according to discussion with the WUA members. Special care shall be taken for location of off-take.
- Records of design revision shall be kept in document.

6.6.2 Quality Control

- Special care shall be taken for quality control of embankment, especially watering.

6.6.3 Progress Monitoring

- The construction engineer shall monitor the work progress according to the work schedule.
- The construction works shall be carried out by participation of the WUA members. However, in the case the work is behind the schedule, the construction engineer shall decide to employ hired labours to catch up the progress.
- Further, the construction engineer shall request, if necessary, to arrange additional construction equipment.

6.6.4 Management of Material and Labour

- The Wareda staff shall keep attendance records of farmers and hired labour according to the Attachment 6-2, and submit them to the construction engineer.

6.6.5 Financial Management

- The construction engineer is responsible for financial control for the works, such as procurement of fuel and materials, payment of per diem and bed allowance to OIDA staff, and wage for WUA members and labours.
- The construction engineer shall receive temporary payment from the branch office.
- Official receipts with cash books shall be surrendered to the branch office.

6.6.6 Preparation of Report

- The construction engineer shall prepare weekly report indicating daily activities to the branch office according to Attachment 6-3.

6.7 Communication with WUA Members

6.7.1 Participation in Construction Works

- The participation rate of the WUA members in the construction works shall be monitored by the Wareda Staff.
- If the rate is low, the Wareda Staff shall urge them to participate in the works more.

6.7.2 Other Issues

- The construction engineer, in co-operation with social workers, shall examine seriously how the situation can be improved, if the following issues arise among the WUA members or out of them.
 - Route of access roads
 - Conflict of the WUA members and existing water user in the command area
 - Conflict with private pump owners
 - Explanation and persuasion to the members, who oppose to pass the irrigation canals in their farm lands
 - Revision of the off-take location
 - Conflict with people near borrowed area.

6.8 Inspection and Handing over

6.8.1 Test Operation of Pump

- The Wareda staff shall be responsible for final inspection of the facilities and test pump operation.
- The OIDA team bear the expenses costs, consisting of fuel and allowance of night guards, until the handing over.

6.8.2 Training of Pump Operator

- The OIDA team shall hold one-day training for operation and maintenance of the pump.
- The training shall include the daily operation, regular maintenance, and repair.
- The training shall be carried out by a mechanic dispatched from the branch office.

6.8.3 Inspection of Irrigation Canals

- During test pump operation, the irrigation canal shall be checked in terms of quality of embankment, slope of the canal.

6.8.4 Preparation of Handing over Document

- The agreement for handing over shall be prepared by the construction engineer of the branch office.
- Sample of the draft agreement is shown in Attachment 6-4.

6.8.4 Handing-over

- A signing of the contract shall be made between representative of OIDA and leader of the applicants.

6.9 Action for the next step

- The social workers shall start to arrange training provided to the WUA committee members.

Daily Labour Payment Sheet
Sombo Ganet WUA
from 16-03-94 to 30-03-94

	Date	16-03-94	17-03-94	18-03-94	19-03-94	20-03-94	21-03-94	22-03-94	23-03-94	24-03-94	25-03-94	26-03-94	27-03-94	28-03-94	29-03-94	30-03-94	Total Days	Rate per day (Birr)	Amount (Birr)	Signature
		25-11-01 Sun	26-11-01 Sun	27-11-01 Mon	28-11-01 Tue	29-11-01 Wed	30-11-01 Thu	01-12-01 Fri	02-12-01 Sat	03-12-01 Sun	04-12-01 Mon	05-12-01 Tue	06-12-01 Wed	07-12-01 Thu	08-12-01 Fri	09-12-01 Sat				
1																				
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				
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14																				
15																				
16																				
17																				
18																				
19																				
20																				
21																				
22																				
23																				
24																				
25																				
	Total																			

Prepared by _____

Checked by _____

Note: /: Half day
 x: Full day
 -: Absent

Weekly Working Records

WUA

Date		Description
	Monday	
	Tuesday	
	Wednesday	
	Thursday	
	Friday	
	Saturday	
	Sunday	

Name: _____

Progress of Construction Works

As of November 21, 2001

Description	Shubi	Sombo Genet	Sombo Aleltu	Total
Command Area (ha)	3.75	7.00	5.00	15.75
WUA members	15	28	20	63
Date of Agreement	Aug. 27, 2001	Aug. 21, 2001	Sep. 20, 2001	
Date of commencement	Oct. 15, 2001	Oct. 27, 2001	Nov. 12, 2001	
<u>Pump House</u>				
Foundation	Completed	Completed	Completed	
Wall	Completed	Completed	Completed	
Roof, Window, Door	Completed	Completed	On-going	
Outlet works	Completed	Completed	-	
Finishing works	Completed	Completed	-	
<u>Pump</u>				
Procurement & Delivery to Wareda Office	Completed	Completed	Completed	
Pump installation	Completed	Completed	-	
Test operation	Completed	-	-	
<u>Irrigation Canals</u>				
Total length (m)	580	500	400	1,480
Length completed (m)	580	500	350	1,430
Structures (Nos.)				
Completed (Nos.)	2	4	3	9
On-going (Nos.)	2	3	0	5
On-going (Nos.)	-	1	0	1

Notes: Structures : Off-takes cum drop, Pipe Culvert

Irrigation Scheme Handovering Certificate

- ❖ Project Name _____
- ❖ Location Aana _____ Zone _____ PA _____
- ❖ Funding Agency _____
- ❖ Construction by _____
- ❖ Construction Completed _____
- ❖ Total project cost _____

Handed Over by

Received by

OIDA side

IWUA side

Name _____

Name of chair person

Signature _____

Signature _____

Date _____

Date _____

General information about the beneficiaries and land holding per household.

No	Name	Sex	Age	Irrigation land owned in the scheme (ha)	Signature
1	IWUA Committee				
2					
3					
4					
5					
6					
7					
8	Beneficiaries				
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

The existing prevailing situation

1. The current situation of land holding must be described (problems and solution to be made)

2. The scheme management system preferred by the beneficiaries is

“Simple Irrigation water users association”

3. Irrigation water distribution system

1. As per irrigable land area per household

2. Equal distribution among the all beneficiaries

4. Schemes expansion work in the future

5. Available structures and systems

5.1 Motor house _____

5.2 Pump _____ HP _____ L/S

Duties and Responsibilities

A. Duties and Responsibilities of OIDA

1. Carry out major maintenance
2. Assist in extension and Water management
3. Co-ordinate community management.
4. Issue guidelines on land holding and irrigation water use.

B. Duties and Responsibilities of IWUA

1. Carry out maintenance
2. Carry out canal clearing and scheme safety.
3. Implement by law.
4. Implement guidelines given by OIDA.
5. Purchase fuel and lubricants for pump
6. Safe guard and maintain pump
7. Create pump replacement fund from the beneficiaries and deposit on bank account.

Wittiness

- From Branch Office
1. From Extension and W. management Team

Name _____

Signature _____

2. From Community mobilization team

Name _____

Signature _____

3. From Study and design team

Name _____

Signature _____

Observers

1. From Funding Agency

Name _____

Signature _____

2. From Aana Administration Office

Name _____

Signature _____

3. From PA

Name _____

Signature _____

CHAPTER 7 SCHEME MANAGEMENT

7.1 General

- In connection with the scheme management, OIDA shall support the WUA in the following aspects:
 - Water management,
 - Maintenance,
 - Preparation of by-law,
 - Financial management,
 - Decision making and communication, and
 - Follow-up by the government organisation.

7.2 Staff and Organisation

- All the activities scheme management shall be carried by DA and the Wareda staff in co-operation with social workers and experts of extension and water management department in the branch office.

7.3 Water Management

7.3.1 Irrigation Planning and Scheduling

- Irrigation schedule in the scheme, such as starting and closing date of irrigation, operation hours of the pump, rotation schedule of water distribution, shall be discussed and decided in the general meeting.

7.3.2 Operation of Pump

- The operator shall operate the pump according to the irrigation schedule.
- The operator shall keep an operation records of the pump. It should be basis of maintenance plan of the pump. Sample of the pump operation record sheet is shown in Attachment 7 - 1.
- A way how to collect fuel and lubricant cost shall be discussed and decided in the general meeting.
- The operator shall keep records indicating quantity of fuel consumption and irrigated area. It will be the basis of the cost recovery.

7.3.3 Water Distribution

- The irrigation water shall be distributed to each farm plot according to the schedule.
- The leaders of each block are responsible for the water distribution.

7.4 Maintenance

7.4.1 Maintenance of Pump

- The WUA member shall carry out regular maintenance.
- In the event that the pump out of order, the WUA members shall report to the Wareda Office. The Office shall send the officers in charge to the field for inspection.
- Spare parts of the pump shall be managed by the Wareda Office. If necessary, the parts shall be changed b the officer.]
- In the case that the pump is damaged seriously, the Wareda office shall arrange the repair in Addis Ababa. In co-operation with the branch office, transportation of the pump to the supplier shall be arranged.

7.4.2 Maintenance of Irrigation Canals

- The WUA member shall conduct maintenance works for the irrigation canals, including grass cutting, silt removal, reshaping canal, and so on.

7.5 Preparation of by-law

- The Wareda staff shall support the WUA members to establish by-law.
- The model by-law is presented in Attachment 7-2.
- The Werada staff shall explain the WUA members contents of the by-law.
- The revision and amendment of the by-law is required as per situation of the WUA.

7.6 Financial Management

- The Wareda staff support the committee member for financial management.

7.6.1 Management of Bank Account

- It should be reminded that the financial transaction, such as deposit and withdrawal, can be carried out under joint signatures of the appointed three persons.

7.6.2 Collection of Money for WUA Management

- The cashier is responsible for collection of contribution and fuel cost according to regulation specified in the by-law.

- A way how to collect fuel cost shall be decided by the committee.
 - First option is that the cashier collect money from block leader in advance.
 - Second option is that the WUA shall purchased the fuel and the cost is recovered by irrigation block according to the hours spent for their operation.

7.6.3 Maintenance of Cash Book

- The cashier is responsible for filing receipts of expenses, consisting fuel, lubricants, allowance of the operator, and others required for the scheme management.
- The cashier shall be responsible for keeping payment transaction into the cash book.
- Sample format of the cash book is shown in Attachment 7-3.

7.6.4 Internal Audit

- In accordance with clauses in the by-law, auditor of the WUA shall conduct internal auditing.

7.6.5 Financial Report to WUA members

- The results of the audit shall be reported to all the members.

7.7 Decision Making and Communication

7.7.1 Meeting

- The general meeting and committee meeting shall be held in order to discuss the problem arisen among the WUA members and issues to be requested to the government organisation.
- The secretary of the WUA shall prepare minutes of the meeting.

7.7.2 Reporting to OIDA

- The chairman of the WUA shall report the following to the Wareda office in writing:
 - Entry and withdrawal of members
 - Result of reelection of the committee members

7.7.3 Conflict Management

- Basically, the OIDA staff shall be aware that the conflict arisen among the WUA members, such as land and water related dispute, shall be solved by themselves.
- However, in the case that the solution of the disputes are beyond capacity of the WUA members, the OIDA staff shall intervene between the parties concerned.

Model Bye-law of IWUA

Art 1: Name of the project

Art 2: Location

Zone _____ Aana _____ PA _____

Art 3. Operating Boundary of IWUA

North

South

East

West

Art 4. Objectives

1. The IWUA as the following objectives
 - a. To use irrigation water commonly
 - b. To solve the problems that cant be solved individually
 - c. To carry out maintenance of irrigation scheme
 - d. To build-up self-management and strength self reliance
 - e. To increase production and productivity by using modern irrigation and there by improve the standard of living of the members.
 - f. To use modern agricultural technology and inputs
 - g. Others

2. Duties

This IWUA has the following duties

- a. Prepare water usage programs for members
- b. Carry our scheme maintenance and conduct its management
- c. Conduct new irrigation technologies
- d. Purchase fuel and lubricants for the pump
- e. Carry out pump maintenance
- f. Establish replacement fund from for the pump and deposit it on the bank account.
- g. Pay salary for pump operator and guards
- h. Give decision on marketing of the products together.

Art 5. Legibility to be a member of IWUA

- a. Who has got land from the command area
- b. He/she has to be above 14 years of age
- c. Who has participated in study and construction of the scheme

Art 6. Right of the members

- a. Has got the right to use irrigation water
- b. Has got the right to elect or to be elected in different committees. But a member whose age is less than 18 years can't be elected.
- c. Give ideas, comments and decision on the meetings

Art 7. Obligation of the members

- a. Respect the bye-law the rules, regulation and decisions of the general meeting and executives committee.
- b. Every member should take care of the schemes and other properties of the association.
- c. Give service requested by the committee
- d. Purchase fuel and lubricant for pump and pay salaries for operator and guards
- e. Contribute money for pump replacement.
- f. To obey the agreement on land distribution.

Art. 8 General Assembly

- a. The G.A is an assembly in which all members are presented during a meeting
- b. The G.A is the highest decision making
- c. There will be a G.A meeting twice a year, but in case of necessity an emergency meeting can be called.
- d. In case of necessity $1/3^{\text{rd}}$ of the total member can call an emergency meeting 30 before its effective date.
- e. 15 days before G.A meeting, the agenda of the meeting shall be prepared and distributed for member
- f. If the quorum is not full the meeting will called in 15 days postponed and again the meeting will called in 15 days If the quorum is not full again, the meeting will carried out by those who are present.
- g. In case of a need for special decision making meeting, the quorum should not

be less than 2/3 of the members.

- h. One member has got only one vote
- i. A member vote cannot be represented by any other member or outsider.
- j. Any decision of G.A meeting will be carried out based on the number of the votes counted on the meeting. If the votes have equal numbers the chairman vote will have the decisive vote.
- k. Dismiss member from association or allow to enter the association.
- l. Pass the right of land ownership to legal inheritors.

Art. 9 Authority and Responsibility of G.A

- a. Elects or dismisses the executive committee
- b. Elects or dismisses other committee
- c. Evaluate the activities of association and make higher decisions.
- d. Solves the problems created among the members.
- e. Decides on the amount of contribution.

Art. 10 Executive committee (EC)

- a. Number of EC will be _____
- b. Their term of service is 2 years, but they can be elected again or dismissed and any time by G.A.
- c. Member of EC shall give notice of 15 days before G.A meeting about his leaving out the committee
- d. EC carry out meeting when the number of the EC is 50%
- e. Decision of EC carried out on the majority base of the vote. If both side votes are equal, the chairman vote will be the winner

Art. 11 Authority and Responsibility of EC

- a. Prepares annual irrigation plan
- b. Prepare irrigation water distribution program and control it's implementation.
- c. Prepare schemes maintenance schedule and control it's implementation.
- d. Produces and presents the rules and regulation of the association of irrigation water, disobey of laws, of not participate in maintenance activities
- e. Prepare report for G.A
- f. Executes the decision and directives made by the GA
- g. Checks whether the minutes of every meeting is properly filed.

Art. 12 Authority and Responsibility of the chairperson, secretary treasures and Audit

Chairperson

Chair person is elected by GA and has the following authorities:

- a) Keeps minutes of meetings
- b) Chairs the EC and GA
- c) Approve the expense of the association

Secretary

- a) Keeps minutes of meetings
- b) Attaches letters directed from the chairperson to their respective files and if necessary replies to concerned offices.
- c) Administers the office of the association.

Treasures

- a) Collect income of the association
- b) Save the money in the bank
- c) Pay the money after it has been approved by chairperson or secretary
- d) Withdraw the money from the bank
- e) Keeps all documents of cash flows, expenses and income.

Auditors

- a) Controls whether the EC is functioning according by or not.
- b) Controls all activities of the association
- c) Controls the utilization of money and properties of the association.
- d) Prepare report for GA.

Art.13 Amendment of the Bye-law

This Bye-law can be amended, if not less than 2/3 of the total member shall hand over the total members are presented in the meeting.

Art. 14 General

Any out going committee member shall hand over the property of association to new committee members.

Art. 15 Internal Regulations

Depending on this Bye-law, the EC can produce rules, guidelines and regulation

Art. 16 Effective Date

This Bye-law shall enter into force on the date of its approval by the G.A

Date

Cash Payment Order

To : Cashier

Pay for Mr/Mrs _____ Birr _____
(_____) for
_____ Payment

Signature of Chairman/Secretary _____ Date _____

I Mr/Mrs _____ received Birr _____

Signature _____ Date _____

CHAPTER 8 MONITORING AND EVALUATION

8.1 General

- After construction, the activities of the WUAs shall be monitored continuously and carefully by OIDA.
- The monitoring shall focus on whether equity of land and water resources allocation will be ensured among the WUA members, and whether the members hold the regular meeting for solving their problems in the scheme.
- It is also of importance that they can form the fund for replacement of the pump and farm inputs.

8.2 Monitoring Sheet

- Two kinds of the monitoring sheets shall be used.
- First format is used for an interview for each WUA members, including actual cultivating area, crops, revenue and expenditure as well as problem during cultivation period.
- Second format is used to monitor activities of the WUA. The information consists of total actual cultivated area against planned area, activities of the WUA committee, such as meeting, water management, financial management, gender issues, and so on.
- Monitoring sheets are shown in Attachment 8-1.

8.3 Monitoring Plan

- The survey shall be conducted after every cultivation period. The staff of the Wareda is responsible for the data collection.
- Results of the survey shall be sent to the head office through the branch office.

Project Monitoring Sheet

(WUA member)

	Name	Name of Crop	Cultivated Area (ha)	Income (Birr)	Problems
1					
2					
3					
4					
5					
6					
7					
8					

Prepared by

Date

Project Monitoring Sheet
(WUA committee)

- Is the meeting held regularly?

- Are there any disputes regarding land and water issue?
If yes, describe the problem

- Does the pump function well?
If no, describe the problem

- Balance of WUA fund

- Is the account system carried out properly?
If no, please describe the problem

- Is the auditing system carried out properly?
If no, please describe the problem

- Please describe problems in the WUA, if any.

Prepared by

Date
