

3.2 Objectives of Program 2

The preliminary analysis identified that actual irrigation performance of the OIDA schemes remains at 58% of the total irrigable area. In order to clarify the constraints and problems encountered in the existing schemes, the supplemental data collection was carried out.

First of all, the joint field inspection was carried out by JICA and OIDA in July and August 2001 at selected eight (8) schemes, namely Bosha, Shoba, Lugo, Lemi, Walga, Godino, Fultino and Gedamso, under the control of the Central Branch Office of OIDA. The inspection obtained a lot of valuable information and verified current conditions of each scheme. This first examination confirmed the extreme importance of the management information system (MIS) for continuous project benefit monitoring and evaluation (PBME) and, furthermore, for timely rehabilitation works in future.

Program 2 of the verification study aims at establishing the OIDA database containing all the information of 96 schemes and initiating future PBME by keeping close contact with four (4) branch offices. The database was designed to include the following information.

- 1) Design reports,
- 2) Design drawings,
- 3) Data formats, and
- 4) Photographs.

3.3 Study Methodology

3.3.1 Review of Previous Studies

OIDA carried out the inventory survey of the 96 schemes in May 2000. In addition, some data are available for crop production. These existing data were taken into consideration as side information to select the questions for the data format (survey sheet) and to supplement the analysis of the present inventory survey.

3.3.2 Visit to Branch Offices

The JICA Study Team and the Program Coordinator (2) of the OIDA C/P Team visited at four (4) OIDA branch offices and explained the objectives and their necessary assistance for Program 2. The record of the branch office visits is summarized in Table X.3.3.

Table X.3.3 Summary of Branch Office Visits

Branch Office	Date of Visit	Branch Office Manager	Location	Distance from Addis Ababa
Central	August 28	Mr. Birhanu Bekele	Adama	100 km
Western	September 5-6	Mr. Abdisa Nemera	Nakamte	330 km
Eastern	August 28-30	Mr. Abera Chala	Harar	515 km
Southern	September 12-13	Mr. Samuel Hussen	Robe	430 km

In addition, the existing facilities and equipment kept by the branch offices was also listed up. The information obtained is fully taken into consideration in establishment of the optimum monitoring system and database.

3.3.3 Data Format and Methodology

Prior to the study, the data format was prepared as presented in Attachment X-3-4. The JICA Study Team requested the branch office managers to dispatch well-experienced engineers and/or social workers to each of all the irrigation schemes under the relevant service areas and make the site inspection and the necessary interview according to the data format. One (1) camera was also provided to each of branch offices. In response to the request, four (4) branch offices carried out the data collection. Due to the time constraint, the inspection was carried out at the pace of one scheme a day. The result is summarized in Table X.3.4.

Table X.3.4 Summary of Site Visits by Branch Office (As of November 8, 2001)

Branch Office	Principal Staff	Period of Survey	Total Schemes (No.)	Schemes Visited (No.)
Central	Mr. Godana Dhaba (Irrigation Engineer)	September 5 to 20	38	22 (58%)
Western	Mr. Dereje Adeba (Agricultural Engineer)	September 10 to November 10	24	23 (96%)
Eastern	Mr. Habtamu Emiru (Agricultural Engineer)	September 1 to November 15	23	10 (43%)
Southern	Mr. Kedir Lole (Agricultural Engineer)	September 15 to October 10	13	13 (100%)
Total			98	68 (69%)

In addition to the 96 schemes surveyed in May 2000, two (2) schemes are surveyed. Therefore, the database includes the data and information for the 98 schemes.

3.4 Information Obtained

The information obtained is compiled into the spread sheets as presented in Attachment X-3-5. They are filed and kept in the bookshelves. In parallel, all the

data are input into the simple spreadsheets on MS Excel.

The information include:

- 1) Name of scheme
- 2) Location
- 3) Irrigation performance in May 2000 and October 2001
- 4) No. of beneficiaries in May 2000 and October 2001
- 5) Construction period
- 6) Construction cost
- 7) Water source
- 8) Intake structure
- 9) Headworks : type, crest length, weir/dam height, intake size, water duty, etc.
- 10) Design discharge
- 11) Conveyance structure (km) : main, secondary and tertiary canals
- 12) Drainage structure (km) : main, secondary and tertiary canals
- 13) Headworks (problems)
- 14) Main canal (problems)
- 15) SC, TC, FD and drainage canals (problems)
- 16) Availability of design documents and working drawing
- 17) Status of construction works: completed or not completed
- 18) Dispatch of OIDA DA (development agent/extension worker)
- 19) Involvement of beneficiaries in project O&M and their training
- 20) OM manual
- 21) OM charge and bank account
- 22) Farm input shortage
- 23) Water shortage, dispute in water use, conflict between upstream and downstream areas
- 24) Full use of the scheme
- 25) Crop selection against scheduled cropping patterns
- 26) Salinity problem
- 27) Water Users Association (WUA): members, establishment, registration/legal status, water master, by-law, frequency of meeting, meeting record keeping, etc.

3.5 Current Positions of the Projects

3.5.1 Project Works

- (1) Water Source

Table X.3.5 Irrigation Schemes Categorized by Water Source (May 2000)

Unit : No. of Scheme

Branch Office	River	Spring	Lake	Combined	Total
Central	29	7	1	1 (R+S)	38
Western	24	0	0	0	24
Eastern	8	15	0	0	23
Southern	13	0	0	0	13
Total	74	22	1	1	98

(2) Intake Structures

Table X.3.6 Irrigation Schemes Categorized by Intake Structure (May 2000)

Unit : No. of Scheme

Branch Office	Dam	Headworks	Pump	Total
Central	3	33	2	38
Western	0	24	0	24
Eastern	0	23	0	23
Southern	0	13	0	13
Total	3	93	2	98

(3) Headworks

Table X.3.7 Type of Headworks (October 2001)

Branch Office	Broad Crest Weir	Ogee Weir	Trapizoidal	Barrage	Free Intake	Gabion	Spring Intake	Unknown	Total
Central	11 (16.5, 1.7)	2 (16.5, 1.8)	2 (11.1, 0.9)	0	1	0	0	6	22
Western	10 (17.9, 1.2)	5 (21.7, 1.9)	0	3	0	0	0	5	23
Eastern	2 (26.5, 1.6)	0	0	0	0	2	5 (15.8, 2.0)	1	10
Southern	3 (9.8, 0.9)	5 (13.2, 1.0)	0	0	0	0	0	5	13
Total	26	12	2	3	1	2	5	16	68

Remarks: (average crest length in meter, average crest height in meter)

(4) Canal Systems

Table X.3.8 Average Canal Length (October 2001)

Unit : km per scheme

Branch Office	Main Canal s	Secondary Canals	Tertiary Canals	Total
Central	2.68	1.76	4.05	8.49
Western	3.39	1.59	5.26	10.24
Eastern	4.29	0.73	4.50	9.52
Southern	2.52	1.84	3.49	7.85

(5) Related Structures

Table X.3.9 Average Number of Related Structures (October 2001)

Unit : no. per scheme

Branch Office	Division Box	Turn-out	Off-take	Drop	Culvert	Flume	Chute	Cross drain	Others
Central	3.9	23.2	14.6	52.4	8.5	0.4	0.1	0.4	0.1
Western	0.9	25.8	5.1	16.7	2.4	0.9	0.3	0.2	0.2
Eastern	0.3	18.3	37.0	8.3	1.7	0.0	0.0	0.0	0.0
Southern	2.5	19.3	7.3	31.7	2.3	0.4	0.2	0.2	0.3

(6) Irrigation Area (Plan)

Table X.3.10 Planned Irrigation Area (May 2000)

Unit : no. per scheme

Branch Office	<50 ha	50 – 100 ha	101 – 150 ha	151 – 200 ha	201 – 250 ha	251 – 300 ha	301 ha<	Total
Central	6	14	11	2	3	0	1	37
Western	8	10	3	3	0	0	0	24
Eastern	8	10	2	1	1	0	1	23
Southern	1	6	3	0	2	0	0	12
Total	23	40	19	6	6	0	2	96

3.5.2 Project Beneficiaries

(1) Performance in Beneficiaries

Table X.3.11 Number of Beneficiaries (May 2000)

Branch Office	Nos. of Scheme	Scheduled		Actual		Achievement (%)
		(HH)	(%)	(HH)	(%)	
Central	37	13,484	50%	8,128	51%	60%
Western	24	5,173	19%	1,676	11%	29%
Eastern	23	5,423	20%	4,682	30%	92%
Southern	12	2,904	11%	1,277	8%	44%
Total/Average	96	26,984	100%	15,763	100%	58%

(2) Irrigation Area per Household (Plan)

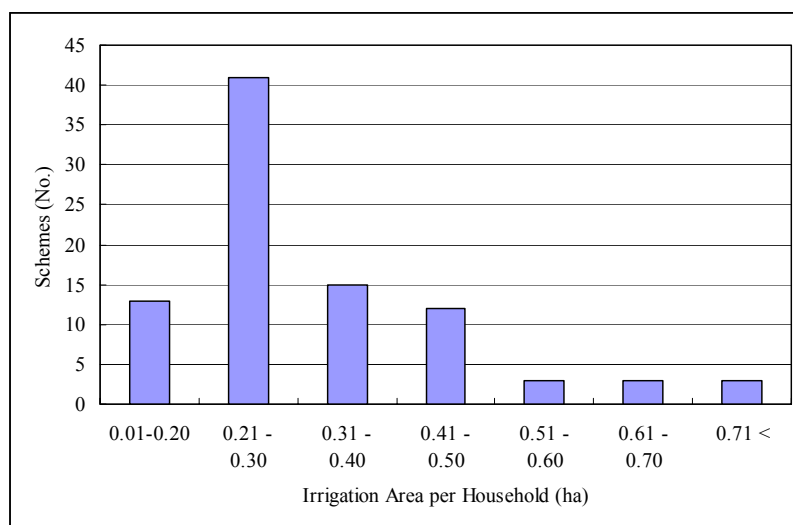


Figure X.3.3 Irrigation Area per Household

3.5.3 Project Status and Documents

(1) Project Status

Table X.3.12 Project Status (October 2001)

Unit : No.

Branch Office	Completed	Not Completed	Unknown	Total
Central	18	3	1	22
Western	17	3	3	23
Eastern	8	2	0	10
Southern	7	3	3	13
Total	50 74%	11 16%	6 10%	68 100%

(2) Documents and Drawings

Table X.3.13 Documents and Drawing (October 2001)

Unit : No.

Branch Office	Design Documents			Design Drawing		
	Exist	Not	Partial	Exist	Not	Partial
Central	1	16	0	2	6	12
Western	9	12	1	9	8	4
Eastern	0	9	1	0	9	1
Southern	8	1	4	1	10	2
Total (No.)	18	38	6	12	33	19
(%)	29%	61%	10%	19%	51%	30%

3.5.4 OIDA's Supports for O&M

(1) Dispatch of OIDA DA (Development Agent) and Farmers Training

Table X.3.14 OIDA DA and Farmers Training (October 2001)

Unit : No. of Schemes

Branch Office	OIDA DA			Farmers Training		
	Exist	Not	Unknown	Done	Not	Unknown
Central	20	2	0	16	3	3
Western	20	2	1	20	3	0
Eastern	8	2	0	0	10	0
Southern	5	4	4	13	0	0
Total (No.)	53	10	5	49	16	3
(%)	78%	17%	9%	72%	24%	4%

(2) OM Manual and OM Charge

Table X.3.15 OM Manual and OM Charge (October 2001)

Unit : No. of Schemes

Branch Office	OM Manual			OM Charge		
	Exist	Not	Unknown	Collected	Not	Unknown
Central	0	14	8	1*	9	12
Western	4	18	1	0	22	1
Eastern	0	10	0	0	10	0
Southern	3	7	3	0	11	2
Total (No.)	7	49	12	1	52	15
(%)	10%	72%	18%	1%	77%	22%

Remarks : * Lemi Scheme in North Shoa Zone (Birr 3 per HH per year)

(3) Water Shortage and Dispute

Table X.3.16 Water Shortage and Dispute (October 2001)

Unit : No. of Schemes

Branch Office	Water Shortage			Dispute in Water Use		
	Exist	Not	Unknown	Exist	Not	Unknown
Central	12	6	4	5	13	4
Western	5	17	1	4	17	2
Eastern	7	3	0	8	2	0
Southern	3	10	0	3	10	0
Total (No.)	27	36	5	20	42	6
(%)	40%	53%	7%	29%	62%	9%

3.5.5 Water Users Association (WUA)

(1) Establishment and Legal Registration

Table X.3.17 WUA Established and Registered (October 2001)

Unit : No. of Schemes

Branch Office	WUA Establishment			Legal Registration		
	Confirmed	Not	Unknown	Registered	Not	Unknown
Central	3	0	19	0	1	21
Western	20	0	3	2	18	3
Eastern	1	9	0	0	10	0
Southern	0	13	0	0	13	0
Total (No.)	24	22	22	2	42	24
(%)	36%	32%	32%	3%	62%	35%

3.6 Problem Analyses

3.6.1 Headworks

Out of 68 schemes, 28 schemes or 41% suffer from lack or damaged sluice gates. As well, 24 schemes have the problems of intake gates. Damaged intake structures (13)

and damaged wing walls (9) were also observed. Although the schemes need the government assistance to renewal of those gates and fix new gates, it was reported that some of the gates were stolen. The security control by the community of water users is highly important. Apart from the structural and mechanical defects, silt deposits and weed infestation in the upstream side of the headworks. Riverbank erosion is serious in six schemes.

Table X.3.18 Problems of Headworks (No. of Schemes)

No.	Problems	Central	Western	Eastern	Southern	Total
1.	No/damaged sluice gate	8	5	7	8	28
2.	No/damaged intake gate	8	2	9	5	24
3.	Silt deposit in u/stream	7	3	2	8	20
4.	Damaged intake structure	2	2	5	4	13
5.	Damaged wing walls/No back fill behind wing	3	1	0	5	9
6.	River bank erosion	0	2	3	1	6
7.	Weed infestation	1	-	1	4	6
8.	Temporary diversion problems	-	4	-	-	4
9.	Lack of outlet protection	2	-	-	-	2
10.	Uncontrolled water distribution	2	-	-	-	2
11.	Stilling basin problems	-	2	-	-	2
12.	Lack of spillway, sluice and others	-	-	2	-	2
13.	No inspection box on pipe intake	1	-	-	1	2
14.	River course not excavated in d/s	1	-	-	1	2
15.	River course changed	1	-	-	1	2
16.	Stoplog of barrage broken	-	1	-	-	1
17.	Low weir height	1	-	-	-	1
18.	Deteriorated dam structures	1	-	-	-	1
19.	Crest submerged	1	-	-	-	1
20.	Sliding soils into spring	-	-	1	-	1
21.	Stilling basin problems	-	-	1	-	1
22.	Approach canals broken	-	-	1	-	1
	Total	39	22	32	38	131

3.6.2 Main Canals

Canal seepage was observed at 32 schemes 47% of the inspected 68 schemes. Cracks of lined canals and concrete structures were identified at 21 schemes. These defects should be focused and rectified with the government supports. Some schemes have the problems derived from missing structures such as turn-outs, extension canals, intercept drain, slabs, etc. Further clarification is required for causes of these problems, e.g. design mistake, lack of budgets during the construction period, etc. In this regard, it is also important to verify the background of the incomplete projects. As presented in Section 3.5.3, 11 schemes or 16% of the inspected 68 schemes are not completed. Problems such as silt deposits, weed growth, illicit water tapping and damaged canal embankment are as a result of poor O&M under the responsibilities of the water users.

Table X.3.19 Problems of Main Canals (No. of Schemes)

No.	Problems	Central	Western	Eastern	Southern	Total
1.	Seepage/leakage of canals	8	13	4	7	32
2.	Silt deposit	10	5	4	5	24
3.	Cracks of lined canals / concrete structures	9	4	1	7	21
4.	Canal embankment damaged by animals	8	3	3	0	14
5.	Weed growth	10	-	-	3	13
6.	No design canal shape	7	2	3	0	12
7.	Embank. damaged by human/Canal body used for cultivation	4	-	-	2	6
8.	Canal breach	-	5	-	-	5
9.	Insufficient canal longitudinal slope	2	2	-	-	4
10.	Gates fixed not properly	-	-	4	-	4
11.	Illicit water tapping	2	-	-	1	3
12.	Overtopping of water	3	-	-	-	3
13.	Missing structures (turn-out)	1	2	-	-	3
14.	Missing structures (canal ext.)	1	1	-	1	3
15.	Damaged structures by flood	-	3	-	-	3
16.	Erosion of bank fill materials	-	-	-	3	3
17.	Damaged by land slide	-	2	-	-	2
18.	No gates for division boxes	2	-	-	-	2
19.	Debris dropped from banks	2	-	-	-	2
20.	Damaged drops & division boxes	2	-	-	-	2
21.	Structures no strength	-	-	-	2	2
22.	Missing structures (intercept drain)	1	-	-	-	1
23.	Missing structures (slabs)	-	-	-	1	1
24.	Embank. damaged by flood	1	-	-	-	1
25.	Emergency spillway	1	-	-	-	1
26.	Damaged by scoring	-	1	-	-	1
27.	Broken turn out	-	1	-	-	1
28.	No spillway	-	-	-	1	1
29.	Miss use of drainage crossing	-	-	-	1	1
30.	Lined canals not back filled	-	-	-	1	1
31.	Construction incomplete	-	-	-	1	1
	Total	74	44	19	36	173

3.6.3 Secondary and Tertiary Canals and Drainage System

As discussed in Section 3.6.2 on Main Canals, the water users are in a position to take responsibilities for weed control, repairing works of canal embankment, desilting, etc. Most of on-farm structures are also repairable by farmers' skills. Further inventory is required to calrifay the current status of drainage systems in 14 schemes and seepage problems of SC in 5 schemes and flumes in 5 schemes.

Table X.3.20 Problems of SC, TC and Drainage (No. of Schemes)

No.	Problems	Central	Western	Eastern	Southern	Total
1.	Weed growth	11	0	0	4	15
2.	Poor drainage	3	2	1	8	14
3.	Embankment Damaged	7	0	0	3	10
4.	No gates for division boxes	2	-	-	7	9
5.	SC seepage/Leakage	-	2	-	6	8
6.	Silt deposit	3	1	-	4	8
7.	Canal breaching	1	-	-	5	6
8.	Erosion of bank fill materials	6	-	-	-	6
9.	Seepage/damage of flume	-	4	1	-	5
10.	TC Construction not yet completed	-	-	5	-	5
11.	No design canal shape	1	-	-	3	4
12.	SC Construction not yet completed	2	-	1	-	3
13.	Structures destroyed	-	-	-	3	3
14.	Submerged off-take to TC	2	-	-	-	2
15.	Removal of fill soil	2	-	-	-	2
16.	Less footpath and cattle crossing	-	2	-	-	2
17.	Leakage of TC	-	1	-	-	1
18.	Missing structures (intercept drain)	1	-	-	-	1
19.	Lack of division box	1	-	-	-	1
20.	More structures (drop, off take)	-	1	-	-	1
21.	Incomplete construction (flume)	-	1	-	-	1
22.	Syphon not functional	-	-	1	-	1
23.	Lack of back fill	-	-	-	1	1
24.	Canal body used for cultivation	-	-	-	1	1
25.	Poor plastering	-	-	-	1	1
	Total	42	14	9	46	111

3.7 Basic Information of Initial Investment for OIDA Schemes

3.7.1 Objectives

In view of limited fund availability, it is important to optimize the level of investment when irrigation project works are constructed. The investment can be justified from the standpoints of project sustainability. Over-investment has also to be avoided. Through the analyses on the database being constructed, the past trend of the initial project costs was preliminarily clarified. The information obtained will be taken into account when the rehabilitation works will be formulated.

3.7.2 Project Cost

(1) Total Investment

The information for initial investment is available for the 81 schemes, which were constructed in the period between 1991 and 1999. They are summarized below.

TableX.3.21 Annual Investment in 1991 - 2000

Year	No. of Schemes	Project Cost (Birr 1000)	Exchange Rate * (Birr/US\$)	Project Cost (US\$ 1000 equiv.)
1991	2	852	2.0700	411.7
1992	0	0	2.8025	0.0
1993	7	1,352	5.0000	270.4
1994	19	8,249	5.4650	1,509.4
1995	16	9,765	6.1583	1,585.7
1996	16	10,610	6.3517	1,670.5
1997	13	10,659	6.7093	1,588.7
1998	7	4,984	7.1159	700.3
1999	1	922	7.9423	116.1
2000	-	-	8.2173	-
Total	81	47,393		7,852.8

Source : * Commercial Bank of Ethiopia

(2) Unit Cost

The project cost per hectare falls in a range from less than US\$ 500 to US\$ 5,000. Their frequency is illustrated below.

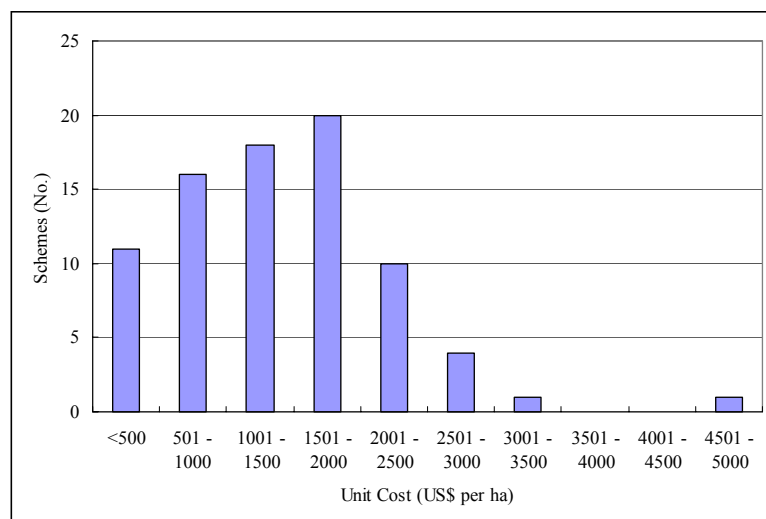
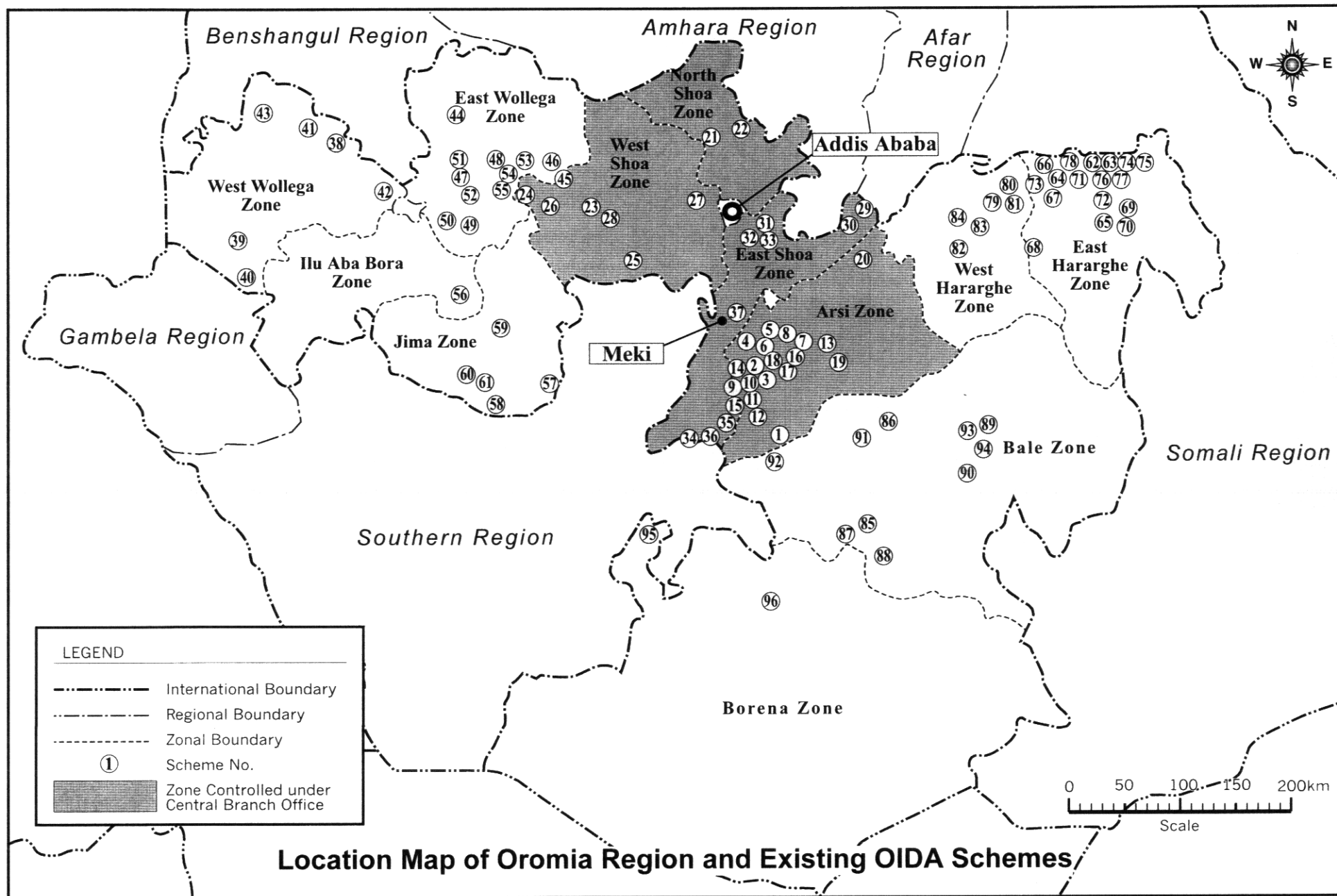


Figure X.3.4 Unit Cost of Irrigation Development



Irrigation Schemes in Oromia Region

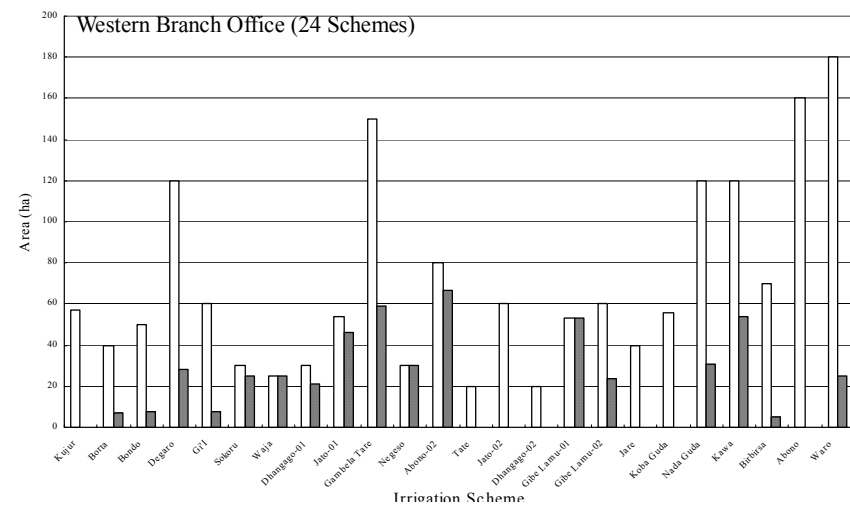
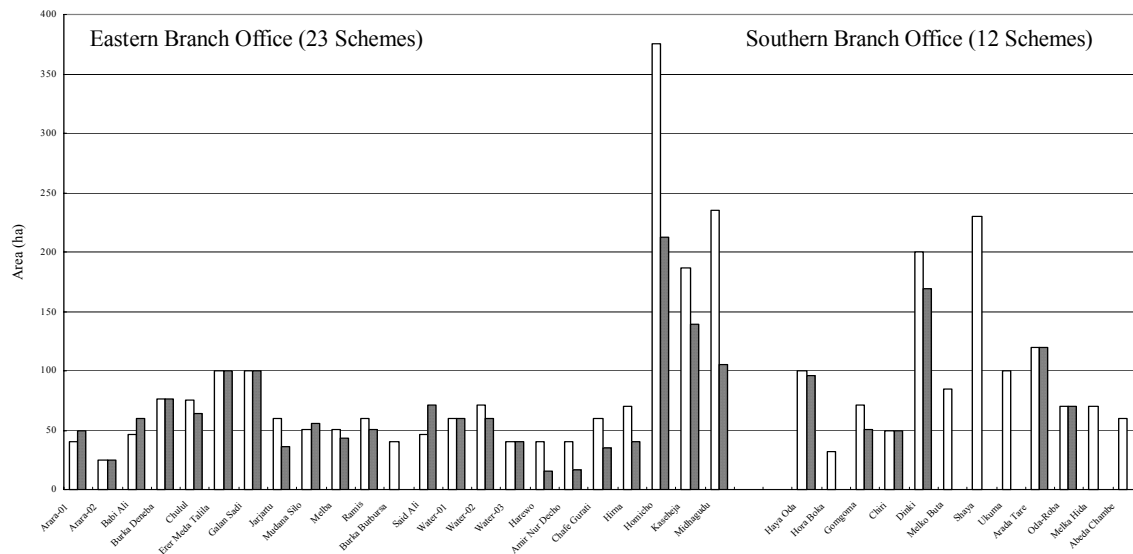
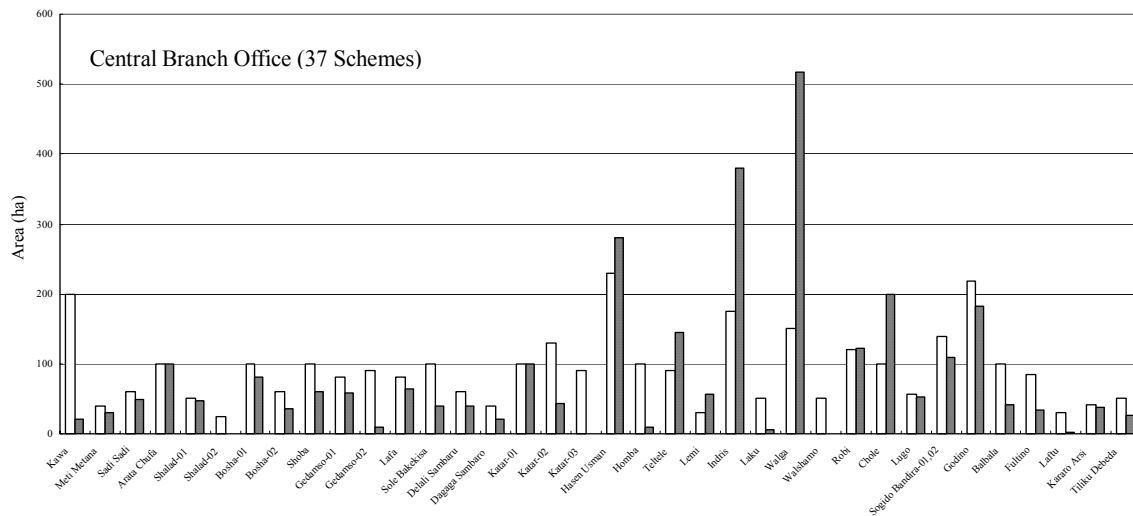
	Name of Scheme	Branch Office	Location		Command Area Development			Number of Beneficiaries			Construction Year (Completed)	WUA Status	Water Sources	Intake Structure
			Zone	District	Plan	Actual	%	Plan	Actual	%				
1	Kawa	Central Branch	Arsi	Gedeb	200.00	20.00	10.0	500	80	16.0	1985	C	River	Pump & Headworks
2	Meti Metana	Central Branch	Arsi	Nunesa	40.00	30.40	76.0	160	140	87.5	1993	C	River	Headworks
3	Sadi Sadi	Central Branch	Arsi	Nunesa	60.00	49.80	83.0	221	221	100.0	1995	C	Spring	Headworks
4	Arata Chufa	Central Branch	Arsi	Zuway Dugda	100.00	100.00	100.0	317	317	100.0	1993	A	River	Headworks
5	Shalad-01	Central Branch	Arsi	Tiyo	50.00	47.00	94.0	196	184	93.9	1995	A	Spring	Headworks
6	Shalad-02	Central Branch	Arsi	Tiyo	25.00	0.00	0.0	100	0	0.0	1995	Not Active	Spring	Headworks
7	Bosha-01	Central Branch	Arsi	Tiyo	100.00	80.00	80.0	233	320	137.3	1993	C	Spring	Headworks
8	Bosha-02	Central Branch	Arsi	Tiyo	60.00	35.00	58.3	220	140	63.6	1994	C	Spring	Headworks
9	Shobo	Central Branch	Arsi	Munesa	100.00	60.00	60.0	279	270	96.8	1993	C	Spring	Headworks
10	Gedamso-01	Central Branch	Arsi	Munesa	80.00	57.60	72.0	250	73	29.2	1996	C	River	Headworks
11	Gedamso-02	Central Branch	Arsi	Munesa	90.00	9.90	11.0	320	20	6.3	1997	C	River	Headworks
12	Lafa	Central Branch	Arsi	Munesa	80.00	63.50	79.4	150	140	93.3	1997	C	River	Headworks
13	Sole Bakekisa	Central Branch	Arsi	Tena	100.00	40.00	40.0	300	150	50.0	1998	C	River	Headworks
14	Delali Sambaru	Central Branch	Arsi	Munesa	60.00	40.00	66.7	160	164	102.5	1993	B	River	Headworks
15	Dagaga Sambaro	Central Branch	Arsi	Munesa	40.00	20.00	50.0	60	40	66.7	1996	B	River	Headworks
16	Katar-01	Central Branch	Arsi	Tiyo	100.00	100.00	100.0	400	120	30.0	1987	D	River	Headworks
17	Katar-02	Central Branch	Arsi	Tiyo	130.00	43.00	33.1	200	200	100.0	1993	D	River	Headworks
18	Katar-03	Central Branch	Arsi	Tiyo	90.00	0.00	0.0	360	0	0.0	1992	Not Active	River	Headworks
19	Hasen Usman	Central Branch	Arsi	Tena	230.00	280.00	121.7	527	1,000	189.8	1994	B	River	Headworks
20	Homba	Central Branch	Arsi	Merti	100.00	10.00	10.0	400	40	10.0	-	C	River	Headworks
21	Teltele	Central Branch	North Shoa	Detre Libanes	90.00	144.90	161.0	418	220	52.6	1996	C	Spring	Headworks
22	Lami	Central Branch	North Shoa	Yaya Gulale	30.00	56.20	187.3	200	225	112.5	1996	B	Spring	Headworks
23	Indris	Central Branch	Weat Shoa	Ambo	175.00	380.00	217.1	875	1,087	124.2	1993	B	River	Headworks
24	Laku	Central Branch	Weat Shoa	Bako-Tibe	50.00	6.00	12.0	40	9	22.5	1994	D	River	Headworks
25	Walga	Central Branch	Weat Shoa	Wanchi & Waliso	150.00	517.50	345.0	637	1,070	168.0	1998	B	River	Headworks
26	Walshamo	Central Branch	Weat Shoa	Chaliya	50.00	0.00	0.0	160	0	0.0	1995	D	River	Headworks
27	Robi	Central Branch	Weat Shoa	Meta Robi	120.00	123.00	102.5	410	410	100.0	1998	C	River	Headworks
28	Chole	Central Branch	Weat Shoa	Ambo	100.00	200.00	200.0	464	500	107.8	1996	B	River	Headworks
29	Lugo	Central Branch	East Shoa	Fentale	57.00	53.00	93.0	70	64	91.4	1996	B	River	Headworks
30	Sogido Bandira-01,02	Central Branch	East Shoa	Fentale	140.00	110.00	78.6	117	65	55.6	1998	C	River	Headworks
31	Godino	Central Branch	East Shoa	Adama	219.00	183.00	83.6	270	182	67.4	1996	C	River	Dam
32	Balbala	Central Branch	East Shoa	Adama	100.00	42.00	42.0	400	182	45.5	1996	C	River	Dam
33	Fultino	Central Branch	East Shoa	Adama	85.00	33.00	38.8	182	165	90.7	1998	C	River	Dam
34	Laftu	Central Branch	East Shoa	Shashamene	30.00	2.50	8.3	60	14	23.3	1996	D	River	Headworks

Irrigation Schemes in Oromia Region

	Name of Scheme	Branch Office	Location		Command Area Development			Number of Beneficiaries			Construction Year (Completed)	WUA Status	Water Sources	Intake Structure
			Zone	District	Plan	Actual	%	Plan	Actual	%				
35	Kararo Arsi	Central Branch	East Shoa	Arsi Negele	42.00	38.00	90.5	253	85	33.6	1990	B	River	Headworks
36	Tiliku Debeda	Central Branch	East Shoa	Arsi Negele	50.00	25.40	50.8	200	101	50.5	1995	D	River	Headworks
37	Meki-Zway	Central Branch	East Shoa	Meki & Duguda-Bor	1,500.00	33.00	2.2	3,375	132	3.9	1984	D	Lake	Pump
38	Kujur	Western Branch	West Walaga	Najo	57.00	0.00	0.0	110	0	0.0	1998	D	River	Headworks
39	Borta	Western Branch	West Walaga	Sayo	40.00	7.00	17.5	120	31	25.8	1996	D	River	Headworks
40	Bondo	Western Branch	West Walaga	Sayo	50.00	8.00	16.0	150	25	16.7	1995	D	River	Headworks
41	Degaro	Western Branch	West Walaga	Nadijo	120.00	28.00	23.3	296	120	40.5	1997	D	River	Headworks
42	Gi'I	Western Branch	West Walaga	Gimbi	60.00	7.50	12.5	228	26	11.4	1996	D	River	Headworks
43	Sokoru	Western Branch	West Walaga	Rharasibu	30.00	25.00	83.3	267	37	13.9	1997	C	River	Headworks
44	Waja	Western Branch	East Walaga	Limu	25.00	24.75	99.0	200	198	99.0	1996	D	River	Headworks
45	Dhangago-01	Western Branch	East Walaga	Jima-Rare	30.00	21.40	71.3	253	129	51.0	1995	C	River	Headworks
46	Jato-01	Western Branch	East Walaga	Jima-Rare	54.00	45.90	85.0	515	419	81.4	1994	D	River	Headworks
47	Gambela Tare	Western Branch	East Walaga	Guto-Wayu	150.00	58.80	39.2	235	86	36.6	1994	D	River	Headworks
48	Negeso	Western Branch	East Walaga	Bila-Sayo	30.00	30.00	100.0	128	160	125.0	1997	B	River	Headworks
49	Abono-02	Western Branch	East Walaga	Jima-Arjo	80.00	66.50	83.1	248	160	64.5	1995	B	River	Headworks
50	Tate	Western Branch	East Walaga	Leka-Dulacha	20.00	0.00	0.0	75	0	0.0	1993	In Active	River	Headworks
51	Jato-02	Western Branch	East Walaga	Guto-Wayu	60.00	0.00	0.0	157	0	0.0	1997	D	River	Headworks
52	Dhangago-02	Western Branch	East Walaga	Guto-Wayu	20.00	0.00	0.0	162	0	0.0	1997	D	River	Headworks
53	Gibe Lamu-01	Western Branch	East Walaga	Jima-Rare	53.00	53.00	100.0	250	54	21.6	1995	B	River	Headworks
54	Gibe Lamu-02	Western Branch	East Walaga	Bila-Sayo	60.00	23.40	39.0	250	37	14.8	1996	D	River	Headworks
55	Jare	Western Branch	East Walaga	Bila-Sayo	40.00	0.00	0.0	112	0	0.0	1998	In Active	River	Headworks
56	Koba Guda	Western Branch	Ilu Aba Bora	Gachi-Boracho	56.00	0.00	0.0	57	0	0.0	1996	In Active	River	Headworks
57	Nada Guda	Western Branch	Jima	Omo-Nada	120.00	31.00	25.8	340	48	14.1	1997	D	River	Headworks
58	Kawa	Western Branch	Jima	Dedo	120.00	54.00	45.0	270	54	20.0	1997	D	River	Headworks
59	Birbirs	Western Branch	Jima	Qarsa	70.00	5.20	7.4	150	52	34.7	1997	D	River	Headworks
60	Abono	Western Branch	Jima	Sayo Chokorsa	160.00	0.00	0.0	300	0	0.0	1994	In Active	River	Headworks
61	Waro	Western Branch	Jima	Dedo	180.00	25.00	13.9	300	40	13.3	1996	D	River	Headworks
62	Arara-01	Eastern Branch	East Harar	Kersa	40.00	50.00	125.0	276	276	100.0	1994	B	Spring	Headworks
63	Arara-02	Eastern Branch	East Harar	Kersa	25.00	25.00	100.0	100	100	100.0	1994	B	Spring	Headworks
64	Babi Ali	Eastern Branch	East Harar	Deder	46.00	60.00	130.4	130	220	169.2	1994	B	Spring	Headworks
65	Burka Deneba	Eastern Branch	East Harar	Gurawa	76.00	76.00	100.0	215	216	100.5	1997	B	Spring	Headworks
66	Chulul	Eastern Branch	East Harar	Goro Gutu	75.00	64.22	85.6	275	256	93.1	1996	C	Spring	Headworks
67	Erer Meda Talila	Eastern Branch	East Harar	Deder	100.00	100.00	100.0	550	550	100.0	1995	B	Spring	Headworks
68	Galan Sadi	Eastern Branch	East Harar	Melka Balo	100.00	100.00	100.0	360	360	100.0	1995	B	Spring	Headworks

Irrigation Schemes in Oromia Region

	Name of Scheme	Branch Office	Location		Command Area Development			Number of Beneficiaries			Construction Year (Completed)	WUA Status	Water Sources	Intake Structure
			Zone	District	Plan	Actual	%	Plan	Actual	%				
69	Jarjartu	Eastern Branch	East Harar	Gurawa	60.00	36.00	60.0	240	240	100.0	1996	B	River	Headworks
70	Mudana Silo	Eastern Branch	East Harar	Gurawa	51.00	56.00	109.8	120	175	145.8	1998	B	Spring	Headworks
71	Melba	Eastern Branch	East Harar	Meta	51.00	43.68	85.6	107	107	100.0	1998	B	Spring	Headworks
72	Ramis	Eastern Branch	East Harar	Gurawa	60.00	51.00	85.0	273	273	100.0	1996	B	River	Headworks
73	Burka Burbursa	Eastern Branch	East Harar	Deder	40.00	0.00	0.0	100	0	0.0	1995	In Active	Spring	Headworks
74	Said Ali	Eastern Branch	East Harar	Kersa	46.00	71.00	154.3	160	270	168.8	1994	B	Spring	Headworks
75	Water-01	Eastern Branch	East Harar	Kersa	60.00	60.00	100.0	130	130	100.0	1993	B	Spring	Headworks
76	Water-02	Eastern Branch	East Harar	Kersa	71.00	60.00	84.5	150	150	100.0	1994	B	Spring	Headworks
77	Water-03	Eastern Branch	East Harar	Kersa	40.00	40.00	100.0	260	260	100.0	1995	B	River	Headworks
78	Harewo	Eastern Branch	East Harar	Meta	40.00	15.00	37.5	133	60	45.1	1995	B	Spring	Headworks
79	Amir Nur Decho	Eastern Branch	West Harar	Tulo	40.00	17.00	42.5	80	28	35.0	1994	B	Spring	Headworks
80	Chafe Gurati	Eastern Branch	West Harar	Tulo	60.00	34.75	57.9	86	139	161.6	1995	B	River	Headworks
81	Hirna	Eastern Branch	West Harar	Tulo	70.00	40.00	57.1	80	63	78.8	1994	C	River	Headworks
82	Homicho	Eastern Branch	West Harar	Bedesa	375.00	212.00	56.5	600	200	33.3	1991	D	River	Headworks
83	Kaseheja	Eastern Branch	West Harar	Chiro	187.00	139.00	74.3	748	556	74.3	1992	D	River	Headworks
84	Midhagudu	Eastern Branch	West Harar	Tulo	235.00	105.25	44.8	250	53	21.2	1997	D	River	Headworks
85	Haya Oda	Southren Branch	Bale	Mana Angetu	100.00	96.04	96.0	220	178	80.9	1995	B	River	Headworks
86	Hora Boka	Southren Branch	Bale	Sinana Dinsho	32.00	0.00	0.0	183	0	0.0	1983	In Active	River	Free Intake
87	Gomgoma	Southren Branch	Bale	Mana Angetu	71.00	51.00	71.8	156	182	116.7	1994	C	River	Headworks
88	Chiri	Southren Branch	Bale	Mana Angetu	50.00	50.00	100.0	140	152	108.6	1994	B	River	Headworks
89	Dinki	Southren Branch	Bale	Ginir	200.00	168.75	84.4	450	265	58.9	1997	B	River	Headworks
90	Melko Buta	Southren Branch	Bale	Goro	85.00	0.00	0.0	340	0	0.0	1984	In Active	River	Headworks
91	Shaya	Southren Branch	Bale	Sinana Dinsho	230.00	0.00	0.0	271	0	0.0	1987	In Active	River	Headworks
92	Ukuma	Southren Branch	Bale	Dodola	100.00	0.00	0.0	400	0	0.0	1997	In Active	River	Headworks
93	Arada Tare	Southren Branch	Bale	Ginir	120.00	120.00	100.0	288	300	104.2	1996	B	River	Headworks
94	Oda-Roba	Southren Branch	Bale	Ginir	70.00	70.00	100.0	120	200	166.7	1997	B	River	Headworks
95	Melka Hida	Southren Branch	Borana	Galana-Abaya	70.00	0.00	0.0	136	0	0.0	1998	In Active	River	Headworks
96	Abeda Chambe	Southren Branch	Borana	Adola	60.00	0.00	0.0	200	0	0.0	1996	In Active	River	Headworks
Total					4,821.00	2,526.14	52.4	13,500	7,635	56.6				
Average					81.71	42.82	-	229	129	-				
Maximum					375.00	212.00	-	748	556	-				
Minimum					20.00	0.00	-	57	0	-				

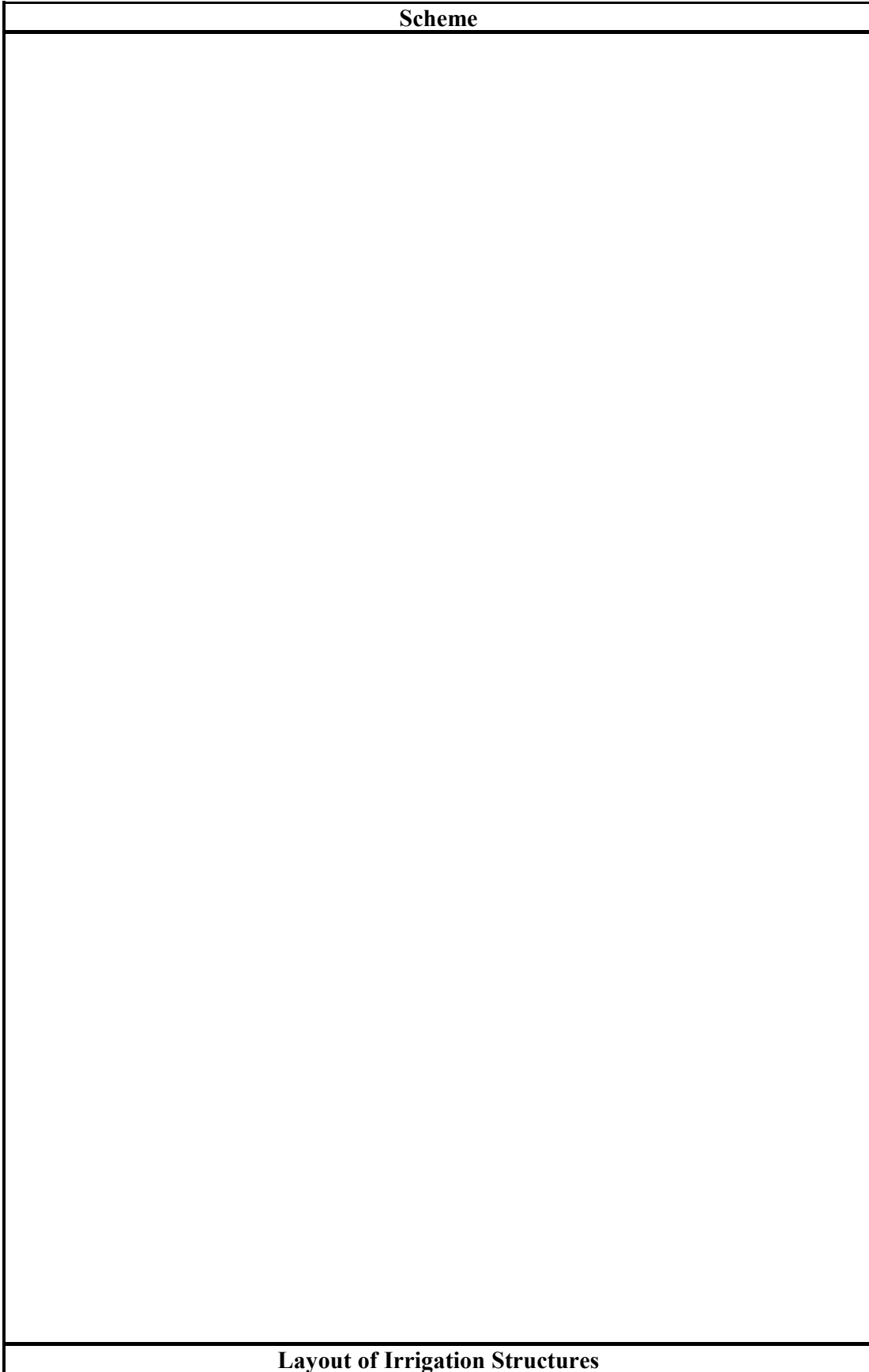


Plan Area and Actually Irrigated Area in OIDA 96 Schemes

Scheme					
General Information					
Surveyor :				Date :	
Name of P.A.					
Managing Organization	OIDA Central Branch office				
Water Source			Irrigation Method	Furrow, Border, Others (
Purpose & Beneficiary (Plan/Actual)	Irrigation	H/H	Irrigable Area	Design	ha
	Domestic	H/H		Actual	ha
	Livestock	H/H	(Percentage #DIV/0!	%)	
			Crops in Rainy Season	Teff	ha
				Maize	ha
			Wheat	ha	
Total Beneficiary (Plan/Actual)	Person			ha	
Year of Construction	(Ethiopian Calender)			ha	
	7 (Gregolian Calender)		Crops in Dry Season	Vegetable	ha
				Oilseeds()	ha
				Maize	ha
					ha
					ha
Information of Structures					
Intake Structure			Design Discharge	m ³ /sec	
Conveyance System	Main	km	Irrigation Canal Related Structures	Diversion box	nos.
	Secondary	km		Turn-out	nos.
	Tertiary	km		Off-take	nos.
	Field Canal	km			nos.
		km			nos.
Water Supply System	Water Point	nos.	Water Supply System Anothers		nos.
	Washing Basin	nos.			nos.
	Cattle Trough	nos.			nos.
Drainage System	Main Canal	km	Drainage Canal Related Structures		nos.
	Secondary	km			nos.
	Tertiary	km			nos.
	Field Ditch	km			nos.
		km			nos.
Another Structures					
Maintenance Needs and It's Cost					
No.	Description	Quantity	Unit Rate	Estimated Cost	
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
Total					
Other Information *					
1					
2					
3					
4					

Scheme				
General Information of WUA				
Number of WUA Member	Person / H.H.	Water Master	Exist	Not Exist
Year of Establishment	(E.C.)	By-law	Exist,	Not Exist
Year of Legal Registration	(E.C.)	Frequency of Farmers Meeting		times/year
		Record of Meeting	Exist,	Not Exist
Information about Sub-committee				
Name of committee				
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
Information of O&M Work and Cost Coverage				
Farmers Participation to Maintenum	Yes, No	Collection of O&M Charge	Yes,	No
Manual of O&M	Exist, Not Exist	If yes, how much is the charge	Birr	/year
		Bank Account	Have	Don't have
		Auditing activity	Yes,	No
Government Support to WUA				
Dispatch of DA from OIDA	Yes,	No		
Dispatch of DA from Bureau of Agriculture	Yes,	No		
Another Information, if any				
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
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24				

Scheme



Layout of Irrigation Structures

II. Status of the Scheme

- Observed major problems on head work

- Observed major problems on Main canal

- Observed major problems on Secondary, Tertiary, FD, and Drainage canals

- Observed major problems on structures; Division box, Drop, Turn outs, culverts, inverted syphons, etc.

III. Monitoring and Evaluation Information

- Is project design document available? yes / No
- Is project working drawing available? yes / No
- Design problems observed, (structures, gates)

- Construction problems observed

- Discuss quality of construction materials used during the project construction

- Is the project construction completed? yes / No
- If No, what are the remaining activities of construction

- Is there problem of siltation? yes / No
 - if yes, elaborate the major causes of siltation

- Are beneficiaries given training? Yes/No
- Do beneficiaries operate the scheme? Yes/No
- Do beneficiaries maintain the scheme? Yes / No
- If yes, is the maintenance, Routine / Annual / periodic etc.

If No. list the main reasons

- Presence of flow measuring structures. Yes/ No

- Discuss problems related to pumping

- Community Awareness of pumping operation

- Is training given to pump attendants

- Overall opinion of the beneficiaries on pumped irrigation

- Is DA house constructed in the project area? Yes / No

- Is DA provided a means of transportation? Yes / No

- Discuss the impact of DA on the project O and M of the scheme.

- Is there shortage of Agricultural Inputs Like ; fertilizer, seed, herbicides, etc.?
- Is there water shortage? Yes / No
- Is there disputes on water use among beneficiaries? Yes / No
How are disputes resolved.

- Is there conflict between upstream and Downstream residents? Yes / No
 - Is there market problem?

- Do beneficiaries get market information? Yes/No
 - Is the scheme fully under utilization ? Yes/ No
- If the answer is No, What are the Major reasons for the failure to utilize the scheme fully?

- Is the system layout matching with the beneficiaries needs? Yes/no
- Discuss Level of technical support given so far to the to the beneficiaries

- Is the proposed cropping pattern maintained on the scheme? Yes/No
- Is there symptom of salinity on the scheme? Yes/No

- Crop yield from Irrigated land

<u>Crop type</u>	<u>Yield(Qt)</u>
Maize	
Potato etc.	

- Discuss the condition of harvesting, transporting and storage facilities.

- Overall contribution of the scheme towards the improvement of the life of the beneficiaries.

Note:

1. Identify the maintenance need that can be done by the communities as (minor) and implementing agency as (major) and prepare the bill of quantities.
2. The layout of the scheme should have detailed features on the scheme, like Division boxes, Turnouts, Drops, etc.