CHAPTER 4 FORMULATION OF THE WOREDA DEVELOPMENT PLANS

4.1 Participatory Planning Processes for Draft Woreda Development Plans

4.1.1 Methodology

(1) Schedule and Participants

After the workshops at analytical stage from April through September 2008, a series of workshops for Woreda development (upstream planning) and project designing were held at Woreda level. The first 2-day workshops in October, November and December 2008 were for 1) sharing sector-wise Woreda development plans, 2) identifying approaches, strategies, programs and projects for the development of the said Woreda, and 3) prioritization of all the approaches, strategies, programs and projects. During the second 1 or 2-day workshops, 1) the list of approaches, strategies, programs and projects were amended and new project ideas were included, 2) prioritization was amended, and 3) outlines of the priority projects were designed.

Table 4.1.1 Schedule of the Participatory Planning Workshops for Woreda Development Plans

Stage	Date	Workshops	Tools
Analytical Stage	April 2008	1-day Regional Level Workshop	Situation Analysis and Scoring
			Problem Analysis and Ranking
	April - July 2008	2-day Woreda Level Workshops	Situation Analysis and Scoring
			Problem Analysis and Ranking
	April - July 2008	1-day Small Watershed / Kebele Level Workshops	PRA / RRA tools
			Problem Analysis and Ranking
	August - September 2008	By the Study Team	Common Problem Tree
Upstream Planning Stage	October - December 2008	2-day Woreda Level Workshops	Sharing of Sector-wise Woreda Development Plans
			Approaches, Strategies, Programs and Projects
	January - March 2009	1 or 2-day Woreda Level Workshops	Amendment of Approaches, Strategies, Programs and Projects
Project Designing Stage			Project Designing of Priority Projects
	April 2009	*Small Watershed / Kebele Level Workshops (planned)*	*Action Plans*
Monitoring Stage	*2009 - 2010*	*Small Watershed / Kebele Level Workshops (planned)*	*Participatory Monitoring*
Evaluation Stage	*2010*	*1- day Small Watershed / Kebele Level Workshops (planned)*	*Participatory Evaluation*
	2010	*2- day Woreda Level Workshops (planned)*	*Participatory Evaluation*
	2010	*1-day Regional Level Workshop (planned)*	*Participatory Evaluation*

For the 2-day Woreda level workshops in October – December 2008, the numbers of participants ranged from 26 in Legambo Woreda to 46 in Kobo Woreda and the total number of participants was 322. The number of organizations participated ranged from 7 in Kobo Woreda to 12 in Gidan Woreda and the Agriculture Office accounted for 64.6 %.

Table 4.1.2 Participants of 2-day Woreda level Workshops in October – December 2008

Zone / Woreda / Organization	North Gonder						North Wollo									South Wollo									Total		
	Ebinate			Simada			Bugena			Gidan			Kobo			Mekedela			Legambo			Aregoba					
	M	F	Total	M	F	Total	M	F	Total	M	F	Total	M	F	Total	M	F	Total	M	F	Total	M	F	Total	M	F	Total
Agriculture	25	1	26	22	5	27	26	1	27	22	3	25	29	3	32	26	2	28	14	2	16	25	2	27	189	19	208
Health	2	0	2	1	0	1	2	1	3	2	0	2	0	0	0	1	0	1	0	1	1	2	0	2	10	2	12
Education	1	0	1	1	0	1	2	0	2	1	0	1	0	0	0	0	0	0	1	0	1	2	0	2	8	0	8
Capacity Building	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	0	1	2	0	2
Information	1	0	1	1	0	1	2	0	2	2	0	2	2	0	2	1	0	1	1	0	1	0	0	0	10	0	10
Women Affair	1	1	2	0	1	1	1	1	2	0	1	1	0	1	1	1	0	1	0	1	1	0	0	0	3	6	9
HIV/AIDS Prevention and Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	0	1
Land Administration and Environmental Protection	2	0	2	2	0	2	1	0	1	3	0	3	3	0	3	1	0	1	1	0	1	2	0	2	15	0	15
Water Resource	3	0	3	1	0	1	3	0	3	2	0	2	3	0	3	2	0	2	1	0	1	2	0	2	17	0	17
Small and Micro Enterprise	0	0	0	0	1	1	2	0	2	1	0	1	2	0	2	1	0	1	1	0	1	2	0	2	9	1	10
Youth, Culture & Tourism	0	0	0	0	1	1	0	0	0	1	0	1	0	0	0	0	0	0	1	0	1	1	0	1	3	1	4
Administration	1	0	1	1	0	1	1	0	1	4	0	4	0	0	0	1	0	1	1	0	1	2	0	2	11	0	11
Public Relation	0	0	0	1	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0
Finance and Economy	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	1	4	0	4
Zone	3	0	3	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0	3	0	3	9	0	9
ORDA	1	0	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
Total	**42**	**2**	**44**	**30**	**8**	**38**	**40**	**3**	**43**	**40**	**4**	**44**	**42**	**4**	**46**	**36**	**2**	**38**	**22**	**4**	**26**	**43**	**2**	**45**	**295**	**29**	**322**

The numbers of participants for the 1 or 2-day Woreda level workshops in January – March 2009 ranged from 30 in Ebinate Woreda to 63 in Aregoba Woreda and the total number of participants was 411. The number of participants increased from the previous workshops except Ebinate Woreda, where the number decreased by 14. The number of organizations participated ranged from 7 in Ebinate Woreda to 13 in Aregoba Woreda and the Woreda Agriculture Office accounted for 65.5 %.

Table 4.1.3 Participants of 1 or 2-day Woreda level Workshops in January – March 2009

Zone / Woreda / Organization	South Gonder						North Wollo									South Wollo									Total		
	Ebinate			Simada			Bugena			Gidan			Kobo			Mekedela			Legambo			Aregoba					
	M	F	Total	M	F	Total	M	F	Total	M	F	Total	M	F	Total	M	F	Total	M	F	Total	M	F	Total	M	F	Total
Agriculture	18	3	21	31	4	35	33	2	35	36	2	38	38	3	41	36	3	39	25	1	26	32	2	34	249	20	269
Health	2	0	2	3	0	3	3	0	3	2	0	2	0	0	0	3	0	3	1	1	2	5	2	7	19	3	22
Education	0	0	0	0	0	0	2	0	2	3	1	4	2	0	2	2	0	2	2	0	2	5	0	5	16	1	17
Capacity Building	0	0	0	1	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2	0	2	4	0	4
Information	2	0	2	1	0	1	0	1	1	1	0	1	1	0	1	1	0	1	0	0	0	1	0	1	7	1	8
Women Affair	0	0	0	0	1	1	0	1	1	1	0	1	0	1	1	2	0	2	0	1	1	0	1	1	3	5	8
HIV/AIDS Prevention and Control	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	1	0	0	0	1	0	1	2	1	3
Land Administration and Environmental Protection	1	0	1	3	0	3	1	1	2	1	0	1	0	0	0	2	0	2	4	0	4	4	0	4	16	1	17
Water Resource	0	0	0	2	0	2	2	0	2	1	0	1	2	0	2	2	0	2	2	0	2	2	0	2	13	0	13
Small and Micro Enterprise	0	0	0	1	1	2	0	0	0	1	0	1	1	0	1	2	0	2	2	0	2	2	0	2	9	1	10
Youth, Culture & Tourism	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	1	0	1	1	0	1	1	0	1	5	0	5
Administration	2	0	2	1	0	1	6	3	9	1	1	2	0	0	0	1	0	1	0	0	0	1	0	1	12	4	16
Public Relation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Finance and Economy	1	0	1	1	0	1	2	0	2	1	0	1	1	0	1	0	0	0	1	0	1	0	0	0	7	0	7
Zone	0	0	0	3	0	3	0	0	0	0	0	0	4	0	4	0	0	0	0	0	0	2	0	2	9	0	9
ORDA	1	0	1	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	3	0	3
Total	**27**	**3**	**30**	**47**	**6**	**53**	**51**	**8**	**59**	**49**	**5**	**54**	**51**	**4**	**55**	**53**	**3**	**56**	**38**	**3**	**41**	**58**	**5**	**63**	**374**	**37**	**411**

(2) Methodology

2-day Woreda Level Workshops in October – December 2008

1) Sharing Sector-wise Woreda Development Plans

The representatives of major sectors in the Woreda were asked to present current sector-wise Woreda development plans. The sectors were crop production, livestock development, food security programs and projects, water resource development, health, small and micro enterprises, education etc. Also best practices and key factors, and Participatory Rural Appraisal (PRA) at watershed / Kebele level workshops were reviewed.

2) Identifying Approaches, Strategies, Programs and Projects

The Study Team showed the common problem tree which covers all the direct causes and other major causes identified at the regional level workshop, eight Woreda level workshops and eight watershed / Kebele level workshops.

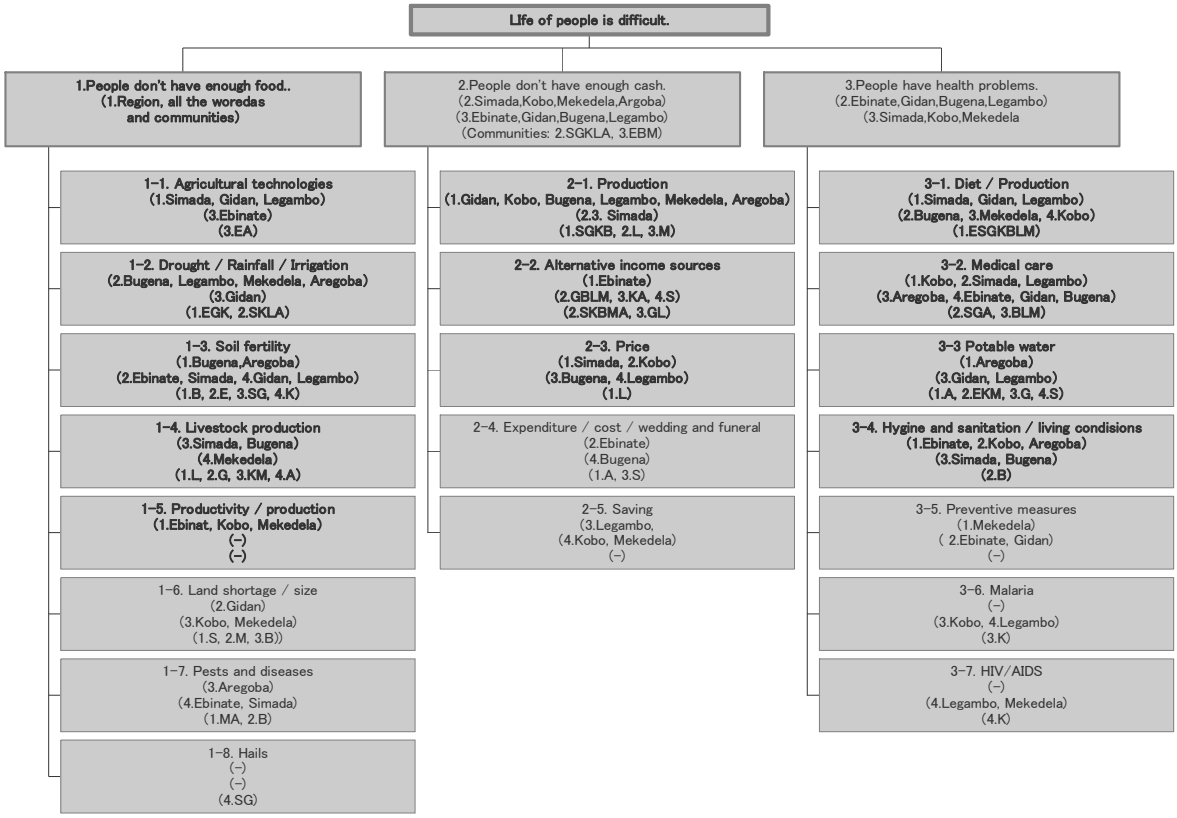


Figure 4.1.1 Common Problem Tree for the Eight Woredas of Amhara Region

Then an objective tree was drawn from the common problem tree for the said Woreda by rewriting direct causes into approaches, secondary causes into strategies to solve the problems. This was not the end of this process, however. Since problem analysis was by and for the final beneficiaries, the approaches rewritten from the direct causes were also demand-driven, in other words, specific and in short-term. Fundamental, cross-cutting and long-term issues and solutions were usually at the bottom of the objectives tree. Therefore, the participants were asked to identify supply-driven approaches, or major government services. Standard supply-driven approaches were education, infrastructure, environment and gender.

Table 4.1.4 Demand-driven Approaches and Supply-driven Approaches

Demand-driven Approaches		
Food	Cash	Health

Supply-driven Approaches			
Education	Infrastructure	Environment	Gender

After the participants had reached a consensus on approaches, they were divided into sub-groups according to sectors, discussed and identified strategies under each approach, then programs under each strategy and projects under each program. Brief description of the projects, project status and necessary expertise were also clarified.

3) Prioritization of Approaches, Strategies, Programs and Projects

All the strategies, programs and projects under each approach were prioritized and presented by the sub-groups and approved by the floor. Priority by agro-climatic zone was also given. After all the approaches, strategies, programs and projects were discussed, the priority of the approaches was

given by the floor. The following is an example of the output and are the first and second strategies under Approach I. Agricultural and livestock production of Ebinate increased.

Table 4.1.5 An Example of Approaches, Strategies, Programs and Projects

Approach	Strategy / Priority		Program / Priority		Project / Priority		Description / Components	Project Status	Priority by Agro-Climatic Zone (●=Top, ◎=Medium, ○=Lower)			Expertise (○=Already have, ■=Need to get)
									Dega	Wolna Dega	Kolla	
I. Agricultural and livestock production of Ebinate increased.	**I.1** Farmers use modern farming practices.	2	**I.1-1** Farmers adopt on capacity to new technologies increased.	1	**I.1-1-1** Farmers field day.	2	Participant identification / Technology selection / Explanation for participants / Participant view about field day	Ongoing	●	●	●	■ Communication skill
							Exhibition in model works / panel discussion.	New Idea				
					I.1-1-2 FTC will be managed.	1	Equipment & material supply / Farmer selection / Teachings aid supply / Demonstration site / Experience sharing / Conduct training.	Ongoing	●	●	●	○ Natural resource management skill / Crop management skill / Livestock management skill
							Graduation.	Pipeline				
							Audio visual supply.	New Idea				
					I.1-1-3 Input supply increased.	3	Technology identification by agro-ecology / Infrastructure – building, road	Ongoing	●	●	●	○ Marketing skill
							Adoption trial	New Idea				■ IT skill
	I.2 Soil fertility improved.	1	**I.2-1** Organic fertilizer increase.	1	**I.2-1-1** Nursery establishment for green material.	2	Site selection & program / Identification of planting material / Employ workers / Implementation	Ongoing	●	●	◎	■ Agroforestry management skill
					I.2-1-2 Compost production increase.	1	Cow dung collection / Green material collection / Preparation site / Collection of soil & ash / Other material collection	Ongoing	●	●	◎	○ Agronomic skill

1 or 2-day Woreda Level Workshops in January – March 2009

1) Amendment of Approaches, Strategies, Programs and Projects

Since many participant said there was not enough time for the workshops in October – December 2008 and also some representatives of key sectors were absent in a few Woredas, more time was spent to think over the approaches, strategies, programs and projects. Emphasis was put on new ideas rather than ongoing projects in these workshops.

2) Amendment of Prioritization

To share objective views about prioritization, the Study Team showed the result of prioritization at the previous eight Woreda-level workshops. Also to get a sound consensus for prioritization, the 10 seeds tool was used for voting and the vote was repeated if necessary.

3) Project Designing of Priority Projects

For a selected project in each approach, the outline of the project was discussed and designed by sub-groups. Voting for prioritization of the selected projects was also done using the 10 seeds tool. An example of project design is shown below.

Table 4.1.6 An Example of Project Design

Program/ project Title	***Special need education***			
Priority in approaches	People of Mekdela are educated			
Priority in Strategies	People get basic education			
Linkage to Other areas	Agriculture, Health			
Priority Division(s)	Dega	Woina Dega	Kolla	
	○	◎	●	
Target groups	1000 disabled students			
Implementing agency	Education, Health Office and Save the Children UK			
Collaborators	Community, Woreda administration and Education Office			
Objectives	Disabled children have equal rights to education			
Rationale	Disabled children are isolated from the community			
Project Implementation	2010 2011 2012 2013 2014 2015 ← →			

Expected output	**Development Indicators**
• Disabled students get education	• 1000 children

Major activities corresponding to the expected output	Total cost	Expected source
• Building comfortable class room • Purchasing comfortable furniture • Fulfill disable students materials like Braille, and eyeglasses	1,500,000 birr 1,100,000 birr 1,300,000 birr	JICA, Save the children, Regional government & Woreda Education Office
Total	**3, 900,000 birr**	
Project risks: Collaborators may not support the project		

(3) An Overview of the Workshop Results

As shown in Table 4.1.7, food was the highest priority in all the Woredas (34.1 % to 24.7 %) except Aregoba (22.3 %), where infrastructure (27.6 %) was No.1. Health was the second highest priority in Ebinate, Bugena, Kobo and Mekedela Woredas (19.3 % to 16.6 %), while it was the third highest priority in Simada, Gidan, Legambo and Aregoba Woredas (18.6 % to 14.9%). Infrastructure was high priority in Aregoba, Simada, Mekedela and Bugena Woredas (27.6 % to 13.8 %), but not so high in Kobo, Ebinate and Legambo Woredas (10.8 % to 7.8 %). Environment was relatively high in Legambo, Kobo and Bugena Woredas (16.7 % to 14.8 %), but very low in Aregoba and then Ebinate (4.8 % and 9.7% respectively). Gender (8.3 % to 2.2 %) and cash (11.3 % to 7.3 %) were relatively low in all the Woredas.

Table 4.1.7 Priority of Approaches

Zone	South Gonder						North Wollo									South Wollo								
Woreda	Ebinate			Simada			Bugena			Gidan			Kobo			Mekedela			Legambo			Aregoba		
Approach	Rank	No. of Votes	%	Rank	No. of Votes	%	Rank	No. of Votes	%	Rank	No. of Votes	%	Rank	No. of Votes	%	Rank	No. of Votes	%	Rank	No. of Votes	%	Rank	No. of Votes	%
Food	1	90	30.0%	1	146	30.4%	1	143	26.4%	1	125	24.7%	1	148	29.6%	1	156	34.1%	1	103	26.4%	2	120	22.3%
Health	2	58	19.3%	3	74	15.4%	2	95	17.5%	3	83	16.4%	2	91	18.2%	2	76	16.6%	3	58	14.9%	3	101	18.7%
Infrastructure	5	30	10.0%	2	86	17.9%	4	75	13.8%	2	94	18.6%	6	39	7.8%	3	63	13.8%	6	42	10.8%	1	149	27.6%
Environment	6	29	9.7%	4	55	11.5%	3	80	14.8%	4	68	13.4%	3	74	14.8%	4	48	10.5%	2	65	16.7%	6	26	4.8%
Education	3	36	12.0%	5	53	11.0%	5	68	12.5%	5	61	12.1%	4	71	14.2%	5	47	10.3%	4	49	12.6%	4	86	16.0%
Cash	4	33	11.0%	6	35	7.3%	6	42	7.7%	6	43	8.5%	5	52	10.4%	6	46	10.0%	5	44	11.3%	5	45	8.3%
Gender	7	24	8.0%	7	31	6.5%	7	39	7.2%	7	32	6.3%	7	25	5.0%	7	22	4.8%	7	29	7.4%	7	12	2.2%
Total		300	100.0%		480	100.0%		542	100.0%		506	100.0%		500	100.0%		458	100.0%		390	100.0%		539	100.0%

In the food approach, which was the highest priority in the seven Woredas, **"Water / Soil moisture / Irrigation / Water resource"** was the Number one strategy in Kobo, Mekedela and Aregoba Woredas.

"Modern farming / Modern agriculture / Technology" was Number one in Ebinate, Gidan and Legambo Woredas, while **"Soil fertility"** was Number one in Bugena Woreda.

Table 4.1.8 Priority Strategies in Food Approach

Zone	South Gonder		North Wollo			South Wollo		
Woreda / Strategy	Ebinate	Simada	Bugena	Gidan	Kobo	Mekedela	Legambo	Aregoba
Water / Soil moisture / Irrigation / Water resource	3	5	3	–	1	1	3	1
Modern farming / Modern agriculture / Technology	1	2	7	1	3	5	1	4
Soil fertility	2	3	1	2	2	4	8	2
Improved varieties / New food crops / Imputs	5	6	–	3	4	–	2	–
Livestock health / management / Vet. Service	6	4	2	6	8	8	4	6
Pest and disease / Crop protection	4	12	5	4	5	–	–	3
Livestock food / Forage	7	9	4	5	6	9	5	9

In the health approach, **"Balanced diet"** was the Number one strategy in Simada, Gidan and Legambo Woredas, **"Medical care"** was the Number one strategy in Ebinate and Bugena Woredas, **"Potable water"** was the Number one strategy in Kobo and Aregoba Woredas, and "Water borne disease controlled" was the Number one strategy in Mekedela Woreda. **"Hygiene and sanitation"** and **"Preventive measure / Immunization"** were also priority strategies in many Woredas.

Table 4.1.9 Priority Strategies in Health Approach

Zone	South Gonder		North Wollo			South Wollo		
Woreda / Strategy	Ebinate	Simada	Bugena	Gidan	Kobo	Mekedela	Legambo	Aregoba
Balanced diet	4	1	–	1	–	–	1	–
Medical care	1	3	1	4	4	5	3	5
Potable water	–	–	–	–	1	–	2	1
Water borne disease controlled	–	5	2	3	5	1	–	–
Hygiene and sanitation	3	2	–	–	2	2	–	2
Preventive measure / Immunization	2	–	–	2	–	4	4	3
Malaria controlled	–	4	–	–	3	3	–	–

"Road" was the priority strategy in many Woredas and then **"Water"** and **"Telecommunication"** followed.

Table 4.1.10 Priority Strategies in Infrastructure Approach

Zone	South Gonder		North Wollo			South Wollo		
Woreda / Strategy	Ebinate	Simada	Bugena	Gidan	Kobo	Mekedela	Legambo	Aregoba
Road	2	1	2	1	1	1	2	1
Water	1	2	1	–	4	2	1	–
Telecommunication	3	4	3	2	2	4	3	3
Electricity	4	3	4	3	3	3	4	2
Postal	–	–	–	–	–	–	–	3
Market	–	–	–	–	5	–	–	–

4.1.2 Ebinate Woreda

Sector-wise Development Plans of Ebinate

(1) Agriculture and Rural Development

① Cooperative development
1) Awareness creation for farmers about idea of cooperative
2) Capacity building for management committee
3) Marketing research
4) Feasibility study for cooperatives
5) Strengthening and organizing of cooperatives
6) Strength the service of cooperatives – provision of inputs, market information and information service

② Crop production and protection
1) Increase the productivity of crops by using fertilizer and compost
2) Integrated Pest Management System
3) Drainage of verity soil
4) Decreasing acidity of soil by lime
5) Pest protection and assessment
6) Protection of dangerous weeds
7) Follow up pre and post harvesting lost by traditional and modern method
8) Expand vegetable production during dry season
9) Irrigation development
10) Market information- dissemination to the farmers, organizing coop marketing and provision of credit to cooperative
11) Expansion of infrastructure for market access
12) Quality control of products and store management

③ Extension
1) SMS (Subject Matter Specialists) visit at all Kebeles
2) Building of FTC and equip it
3) Technical support to the farmers
4) Training of farmers
5) Seed multiplication and livestock

④ Natural resource
1) Identification of 163 watersheds and make it ready to development
2) Implementation of 7 watersheds at Woreda level
3) Biological and physical conservation structures
4) Amendment of terracing
5) Mountain afforestation and privatization
6) Gully rehabilitation- 70 ha is identified
7) Afforestation program
8) Preparation of nurse site at cooperative, model and private
9) Afforestation of tree for fuel wood, construction and pole
10) To increase forest coverage by 2.8% at Woreda level

⑤ Livestock
1) To decrease free grazing
2) Forage development activity
3) Animal health care

(2) Women Affairs

① Gender mainstreaming at all sector office
② To organize women and to assist them to participate at development activity
③ Awareness creation to the community about gender
④ To decrease women work load by using improved technology
⑤ Promote women's right
⑥ Assist women's to be the beneficiary of credit
⑦ Avoiding and prevention of HTP

⑧ To promote work division

(3) Small and Micro Enterprises

① To create job opportunity for youngsters
② Strengthening of enterprises
③ Provide training for youth, women's and traders, the courses are:
  1) Business management
  2) Construction
  3) Tailoring
  4) Food processing
④ Provision of credit service
⑤ Provide plot of land for shopping construction
⑥ Market linkage at different areas/ bazaar, exhibition
⑦ Assist them to use technology
⑧ Technical support to traders by extension agent
⑨ Collaboration with TVTC and agriculture/ to share technology

(4) Environmental Protection and Administration

① Training of farmers about the laws of the land
② Land certification
③ Communal land certification
④ Institution land certification
⑤ Land ownership certification temporary and fixedly
⑥ Provide land to landless youth

(5) Water Resource Development

① Construction of potable water:
  1) Hand dug well
  2) Spring development
  3) Bore hole
② Water and health sanitation
③ Administration and maintenance of water center
④ Increase water coverage from 40% to 58.2%.

(6) Culture and Tourism

① To keep monasteries and historical materials
② Create awareness to the community
③ Registration of monasteries, historical books
④ Controlling of historical materials
⑤ Follow up hotels and institutions
⑥ Avoid HTP
⑦ Establish public library
⑧ Educate the communities by music and drama

(7) Information

① Opening of panel discussion
② Support orphanages
③ Preparation of booklet, magazines and leaflets
④ Promotion of best practice of sector offices
⑤ Preparation of news
⑥ Information documentation
⑦ Establishment of mini media
⑧ Public relation activities

(8) Finance and Development

① Collection of revenue from- farmers, civil servants and traders

② Allocation of budget properly
③ Follow up the budget of donors and government

(9) Education

① Increase the quality of education/ improve the combination of student to teacher, student to book, etc.
② Increase education coverage / education for all

(10) Health

① Preventive measures
② Establishment of health packages
③ Treatment measures

PRA (Participatory Rural Appraisal) Review in Ebinate

① Back ground of the population identified
② In the previous time, there was forest and soil fertility is high
③ Currently, low forest and low production
④ The community prioritizes the problems
⑤ Wealth ranking identified: rich / average / poor / poorest of the poor
⑥ Community mapping done
⑦ Livestock clinic and schools are too far from the watershed and rising of inputs are the major problem.

Good Practices and Key Factors in Ebinate

(1) Small and Micro Enterprises

① Job opportunity created for youth on construction activity: youth association.
② Urban agriculture working well: by fruit and vegetable production / by organizing the youth (This association has good capital and return for their credit).
③ Off farm activities. (Farmers are assisted to participate at IGA. Training provided. Credit provided. Follow up and evaluation is good.): Support of the government to youth association is good. / Provision of credit, training and working land. Continuous consultancy service. / Market net work created. / The sector has good attention from the government.

(2) Agriculture and Rural Development

① Area closure and privatization: Population density / Unemployment / Productivity of land is low. / Awareness creation is given. / Market value tree selected. / By laws prepared.
② Fuel saving stove: Deforestation / Shortage of fuel wood / Health problem of women / Work load / Time saving / Training / Input provision by agriculture office, GTZ, MERET project
③ Bee keeping practice improved: Low quality productivity of honey / Migration of bee colony / Rate of mortality of bee is high. / Occurrence of diseases and pests / Lack of construction material/hive / Management problem/ inspection, harvesting and protection / Plantation of bee forage / Provision of modern hive

(3) Education

① Alternative basic school is constructed.
② Adult education and kindergarten is opened.
③ Ethical and civics policy implemented well.
④ Student enrollment increase by 80.5%: 73 formal schools are opened. / 64 satellite schools opened. / Gross enrollment of student at zone level is ranked first.

(4) Environmental Protection and Land Administration

① Land certification is given.
② Awareness creation given on land policy.
③ Privatization of degraded land is given to youth association.
④ Environmental protection and watershed management is under taken at one Kebele.
⑤ Multipurpose training is given, like natural resource management, forestry and livestock.

(5) Health

① Focusing on preventive measures / 560 family heads are graduated.
② VCT
③ TB patients are treated.
④ Active community participation at the construction of 33 health posts: Presence of health packages. / Capacity building of health agents. / People awareness increased. / Working in integration with other sectors to create awareness. / Low health center coverage. / Community desire.

(6) Women affair

① Gender club established: Unable to implement what they get training. / There is no discussion between females.
② Establishment of female advisory committee at schools: Low participation of women at the schools. / Facing problems at the schools.
③ Training was given for husband and wife about gender: Females are economical dependant. / Work load of women. / There was no equal rights b/n male and female.

Draft Woreda Development Plan of Ebinate

Table 4.1.11 Summary of Woreda Strategies of Ebinate

Approach	Strategy / Priority	
I. Agricultural and livestock production of Ebinate increased. (90/300: 30.0%)	**I.1** Farmers use modern farming practices.	2
	I.2 Soil fertility improved.	1
	I.3 Soil moisture and water increase.	7
	I.4 Pest & diasese occurrence controlled.	5
	I.5 Improved varieties.	3
	I.6 Livestock health improved.	6
	I.7 Livestock forage development improved.	8
	I.8 Livestock management improvement.	4
	I.9 Animal breed improvement.	9
II. Health status of Ebinate people improved. (58/300: 19.3%)	**II.1** People get proper medical services	3
	II.2 Preventive health care practices improved.	2
	II.3 Hygiene and sanitation condition improved.	3
	II.4 People get enough balanced diet.	4
III. People of Ebinate are educated. (36/300: 12.0%	**III.1** People get basic education.	1
	III.2 People get vocational trainings.	4
	III.3 People get adult education.	3
	III.4 People get higher education.	2
IV. People of Ebinate get enough cash. (33/300: 11.0%)	**IV.1** Small & micro enterprise expansion.	1
	IV.2 Market access to sell produces improved.	2
V. Infrastructures of Ebinate constructed. (30/300: 10.0 %)	**V.1** Water supply increased.	2
	V.2 Road construction increased.	1
	V.3 Telecommunication Increased.	3
	V.4 Supply of electricity increased.	4
VI. Environment of Ebinate protected. (29/300: 9.7 %)	**VI.1** Natural resources conserved.	3
	VI.2 Land shortage reduced.	4
	VI.3 Law and regulation on environmental rehabilitation and protection.	2
	VI.**4**Awareness of all levels of students about environment protection increased.	1
VII. Gender issues incorporated to all activities in Ebinate (24/300: 8.0%)	**VII.1** Gender mainstreaming increased.	1
	VII.2 Women empowerment increased.	2

Draft Priority Project List of Ebinate

① Modern livestock management practice introduction/ Training and experience sharing on livestock management (Vote: 54 / 301 = 17.9%)
② Supply of market oriented seeds/ strengthening research and extension linkage (Vote: 49 / 301 = 16.3%)
③ Child education/ kindergarten establishment (Vote: 36 / 301 = 12.0%)
④ Capacity building and training teachers in environmental sciences (Vote: 35 / 301 = 11.6%)
⑤ Creating financial institution (bank, credit association, micro finance) (Vote: 35 / 301 = 11.6%)
⑥ Knowledge towards preventive measures increased/ Awareness creation on HIV/ AIDS (Vote: 32 / 301 = 10.6%)
⑦ Ownership of property of women increased/ Involving women in developmental activities (Vote: 32 / 301 = 10.6%)
⑧ Expansion of hydroelectric power / Dam construction (Vote: 28 /301 = 9.3%)

4.1.3 Simada Woreda

Sector-wise Development Plans of Simada

(1) Agriculture

① Agriculture led development
② Food Security
③ Integrated watershed management approach
④ Effective use of rain and other water sources to maximize production and productivity
⑤ Participatory Extension
⑥ Package implementation
   1) Work process base
   2) Community based development units
   3) Capacity building
⑦ Income generating Activities
⑧ Encompassing cross cutting issues
   1) Environment
   2) Gender
   3) HIV/AIDS
⑨ Generally Increasing crops and livestock production & productivity through:
   1) Efficient utilization of ground water
   2) Using natural fertilizer (compost and others)
   3) Vertisol Management (draining excess water)
   4) Using enough and necessary inputs
   5) Using productive local and foreign breeds
   6) Focus on forage development

(2) Education

① Keeping quality of education at all levels through (75%)
   1) Increasing participation level of all concerned bodies
   2) Strengthening government, community, administrators and teachers' integration
② Increasing coverage/ Participation (25%)
   1) All 7 years of age and above children shall attend school
   2) As principle, children should only travel not more than 3 km
   3) Satellite and alternative schools are providing service other than regular schools. (There are 51 Satellite schools, 47 basic schools and 93 Regular Schools)
③ Education office believes that it's very difficult to bring all over development with illiterate farmers. So farmers should be educated so as to bring development.
   1) Adult education is being given in all Kebeles
④ Generally educating farmers through:
   1) Providing education to children
   2) Establishing and strengthening Adult training canters
   3) Regarding securing quality education, different packages are designed and activities are being carried out.
⑤ Capacity building to teachers; Continuous Professional Development (CPD)
⑥ Creating efficient citizen with full knowledge of government constitution
⑦ Establishing and strengthening Information Communication Technologies (ICT)
⑧ Hiring enough teachers
⑨ Increase teacher –student combination

(3) Health

① Focusing on preventive measures through:
   1) Health extension agent employment
   2) Decreasing children and mothers mortality
   3) Community participation
   4) Pit latrine construction
   5) Hygiene and Sanitation
   6) Malaria, Tuberculosis and HIV/AIDS prevention

7) Surveillance – assessment of FP (polio)

② Building enough health centers and health posts (1 health post for 5000 people and 1 health center for 25000 people)
- 32 health posts constructed in the Woreda
- 3 health centers constructed

③ Provision of house to house health services by health extension agents

(4) Water Resources

① Exploiting ground water
② Increasing water coverage of Woreda (currently 28 %)
③ Increasing water supply to villages, institutions to create a healthy nation
④ (With few amount of money, a lot can be done (At least we can provide a water pipe line.)
⑤ Capacity building of water supply institutions with technologies and /or techniques, short term trainings and finance

(5) Women Affairs

① Increasing women's leadership and implementation capacity
② Making all plans gender sensitive
③ Increasing participation and capacity of women in all development issues, economy and political issues in the Woreda
④ Preventing harmful traditional practices
⑤ Implementing Women's development package
1) Making them land owners
2) Equal participation of women.
⑥ Working on early marriage, Raping and 'telefa' (taking girls as wife by force)

(6) Road

① The uneven and jagged geographical situation of the Woreda becomes a problem for the road network from Woreda to Kebele and Kebele to Kebele
② Increasing road network of Woreda via Kebele and Woreda via zone
③ Road construction with community participation
④ Budget supported road construction
⑤ In order to facilitate the market communication, construction of bridge on the way to Estie is a supposed plan. However, there is a constraint of budget
⑥ Construction of road and bridge through Woiraye watershed which is a shortcut path from the Woreda to Bahir Dar.
⑦ Construction of footpaths

(7) Environment Protection Land Administration

① Decreasing conflicts risen among farmers regarding farmlands
② Facilitating recording, measure and giving patent ownership to decrease conflict amongst farmers
③ Increasing awareness to develop sense of ownership
④ Environmental protection through
1) Keeping diversification of environment (life and ecology)
2) Establishing school clubs to disseminate information, technologies and extension
⑤ Capacity building of the office technically, materially and finance
1) In schools, there's environmental club to create awareness
2) Office furnishing
3) Technical support
4) Budget support

(8) Small and Micro Enterprises

① Organizing Jobless youths to create jobs and income generating activities
② Facilitating credit access to youths and urban dwellers to start business
③ Decreasing unemployment rate
④ Working with ACSI (Amhara Credit and Saving Institution) to get credit

(9) Public Relations

① Creating conducive working environment through proper public relation to maximize commencements of government policies and strategies of all sectors
② Playing role in facilitating for the implementation of preventive measures amongst the community
③ Proper community mobilization
④ Facilitating forums, experience sharing tours
⑤ Capacity building – conference, training (main actors: 200-300 model farmers)
⑥ Facilitating on the discussion of health, education, agriculture and other issues
⑦ There should be a movement in each sector to bring the desired development
⑧ Experience sharing forums on FTCs
⑨ Solving awareness problems found within the community
⑩ Generally the office fights against awareness problems

(10) Information

① Doing in integration with public relation
② Facilitating experience sharing & field visits and disseminating feed backs
③ Working on bringing better understanding
④ Experience sharing
⑤ Media coverage
    1) Press
    2) Festivals
    3) Panel discussion
    4) Study tour
    5) Farmers' festivities
    6) Exhibitions
⑥ Collection, analyzing and dissemination of current government development, economy and political standing points to the community through different communication media

PRA (Participatory Rural Appraisal) Review in Simada

① Community discussed about the objective of the PRA
② Community divided in to different groups to do describing history of Kebele, proximity of sectors to the community, development and social maps. In describing history of Kebele critical problem trends examined and solutions proposed
    1) Deforestation
    2) Soil erosion
    3) Population growth
    4) Disease occurrence and others
③ Other groups done development map and social map, level of proximity of sectors to the community
④ In addition to PRA watershed experts went to the community, identified major problems and put solutions
⑤ Key Issues
    1) Sustainability
    2) Integration

Good Practices and Key Factors in Simada

(1) Good Practices

① Soil and water conservation
② Gully rehabilitation
③ Hill side terrace construction and integrating with forage development
④ Compost preparation
⑤ Developing water collection schemes/using springs
⑥ Vertisol management/Water draining with Broad Bed Maker
⑦ Producing market oriented crops (Haricot bean)
⑧ Irrigation

⑨ Modern bee hive
⑩ Afforestation (community participation and private seedling production)
⑪ Community participation in both labor and cash contribution to construct satellite and regular schools and health posts
⑫ Facilitating trainings and credit services for income generating activities for women and youths
⑬ Hill side privatization for youths
⑭ Improved stove
⑮ The following are best in Woiraye watershed
- Apiculture /modern bee hive
- Community participation in constructing buildings (satellite schools, health posts.)
- Hill side privatization for youths
- Producing market oriented crops (Haricot bean)
- Natural Resource management (Hill side terrace)
- Vertisol management in the Kebele of the watershed

(2) Good Practices by Woreda Officers

① Apiculture /modern bee hive by Woreda office of Agriculture targeted all Kebeles: On time training to target farmers, awareness creation through conference, enough input supply (modern bee hive from the regional government), farmers interest work interest of the community eg. Muja Robit high school constructed.
② Community participation in constructing buildings (satellite schools, health posts) by Education office, Health office and other community mobilizing sectors targeted Wogeda town to construct high school: Community interest to build schools and health posts. The depth/ thoroughness of the problem by itself. / Schools - for example in some Kebeles, it takes a day to get a high school. / Health centers, in some Kebeles, there exists very high death rate.
③ Hill side privatization for youths by Land use office targeted five Kebeles (012, 015, 016, 017 and 018): Land less and jobless youths increased thus, job opportunity creation need arisen.
④ Producing market oriented crops (Haricot bean) by Office of Agriculture targeted Kolla Kebeles of the Woreda and Kolla part of the watershed: High yield, market price good because Market need (the price of haricot bean is high) / Farmers sell haricot bean for cooperatives (in 15 Kebeles). / Farmers by themselves are becoming effective without the support. / Help of any experts from the Woreda or development agents. / Cooperatives sell for unions.
⑤ Natural Resource management (Hill side terrace) by Office of Agriculture targeted specially in Woiraye Kebele: Proper problem identification conducted. / Exact problem of the community such as Lack of fuel wood, grazing area are identified. / The community is initiated to work/ participation. / In Woiraye Kebele, 98 modern bee hives distributed. / Vertisol drainage conducted. / 60% of Vertisol overage of the Woreda is in this Kebele. / 56 farmers participated in black soil management. / Community discussion held among “Black Soil Development Group) i.e. there are small teams in it. / Each farmer contributes 1 birr per month.
⑥ Vertisol management by Office of Agriculture targeted 012 and other Kebeles: Vertisol productivity decreased, Good demonstration, proper site selection, experience sharing amongst farmers.

(3) Good Practices by DAs of Woiraye Watershed

① About 98 modern bee hives distributed.
② Vertisol management implemented in the Kebele of watershed in a better way: Vertisol association established / Members contribute 1 birr per month / Members will be supported to buy plowing oxen.
③ Almost all integrated watershed management activities don to conserve natural resources.
④ High community participation for natural resource management thus common understanding established.
⑤ There is starting of implementation of Haricot bean production.

Draft Woreda Development Plan of Simada

Table 4.1.12 Summary of Woreda Strategies of Simada

Approach	Strategy / Priority		Approach	Strategy / Priority	
I. Agricultural production of Simada is high. (146/480: 30.4%)	**I.1** Agricultural system is modern.	2	**IV. Environment situation of Simada is improved. (55/480: 11.5%)**	**IV.1** Natural environment is improved.	1
	I.2 Soil fertility is improved.	3		**IV.2** Other environmental issues are improved.	2
	I.3 Farmers use enough modern animal husbandry.	4	**V. People of Simada get good education. (53/480: 11.0%)**	**V.1** People get basic education.	1
	I.4 Farmers use enough agricultural inputs.	6		**V.2** People can access higher education.	2
	I.5 Intensive use of land increased.	7	**VI. People of Simada have enough cash. (35/480: 7.3%)**	**VI.1** Farmers sell their produce at good price.	1
	I.6 Farmers get enough improved varieties of crops.	8		**VI.2** People practice enough I.G.A.s.	4
	I.7 Pest and disease prevalence controlled.	12		**VI.3** People use available cash effectively.	6
	I.8 Livestock disease prevalence decreased.	10		**VI.4** People sell livestock at good price.	5
	I.9 Forage production increased.	9		**VI.5** People get enough credit access.	2
	I. 10 Access of Irrigation.	5		**VI.6** People get necessary off-farm activity inputs.	3
	I.11 Farmers use enough improved livestock breeds.	11	**VII People of Simada have enough awareness on Gender. (31/480: 6.5%)**	**VII.1.** Women equality improved.	1
	I.12 Livestock production increased.	13		**VII.2.** Women empowerment improved.	3
	I.13 Strategy disseminating new extension approach.	1		**VII.3.** Bad cultures reduced.	2
II. Infrastructures of Simada are constructed. (86/480: 17.9%)	**II.1** Road is improved.	1			
	II.2 Electricity is available.	3			
	II.3 Telecom. is available.	4			
	II.4 Water supply is improved.	2			
III. Health condition of Simada people is High. (74/480: 15.4%)	**III.1** People have enough balanced diet.	1			
	III.2 People got proper medical care.	3			
	III.3. Level of private hygiene and sanitation increased.	2			
	III.4. Malaria infestation decreased.	4			
	III.5. Waterborne disease controlled.	5			
	III.6. TB / HIV decreased. (Prevalence)	6			

Draft Priority Project List of Simada

① Utilization of all sources of water for crop production / Dam construction (Vote: 94 / 460 = 20.4%)
② Road construction (Vote: 83 / 460 = 18.0%)
③ Water and soil conservation works to prevent the soil from erosion (Vote: 79 / 460 = 17.2%)
④ Animal breeding (Vote: 77 / 460 = 16.7%)
⑤ Enough medical schools are instructed (Vote: 65 / 460 = 14.1%)
⑥ Division of labor reduced / Experience sharing (Vote: 37 / 460 = 8.0%)
⑦ Transportation facility/ Farmers have enough market place (Vote: 25 / 460 = 5.4%)

4.1.4 Bugena Woreda

Sector-wise Development Plans of Bugena

(1) Education

① Ensuring quality of education
   1) Continuous professional development (CPD)
   2) Consolidating civics and ethical education
   3) School improvement Program (conducive teaching environment, educational management,)
   4) Information Communication Technology (ICT)
   5) Curriculum improvement

6) Strengthening educational administration and organization(Awareness creation and mobilization of supervisors and directors)

② Increasing coverage of education
1) Coordination of benefit packages of teachers
2) All students who are eligible to education shall go to school (plan 100%, currently 78%)
3) Strengthening mobilization committee

(2) Agriculture and Rural Development

① Ensuring food security
1) Increasing Commercialized Agricultural activities
2) Increasing natural resource conservation and rehabilitation
3) Safety net implementation
4) Resettlement
5) Credit access

② Water/ moisture conservation and harvesting
③ Effective extension package (minimum package, Family package)
④ Organizing and strengthening community based organizations &cooperatives (increase bargaining power)
⑤ Increase livestock production and productivity (Cattle, sheep & goat, poultry, apiculture)
⑥ Livestock health improvement
⑦ Increasing crop production and productivity (proper agronomic practice, Integrated Pest Management)
⑧ Increasing fruit and vegetable production & productivity
⑨ Increasing forest development and Agro- forestry practices
⑩ Capacity building to farmers using Farmer training centre (awareness creation, training,)
⑪ Human resource development
⑫ Mineral and energy alternative source
⑬ Environmental Impact Assessment (EIA)
⑭ Land use system
⑮ Rural road construction
⑯ Combating harmful traditional practices in collaboration with concerned sectors
⑰ Increasing access of women's benefiting packages

(3) Health

① Increase health centre construction
② Implement health extension packages (Identification of model farmers)
③ Implementing preventive measures
④ Malaria control
⑤ HIV/AIDS control
⑥ Family planning
⑦ Decreasing mother and child mortality (immunization,)

(4) Small and Micro Enterprises

① Organizing jobless people
② Training access facilitation and/ or provision on different income generating activities
1) Food processing
2) Fattening, poultry,
3) Micro business/petty trade
4) Wood work, metal work, weaving, tailoring

③ Market access facilitation
④ On job training/ lesson provision on micro business management

(5) Environmental Protection and Land Administration

① Contributing in increasing agricultural production and productivity through environmental protection and rehabilitation
② Decreasing environmental warming (forestation,)

③ Land certification
④ Land administration
⑤ Hillside distribution to landless people
⑥ Environment policy advocacy
⑦ Establishing and strengthening environmental clubs in schools
⑧ Environmental Impact Assessment (EIA)
⑨ Working in collaboration with agriculture and other sectors to protect environment

(6) Women Affairs

① Gender mainstreaming
② (Incorporating all gender issues in development, political and social issues)
③ Women empowerment
④ Awareness creation to the community about gender issues
⑤ Increasing women participation in leadership role in development, social and political issues

(7) Administration

① Creating conducive environments to ensure and Increase good governance
② Assigning Kebele administrators
③ Playing leading role to implement development, social and political policies and strategies in integration
④ Coordinating all development and social sectors to work in collaboration and integration

(8) Water Resource Development

① Increasing Woreda potable water converge
② Water point construction (Hand dug well, spring development, bore hall,)
③ Establish water committee
④ Woreda town (Ayna town) water supply
⑤ Mobilizing funds /resources to construct water scheme

(9) Cooperatives

① Establishing new cooperative
② Strengthening cooperatives (leadership improvement, increasing capital)
③ Stabilizing market inflation
④ Inputs and technology provision
⑤ Credit access facilitation
⑥ Effective store management

Participatory Rural Appraisal Review in Bugena

① Community discussion conducted
② Problems identified and prioritized
③ Environment issues discussed
④ Wealth ranking done
⑤ Social and development maps done

Good Practices and Key Factors in Bugena

(1) Education

① Community participation to construct class rooms: 1) Student involvement increased. 2) Teaching learning environment became worst. 3) High community interest.
② Establishing community mobilization committee to send their children to school: Increasing awareness of community about the use of education
③ Fund raising to orphans to attend school: Increasing of drop out students due to lack of learn instruments/ materials
④ Establishing education quality control committee: 1) Students result become low. 2) Government focus.
⑤ Implementing agriculture, health and other sector packages in integration: Enough sect oral packages designed.

(2) Agriculture

① Apiculture: 1) Availability of potential environment. 2) Relatively SWC done. 3) Bee colony price is affordable (50-100 birr). 4) Inputs availability. 5) Extension done well. 6) Farmers getting equivalent price for honey production. 7) Productivity and quality increased due to using modern systems and inputs (honey processing material). 8) Enough training given to farmers by World Bank and Food security budget.
② Soil and water conservation: 1) Availability of enough stone to construct bund. 2) Topography nature. 3) Special attention given by government (industrial material provision, budget allocation,). 4) Farmers get training and learn from the outcome/ impact. 5) Production and productivity improved. 6) Rehabilitation of natural resource increased. 7) Integrated activity implementation system. 8) Free grazing reduced due to area closure. 9) Increased sense of ownership. 10) Increased ground water discharging. 11) Strong community by laws and government laws. 12) Effective extension system. 13) Experience sharing across the region.
③ Organizing different groups and training provision on different income generating activities (Food processing, petty trade, wood work, metal work): 1) Experience sharing amongst themselves and neighboring Woredas. 2) Effective training provided on small business management, finance management, client management & identification before implementation. 3) Advertising produces. 4) Change visible.
④ Awareness creation to the community on cooperative system (group dynamism): 1) High contribution of cooperatives to social and economic. 2) Lessons provided to students and students tell effectively to their family.
⑤ Spring development: 1) Critical problem of the community. 2) Relatively small cost. 3) People awareness on potable water relatively high.

(3) Health

① Family planning: 1) Enough health extension agents in each Kebele (house to house, community discussion). 2) Training provision on family planning package to farmers.
② Immunization to mothers and children: 1) Critical problem of the community. 2) Mother and disease prevalence reduced.
③ HIV/AIDS blood test: 1) Critical problem of the community (high epidemic of disease). 2) People awareness increased.

(4) Environment, Land Administration and Women Affairs

① Forestation: 1) Environmental issue. 2) Attention given by all concerned bodies and government.
② Land certification: 1) Sense of ownership increased. 2) Possession right done.
③ Celebrating world environment day (June 5): Good means to create awareness to the community.
④ Vacant land distribution giving priority to women and handicapped: 1) Women are half of the community. 2) Government constitution.
⑤ Increasing women membership in land administration.
⑥ Monitoring and evaluation of land administration.
⑦ Training provision to women protecting task force: 1) Critical problem of the community. 2) Government focus.
⑧ Establishing and strengthening gender clubs at school: Easy to aware students.
⑨ Combating Harmful Traditional Practices: 1) HTP committee established. 2) Awareness creation to the community. 3) Working in integration with the justice sector.
⑩ Improved stove: 1) Critical problem of the community. 2) Environmental issue.

Draft Woreda Development Plan of Bugena

Table 4.1.13 Summary of Woreda Strategies of Bugena

Approach	Strategy / Priority	
I. Agricultural production of Bugena improved. (143/542: 26.4%)	I.1 Soil fertility improved.	1
	I.2 Soil moisture is improved.	3
	I.3 Modern farming practice increased.	7
	I.4 Pest and disease controlled.	5
	I.5 Shortage of land reduced.	10
	I.6 Intensive farming carried out by farmers.	9
	I.7 Livestock health improved.	2
	I.8 Enough livestock food available.	4
	I.9 Livestock by-product improvement increased.	6
	I.10 Modern livestock management increased.	8
II. Health status of Bugena people improved. (95/542: 17.5%)	II.1 Water borne disease controlled.	2
	II.2 People get proper medical care.	1
	II.3 Combating harmful traditional practices (HTP) increased.	3
III Environment of Bugena protected. (80/542: 14.8%)	III.1 Natural resources conserved.	1
	III.2 Environmental pollution protected.	3
	III.3 Water / moisture for production increased.	2
IV. Bugena people's access to infrastructures increased. (75/542: 13.8%)	IV.1 Road construction increased.	2
	IV.2 Tele-communication structure construction increased.	3
	IV.3 Electricity supply increased.	4
V. People of Bugena are educated. (68/542: 12.5%)	V.1 Access to education increased.	2
	V.2 Quality of education increased.	1
VI. People of Bugena have enough cash. (42/542: 7.7%)	VI.1 Job opportunity to people improved.	1
	VI.2 Farmers sell their produce at good price.	4
	VI.3 Controlling high cost of living increased.	3
	VI.4 People's saving practice improved.	2
VII. Gender issues incorporated to all activities in Bugena. (39/542: 7.2%)	VII.1 Women empowerment increased.	2
	VII.2 Women labor work reduced.	1

Draft Priority Project List of Bugena

① Urban water supply construction and sanitation (Vote: 131 / 543 = 24.1%)
② Modern Poultry Production (Vote: 80 / 543 = 14.7%)
③ Forest Management (Vote: 73 / 543 = 13.4%)
④ Farmers produce quality produce of (crops, fruits, vegetables) / Supply inputs like fertilizer improved seeds and other technologies (Vote: 59 / 543 = 10.9%)
⑤ People get Basic Education/ Special Need Project (Vote: 55 / 543 = 10.1%)
⑥ Promote non timber forest product (NTFP) (Vote: 54 / 543 = 9.9%)
⑦ Enhancing Awareness of the people about gender equality (Vote: 50 / 543 = 9.2%)
⑧ Solar energy power project (Vote: 41 / 543 = 7.6%)

4.1.5 Gidan Woreda

Sector-wise Development Plans of Gidan

(1) Agriculture and Rural Development

① Increasing agricultural productivity by 13% by using proper land productivity and conservation practice
② Livestock productivity by using improved livestock variety
③ Livestock health care
④ Increasing honey production by introducing improved hives
⑤ Improvement of soil acidity
⑥ Increasing of crop productivity by using improved seed variety
⑦ Natural resource management:
   1) Moisture retention
   2) Water harvesting
   3) Forestation
   4) Establishment of nurseries
   5) Soil and water conservation practices
⑧ Grazing land management with forage development by increasing community awareness and internal law of the community

⑨ High land fruit production
⑩ Extension communication system
   1) Participatory approach
   2) Using FTC
   3) 80% practical and 20% theory on 3 issues, at natural resource, agronomy and livestock production
⑪ Organizing and strengthening of cooperatives

(2) Environmental Protection and Land Administration

① Construction of small irrigation
② Water harvesting
③ Rehabilitation of degraded land by indigenous tree
④ Establishment of environmental club at the school
⑤ EIA at all Kebeles
⑥ Awareness creation on acts and rules of land
⑦ Gender equality and HIV/AIDS

(3) Water Resource Development

① Increasing water coverage by 70 % by using hand dug well and spring development
② Strengthening of community participation
③ Strengthening of water committee

(4) Small and Micro Enterprises

① Organizing and strengthening of the existing enterprises
② Training on income generating activities
③ Direct support for women and poor peoples
④ Awareness creation
⑤ Facilitate plot of land and credit
⑥ Promoting off farm activities: tailoring, construction and wood work

(5) Information

① Promotion of the best practice of agriculture, education, health and other sector offices by mass media and pamphlet paper
② Preparation of video conferences
③ Preparation of booklet to the community
④ Preparation of questionnaire to solve the problem of good governance

(6) Education

① Increase school enrollment
② Expanding of quality education

(7) Health

① Decreasing maternal and child mortality
② Employing preventive measures
③ Follow up the construction of toilet room at the community

(8) Women affairs

① Making women economically benefited
② Avoiding HTP
③ Establishing gender club
④ Making sure equality of women at work division and property division

PRA (Participatory Rural Appraisal) Review in Gidan

① The name of the watershed is Mewat (Tejno).

② The area covers 290 ha.
③ The majority of agro ecology is Dega.
④ The topography is 45 – 60% sloppy.
⑤ Soil and water conservation practices are going on.
⑥ Majority of the people use livestock production.
⑦ The number of family heads is 300. And the farming area covers 50 – 60 hectare.
⑧ Currently all of the DAs are new to the watershed because the previous ones already left the office.

Good Practices and Key Factors in Gidan

(1) Agriculture and Rural Development

① Grazing land management with forage development: Community awareness / Prohibited by laws
② High land fruit production: Provision of seedlings / Training / Environment
③ Soil and water conservation practice

(2) Education

① School construction and class room extension: Establishment of parent - teacher association (PTA). / The increase of awareness within the community
② Public participation to buy reference books: Awareness created at the society

(3) Health

① Common and private latrine constructed: Creating awareness of the community / Increase of epidemic diseases / Environmental pollution

(4) Small and Micro Enterprises

① Increase of capitals in short period of time: Provision of training and credit / Facilitating of market place / Provision of business development service through selecting youngsters from the community / Problems are shortage of income, shortage of knowledge and training.

Draft Woreda Development Plan of Gidan

Table 4.1.14 Summary of Woreda Strategies of Gidan

Approach	Strategy / Priority		Approach	Strategy / Priority	
I. Agricultural production of Gidan increased. (125/506: 24.7%)	I.1 Crop production and productivity increased.	1	IV. Environment of Gidan protected. (68/506: 13.4%)	IV.1 Natural resources conserved.	1
	I.2 Pest and disease occurrence controlled.	3		IV.2 Environmental pollution protected.	4
	I.3 Farmers get access to enough improved varieties.	2		IV.3 Enough water is available for production.	2
	I.4 Livestock production increased.	4		IV.4 Undulated lands managed properly.	3
II. People of Gidan's access to infrastructures increased. (94/506: 18.6%)	II.1 Infrastructures constructed. II.1.1 Road II.1.2 Telecommunication II.1.3 Electricity	1	V. People of Gidan are educated. (61/506: 12.1%)	V.1 Access to education to all people increased.	1
				V.2 Education quality improved.	2
III. Health status of Gidan people improved. (83/506: 16.3%)	III.1 People get enough balanced diet.	1	VI. People of Gidan have enough cash. (43/506: 8.5%)	VI.1 Farmers have enough alternative income source.	1
	III.2 Water borne disease controlled.	3		VI.2 Farmers saving practice improved.	5
	III.3 Preventive measure practicing increased.	2		VI.3 People sell their produce at good price.	3
	III.4 People get proper medical care.	4		VI.4 Farmers produce market oriented crops (cash crops).	2
				VI.5 People get enough credit access.	4
			VII. Gender issues incorporated to all activities in Gidan. (32/506: 6.3%)	VII.1 Women empowerment increased.	1

Draft Priority Project List of Gidan

① Livestock breed improved / Improved breed introduction to farmers (Vote: 105 / 510 = 20.6%)
② Upgrading of road construction (Vote: 80 / 510 = 15.7%)

③ Seed multiplication and delivery of improved varieties/ Delivery of new improved varieties (Vote: 77 / 510 = 15.1%)
④ People get enough basic education/ Feeding program in the school (Vote: 65 / 510 = 12.7%)
⑤ People get enough knowledge on preventive measure/ Motivation of people who do proper care in environmental hygiene (Vote: 65 / 510 = 12.7%)
⑥ Gender mainstreaming improved/ Build women's' capacity (Vote: 46 /510 = 9.0%)
⑦ Soil erosion reduced/ Flood control & increased drainage capacity (Vote: 43 / 510 = 8.4%)
⑧ People attitude towards saving practice improved/ Establishment of Ekub (Vote: 29 / 510 = 5.7%)

4.1.6 Kobo Woreda

Sector-wise Development Plans of Kobo

(1) Agriculture and Rural Development

① Working on ensuring food security
② Increasing crop and livestock production and productivity
③ Water/ Moisture harvesting and Utilizing water resources efficiently & effectively
④ Allocating 3-5 experts at Kebele level and implementing watershed based activities
⑤ Implementing effective extension system

(2) Environment Protection and Land Administration

① Effective monitoring of all agriculture and other activities being implemented environmentally friendly.
② Increasing sense of ownership through efficient land administration and management system
③ Identifying and studying investment areas
④ Land certification

(3) Water Resource Development

① Increasing water coverage of the Woreda (currently it's 36 %) ; constructing water points like Hand dug well, spring development, bore hall for every minimum 50 house holds
② Improving hygiene and sanitation

(4) Information

① The first priority of information office is to introduce the policies and strategies of the government
② Promotional activities from Woreda to Woreda and Kebele to Kebele
③ Awareness creation and disseminating development and other issue information to the community on time through effective communication medias
④ Facilitating panel discussions, experience sharing on development and other issues

(5) Women Affairs

① Increasing women's participation on economic, political and social issues
② Awareness creation and combating harm full traditional practices
③ Mainstreaming all gender issues in all activities
④ Scaling up women's role in every activity

(6) Small and Micro Enterprises

① Facilitating credit access
② Effective monitoring for the implementations of off farm activities by the trainees
③ Creating and facilitating market access
④ Integrated work with donors and other institutions
⑤ Minimizing unemployment rate and poverty reduction by establishing new micro enterprises and strengthening the existing ones
⑥ Conducting off farm activities

1) Conducting need assessment
2) Provide training on book keeping and business administration at TVET (Technical and Vocational Training Center) / CSTC (Community Skill Training Center)
3) For instance, in "Teakeze Gedam", 10 thousand birr given for some beggars after conducting need assessment in the area, then training was given on 'Weaving'. Currently, they have a capital of more than 2 million Birr.

⑦ Integration work with municipality, Trade and Industry and others
⑧ Providing BDS (Business Development Service)
⑨ Solving market access problem through exhibition, Bazaar and other mechanisms

(7) Health

① Focusing and implementing preventive measures for the diseases like HIV/AIDS, malaria
② Organizing and strengthening health extension system and agents
③ Awareness creation on environmental and personal hygiene & sanitation (toilet use, feeding habit
④ Constructing health posts, centers and strengthening

(8) Education

① All eligible children should access education.
② Capacity building of teachers, maintaining proper ratios like teacher to student, student: book for quality education
③ Constructing schools (primary, alternative and satellite schools) to increase the coverage of education
④ Equipping newly constructed schools
⑤ Provision of books and other supporting materials
⑥ Creating conducive environment for children
⑦ CPD program for teachers
⑧ Organizing administrative bodies of schools
⑨ Making the teaching learning process effective
⑩ Civic and Ethical education
⑪ School construction by integration of; community, government, NGOs and other donors
⑫ Student parliament and school environmental clubs established
⑬ School ethics officers established: They control bad discipline, inform to respective bodies when early marriage is to be done.

PRA (Participatory Rural Appraisal) Review in Kobo

① Communicating with the community
② Data are collected.
③ Problems are identified.
④ Community divided in to different groups and did history of the Kebele, development & social maps, wealth ranking, proximity of each sector and social organization to the community
⑤ Solutions to the problems are proposed.
⑥ Watershed committee leaders are organized.

Good Practices and Key Factors in Kobo

① Collecting run off water to the farmlands (constructing cut off trench and water draining pond). Water way canal at amid watershed, gully rehabilitation conducted. River diversion to farms/ run off (75%of the farmers are benefited from this). Recharging runoff water: Lateral movement of water / ground water recharging; as a result product and productivity improved; Currently, research is being conducted to scale up these activities to other Woredas. (Reduce gully formation. / Moisture harvested. / Ground water recharged.): Late starting and early cessation of rain have an impact at grain filling stage, thus farmers developed high interest and experts endeavor to create awareness.

② Hen transferring package which has 4 stages and/ or beneficiaries. (Stage 1: 15- 20 farmers form group and will be given day old chickens; They grow them up to three months and identify male and female chickens. / Stage 2: Other farmers will be organized and receive male hen for meat purpose. / Stage 3: Other farmers receive female hen for egg purpose and produce eggs. / Stage 4: Other farmers again organized and receive eggs from the third beneficiaries and hatching using traditional or what ever incubation system; deliver day old chicks to other first stage beneficiaries.): Provisions of day old chick from Agriculture are not enough to meet farmers demand; Provision of this few numbers is even during summer when there is no enough food for hen and even human being. / Production of day old chick at Kombolcha ceased due to Salmonella disease; and hen transfer package is less cost as compared to Agriculture provision by bringing from Kombolcha.

③ Seed multiplication. (C1 seed provided from research center and C2 seed produced. / Model and interesting farmers selected to multiply C2 seed.): Existing seed multiplication centers do not provide enough seed, their price is costly and they don't provide on time.

④ Training provision to model farmers on livestock health. (Those trained farmers give trainings for other farmers in other Kebeles/ villages): Remote areas could not be covered by Woreda experts to give livestock health services. / Trainees give health service to neighbors on time.

⑤ Organizing voluntary development associations. (To help group members who cannot do critical agricultural activities like sowing times. / The association members have up to 30 members. / Better off farmers organized in groups. For example, in Buhoro, there are about 11 development groups organized voluntarily such as, Hidassie, Nigat and Gotera. / The groups consider women's participation. / These groups mainly work with poor farmers.): Relatively better off farmers contribute in cash. / Initiation to help each other is one of the key factors.

⑥ Water supply scheme construction: Critical problem of the Woreda in Kolla area and communities' priority issue / ORDA experience in the Woreda (- High community participation in planning, implementation and monitoring), / Community approve artisans' performance (community initiation to raise fund and fund management). / Hygiene and sanitation awareness creation.

⑦ Irrigation scheme management (conflict resolution in water utilization) in hand dug well construction (Community pays for the water. So that, the money collected will be used for maintenance activities.): Community participation and discussion (There is a community containing 15 members; members of the committee are: The cabinet of the Kebele (it includes director of the school, health extension, expert and administrator of the Kebele), opinion leaders and other farmers.). / Community contributes money. / Community itself carries out the management activity. / Pit latrine construction. / Employing local resources to do activities. / Sense of ownership developed. / Evaluation activities conducted before implementation.

⑧ Women participation in micro finance: Start up capital for micro business available. / Women can make business easily. / Project proposal designed and submitted to donor organizations.

⑨ Gender mainstreaming on improved stove utilization. (Deforestation mainly held by women; so that improved fuel saving stove disseminated): Pioneer initiation by Ministry of Agriculture and GTZ. / Health of women improved (away from smokes), time saved. / Cost of the stove is rescannable and can be modified locally.

⑩ Land certification. (Providing ownership certificate. / Conducting ecology based activities. / Privatization of hilly areas. / Studying degraded lands and preparing them for development. / Studying and mapping investment sites (getting them ready for investment)): Sense of ownership developed as a result farmers treat their farmlands properly (proper use of irrigation areas, hillside management improved…).

⑪ Identifying and studying investment areas: The Woreda has high investment potentials that can attract investors.

⑫ Awareness creation on preventive measures. (Health extension agents practice different health packages in each Kebele. (There are about 12 packages like dry and wet waste disposal.) Prevention based activity against disease prevalence like malaria. (Currently, malaria prevalence decreased by 95%. / Death rate of mothers and children decreased). Immunization done.): Intelligence of graduated farmers who did health extension packages (when they compared amongst the community). / Series healthy problems like malaria prevalence gradually decreased. / Death rate of children reduced as compared to previous situations as a result of effective immunization (community well aware).

⑬ Construction of health center. (The Woreda grouped in 8 clusters; each cluster contains 25,000 farmers and except one cluster Woreda, the seven clusters have already constructed health centers.): Probability of fund release to construct 2 health centers if Woreda constructs one. / Community needs to get proper medical access and Woreda government keen desire to raise health coverage.

⑭ School construction by mobilizing GO, NGO and community: Strong community belief (desire) to contribute labor and cash for construction. / Community desire for their children to get education access nearby area.

⑮ Changing school shift system to whole day program

⑯ Establishment of student parliament to identify problems and propose solutions

⑰ Establishing environmental school club: Coordination work with each sectors

⑱ Data collection of jobless people (youths) and organizing them

⑲ Training provision on off farm activities and facilitating credit and market access: Availability of credit access

Draft Woreda Development Plan of Kobo

Table 4.1.15 Summary of Woreda Strategies of Kobo

Approach	Strategy / Priority		Approach	Strategy / Priority	
I. People of Kobo have enough food. (148/500: 29.6%)	I.1 Crop production and productivity improved.	1	IV. People of Kobo are educated. (71/500: 14.2%)	IV.1 People get basic education.	1
	I.2 Crop protection improved.	2		VI.2 Need quality education.	2
	I.3 Conservation practice improved.	4	V. People of Kobo have enough cash. (52/500: 10.4%)	V.1 People get enough income generating activities.	1
	I.4 Post harvest handling loss improved.	5		V.2 Saving practice of people improved.	2
	I.5 Aforestation. (Production of dood from trees.)	6	VI. Infrastructure of Kobo improved. (39/500: 7.8%)	VI.1 People's communication improved.	2
	I.6 Edible food source species conserved.	6		VI.2 People get access to enough electric power.	3
	I.7 Livestock production and productivity improved.	3		VI.3 Transportation improved.	1
II. Health status of Kobo improved. (91/500: 18.2%)	II.1 People get enough medical care.	4		VI.4 Water supply is improved.	4
	II.2 People hygiene condition improved.	2		VI.5 Modern & well-organized market centers constructed.	5
	II.3 Malaria control improved.	3	VII. Gender issues incorporated to all activities in Kobo. (25/500: 5.0%)	VII.1 Harmful traditional practices controlled.	1
	II.4 People get enough potable water.	1			
	II.5. Waterborne disease controlled.	5			
III. Environment of Kobo improved. (74/500: 14.8%)	III.1 Natural environment protected.	1			
	III.2 Environmental pollution controlled.	2			

Draft Priority Project List of Kobo

① Introduction of new food crop (Cassava) (Vote: 74 / 394 = 18.8%)
② Environment rehabilitation & protection/ Afforestation & area closure (Vote: 74 / 394 = 18.8%)
③ Construction of water supply schemes (1) (Vote: 67 / 394 = 17.0%)
④ Construction of water supply schemes (2) (Vote: 62 / 394 = 15.8%)

⑤ Special need education (Vote: 47 / 394 = 11.9%)
⑥ Forage development/ Forage plant production (Vote: 41 / 394 = 10.4%)
⑦ Weaving (Vote: 41 / 394 = 10.4%)
⑧ Capacity building program (Vote: 29 / 394 = 7.4%)

4.1.7 Mekedela Woreda

Sector-wise Development Plans of Mekedela

(1) Agriculture and Rural Development

① Capacity building conducted and it's to be continued
② Water centered activities carried out.
   1) Surface and ground water development
   2) Surface water
   3) Ground water
③ River diversion
④ Small scale
⑤ Water harvesting: Proper utilization of technologies should be enhanced. For instance, in our Woreda, Geo membrane was not practical. Therefore it requires effective way of utilization. All the above activities are to be implemented so as to make farmers harvest twice a year.
⑥ Human resource improvement program (Fulfilling human resources and institutions)
⑦ Implementing civil service reform activities
⑧ Mobilizing farmers /community
⑨ Generally increasing capacity building on implementing efficiency
⑩ Effective utilization of water resources (rain, irrigation, ground)
⑪ Improving water harvesting technologies (Plastic water harvesting, spring development, pond construction and /or irrigation development
⑫ Natural resource management
   1) Forest development (increasing forest coverage area, essence production, forage seedling production & plantation, increasing forest area closure)
   2) Soil and water conservation
   3) Hill side development (Hill side distribution to youths, Hill side terrace construction and plantation)
   4) Gully rehabilitation and development (biological and physical)
   5) Integrated watershed management

(A) Crop Production

① Increasing production and productivity of crops of Meher, Belg and Irrigation
② Improving soil fertility
   1) Black soil drainage
   2) Identification of soil type
   3) Traditional drainage
   4) Modern drainage
③ Improving Soil Acidity
   1) Improving soil acidity
   2) Using natural fertilizer
④ Nursery development
⑤ Distribution of technologies
   1) Proper input supply (seed, fertilizers)
   2) Using Farmers' training centers as model
   3) Vertisol management
   4) Natural fertilizer preparation (compost- each farmer prepare 20 m^3)
   5) Coffee, fruit and spices production

(B) Livestock Production and Productivity

① Focusing on quality of livestock than number
② Introducing improved breed

③ Forage development and improvement (Silage and other forage preparations)
④ Controlling free grazing
⑤ Implement artificial insemination
⑥ Increasing income to farmers through fattening, dairy, poultry
⑦ Poultry improvement and development
⑧ Increasing honey production and quality improvement
⑨ Transforming from traditional to modern way of rearing
⑩ Hides and skin production and marketing
⑪ Livestock health improvement

(C) Extension Service

① Agriculture technologies multiplication
   1) Seed multiplication
   2) Weed control (crop protection)
   3) Pest assessment and control
② Extension system Improvement
   1) Awareness creation through preparing development groups of the community
   2) Implementing minimum package
   3) Facilitating credit access
   4) Graduating safety net beneficiaries
   5) Community situations assessment and study
   6) Monitor, Evaluating, giving feedback and scaling up
   7) Proper distribution of technologies
   8) Extension system should be scaled up
   9) Technologies should be evaluated in the context of ours
   10) Expanding best practices of farmers in propagating technologies and their utilization for other farmers
   11) Proper distribution of technologies/ inputs
③ Improving input supply and market accessibility
   1) Proper supply of inputs such as Broad Bed Maker, livestock breeds, crop varieties
   2) Market linkage especially for market oriented crops

(D) Poverty reduction and Food Security

- There are 59,027 chronically food insecured people in the Woreda
- To minimize the number of food insecured people, we should work together with NGOs and Other donors.
- Working on filling food gap
- Food secured farmers should be model for the food isecured ones。
- Graduation of farmers should continue.
- To implement the already planned activities, the following should be conducted:
  ① Civil service execution
     1) Labor development sub program
     2) Ethics development sub program
     3) Identifying food gaps and searching immediate solutions
     4) Identifying proper programs and implementation
  ② Land use plan preparation (Site selection data recording)
  ③ Mineral and energy alternative improvement
     1) Introducing improved stove and other energy alternatives
     2) Increasing earn of the Woreda from mineral

(E) Irrigation Development

① Ground water
② Surface water

(F) Pest Control

① Decreasing wastage of production due to the pest by 35%

② Pest assessment/ prevention
③ Prevention of pests before they result in damage
④ Watershed management
  1) Identification
  2) Study

(G) Land Administration

① Certification
② Registration

(H) Hillside Development (Utilization of trench, micro basin, eyebrow basin, zay pit, deep waterway canal)

① Black soil pond
② Enclose and develop
③ Rehabilitation of degraded land
④ Land distribution
⑤ Gully development. (Integrating physically and biologically)

(I) Water Harvesting Activities

① New and existing construction
② Spring development.
③ Different ditches (trapezoidal, concurrent

(J) Forest Development

① Planting multipurpose trees to get multipurpose forest (28 million)
② Forage seedling
③ Increasing forest coverage
④ Incense production
⑤ Planting trees by individuals, cooperatives and government

(K) Mining and rural energy

① Increasing improved stove users by 70%
② Distribution of 'Fetenech' improved fuel saving stove
③ Training on improved stove preparation & utilization

(2) Health

① Focusing on preventive measures.
  1) Increasing health coverage of the Woreda
  2) Capacity building to health extension agents
  3) Health post, healthy center construction and fulfilling materials & equipments
  4) Decreasing mother and child mortality
  5) Family planning education
② HIV/AIDS prevention and control measure (care, support, blood test and voluntary counseling services)
③ Water borne disease prevalence control
④ Malaria prevention and control

(3) Women Affairs

① Gender equality and women empowerment
② Attitude change of the community towards gender
③ Increasing women participation in leadership, economy, politics and social issues
④ Establishing women group
⑤ Incorporating gender issues while planning, implementing, monitoring and evaluations of all development and social activities

⑥ Establishing Woreda Amhara women Association
⑦ Increasing women participation on Income Generating Activities
⑧ Facilitating Credit Access

(4) Education

① Increasing Education quality
② Human resource development at all levels
③ Capacity building to all implementers (teachers, managers)
④ Strengthening inspection capacity of experts
⑤ Identifying successful trends and disseminating to the other areas
⑥ Strengthening teachers development program
⑦ Civics and citizen development program
⑧ Vocational trainings improvement and development programs
⑨ School club establishment and strengthening
⑩ Modification and amending education process
⑪ Information and communication Technology development programs
⑫ Strengthening radio media education
⑬ Laboratory education improvement

PRA (Participatory Rural Appraisal) Review in Mekedela

① Training given to Development Agents by facilitators
② Watershed visited
③ Farmers were divided in to different groups and did history of the Kebele, social map & development map of the watershed, proximity of institutions to the community
④ Problems prioritized and solutions proposed by themselves

Good Practices and Key Factors in Mekedela

(1) Good Practices

① Water harvesting
② Compost preparation
③ Establishing community based organizations
④ Market oriented crop production (Haricot bean)
⑤ Constructing enough Farmers Training Centers
⑥ Forage Development
⑦ Integrated pest Management
⑧ Improved stove
⑨ Management and maintenance of water points
⑩ Family planning
⑪ Malaria control
⑫ Immunization
⑬ Awareness creation on HIV/AIDS
⑭ Community discussion about health issues
⑮ Extension package implementation of Health
⑯ Expanding institutions (schools)
⑰ Community participation to build school and other infrastructures
⑱ Women's participation in education

(2) Good Practices

The following five are best practices out of the good practices

① Focusing on integrated watershed management
   1) Soil and water conservation
   2) Forest development
   3) Water and moisture harvesting
② Demonstration of Agriculture activities in Farmers Training Centers

1) Giving trainings (75 % practical)
2) Preparing demonstration activities

③ Market oriented crops production (Haricot bean)
④ Family planning
⑤ Expanding institutions (Schools)

Draft Woreda Development Plan of Mekedela

Table 4.1.16 Summary of Woreda Strategies of Makedela

Approach	Strategy / Priority		Approach	Strategy / Priority	
I. Agricultural production of Mekedela increased. (156/458: 34.1%)	I.1 Crop production and productivity increased.	2	IV. Environment of Mekedela protected. (48/458: 10.5%)	IV.1 Natural environment conditiion improved.	1
	I.2 Livestock production increased	3			
	I.3 Intensive land utilization increased.	4	V. People of Mekedela are educated. (47/458: 10.3%)	V.1 People get basic education.	1
	I.4 Drought problem reduced.	1		V.2 People get vocational education.	2
II. Health status of Mekedela people improved. (76/458: 16.6%)	II.1 Waterborne disease prevalence decreased.	1	VI. People of Mekedela have enough cash. (46/458: 10.0%)	VI.1 Production of food increased.	1
	II.2 Implementing disease preventing measures increased.	2		VI.2 People get enough alternative income source.	3
III. Infrastructures of Mekedela constructed. (63/458: 13.8%)	III.1 Infrastructure service supply. III.1.1 Road network improved. III.1.2 Communication is improved. III.1.3 Electric provision is improved. III.1.4 Potable water supply coverage is	1		VI.3 People practice saving.	4
				VI.4 Farmers produce market oriented products.	2
				VI.5 Farmers / people practice proper expenditure.	5
			VII. Gender issues incorporated in all development activities in Mekedela. (22/458: 4.8%)	VII.1 Gender equality practiced.	1

Draft Priority Project List of Mekedela

① Soil Fertility improved/ Soil erosion reduced (Vote: 112 / 493 = 22.7%)
② Environmental policy and law / EIA implementation in all programs (Vote: 70 / 493 = 14.2%)
③ Forage development (Vote: 63 / 493 = 12.8%)
④ Personal hygiene/ Latrine construction (Vote: 51 / 493 = 10.3%)
⑤ Establishment of market information center (Vote: 49 / 493 = 9.9%)
⑥ Road network improved / Rural road construction (Vote: 43 / 493 = 8.7%)
⑦ Potable water coverage increase (Vote: 41 / 493 = 8.3%)
⑧ Special need education (Vote: 26 / 493 = 5.3%)
⑨ Land sustainability/ Issue certificate (Vote: 21 / 493 = 4.3%)
⑩ Increment of attitudinal change of community towards gender (Vote: 17 / 493 = 3.4%)

4.1.8 Legambo Woreda

Sector-wise Development Plans of Legambo

(1) Agriculture

① Increase production and productivity of crops and livestock
1) Increasing farmers' income
2) Securing food insecurity
3) Implementing integrated watershed management (3 watersheds in one Kebele at least, in total 32 Kebeles)
4) Organizing development team
② Extending extension services to farmers

(2) Youth and culture

① More than 27,000 youths are found in the Woreda currently. Out of these, 9,000 target beneficiaries organized.
② Training provision

③ Credit access facilitation

(3) Education

① Increase access to basic education to children
   1) All children who are eligible to school should get education.
   2) The office plans to help 9004 youths participate in small business.
   3) In the Woreda there are two technical and vocational schools and 18 alternative basic schools.
   4) Mobilizing community
② Keeping education quality
③ Different (6) packages are designed to improve the quality of education.
④ Ensuring fair educational distribution
⑤ Decreasing dropout rate
⑥ Improving student: teacher and student: book combination/ ratio

(4) Health

① Improving hygiene and sanitation; Pit latrine to be constructed (13,000).
   1) Awareness creation on the importance of toilet construction.
② HIV/AIDS controlling
   1) Community discussion
   2) Blood test Voluntary counseling service (The office expects 12000 people to have VCT)
   3) Care taking to drug users
③ Implementing preventive measures
④ Construction of health posts
⑤ Implementing health extension packages

(5) Environmental Protection and Land Administration

① Land size measurement and data collection (land certification)
② Land use system improvement (piloting)
③ Environmental protection
   1) Awareness creation to combat desertification
   2) Establishing environmental school clubs
   3) Developing sense of ownership
   4) Decreasing improper utilization of land

(6) Administration

① Protecting crimes prior to commencement (Militia and police are working together to prevent crime)
② Working in integration with the community (community policing)

(7) Information

① Mobilizing community to implement policies and strategies of sectors
② Transferring current issues, messages government stand points to the community

(8) Small and Micro Enterprises

① Making target beneficiaries “job creators” rather than “job seekers”
② Facilitating credit access
③ Expanding petty trade and other micro businesses

(9) Rural Energy and Minerals

① Increasing improved stove introduction
② Forming youth groups how to utilize and use sand resource and other minerals

Good Practices and Key Factors in Legambo

① Small scale irrigation construction and management
② Runoff control
③ Vertisol management
④ Forage development and overgrazing control
⑤ Pit latrine construction at house hold level
⑥ Family planning awareness creation
⑦ Awareness creation and community mobilization to send their children to school
⑧ Community policing
⑨ Job opportunity creation through Income Generating Activities training provision and credit access facilitation

PRA (Participatory Rural Appraisal) Review in Legambo

① Socio economic data collected ahead of PRA
② Discussion with the community and group formation
③ Situations of the watershed were analyzed (natural condition, social status, etc)
④ Watershed committee established
⑤ Problems established and prioritized
⑥ Solutions proposed to problems
⑦ Wealth ranking, social mapping, development mapping, proximity of sectors to the community were done by the community
⑧ Body Mass Index of the participants is recorded.

Draft Woreda Development Plan of Legambo

Table 4.1.17 Summary of Woreda Strategies of Legambo

Approach	Strategy / Priority		Approach	Strategy / Priority	
I. Agricultural production of Legambo increased. (103/390: 26.4%)	**I.1** People's use of modern agricultural practices improved.	1	**IV. People of Legambo are educated. (49/390: 12.6%)**	**IV.1** People get basic education.	1
	I.2 People use water resources properly / efficiently.	3		**IV.2** People get enough higher education.	4
	I.3 People use different agricultural inputs.	2		**IV.3** People get enough vocational education.	3
	I.4 Producing high marketing oriented produces	7		**IV.4** People get access to adult education.	2
	I.5 Soil fertility improved.	5	**V. People of Legambo have enough cash. (44/390: 11.3%)**	**V.1** Agricultural production increased.	1
	I.6 Forest cover increased.	6		**V.2** People have enough income generating activities.	2
	I.7 Livestock production increased.	4		**V.3** People practicing saving system improved.	5
II. Environment of Legambo protected. (65/390: 16.7%)	**II.1** Natural environment conserved.	1		**V.4** Farmers sell their produce at good price.	3
				V.5 People expenditure managed / is economical.	4
III. Health status of people of Legambo improved. (58/390: 14.9%)	**III.1** People get enough balanced diet.	1	**VI. Infrastructures of Legambo constructed. (42/390: 10.8%)**	**VI.1** Electrification increased.	4
	III.2 People get enough medical care.	3		**VI.2** Water supply increased.	1
	III.3 People get enough potable water.	2		**VI.3** Telecommunication access improved.	3
				VI.4 Road network improved.	2
			VII. Gender issues incorporated in all activities in Legambo. (29/390: 7.4%)	**VII.1** Mainstreaming of gender increased.	1

Draft Priority Project List of Legambo

① Forage development and improvement (Vote: 87 / 408 = 21.8%)
② Practice on modern farming system (Vote: 80 / 408 = 19.6%)
③ Biogas implementation (Vote: 58 / 408 = 14.2%)
④ People get enough nutrition/ awareness creation on nutrition (Vote: 42 / 408 = 10.3%)
⑤ Increasing educational coverage/ construction of public library (Vote: 40 / 408 = 9.8%)
⑥ Ending HTP outlooks towards Women (Vote: 39 / 408 = 9.6%)
⑦ Expansion of fountain construction (Vote: 33 / 408 = 8.1%)
⑧ Market information access (Vote: 29 / 408 = 7.1%)

4.1.9 Aregoba Woreda

Sector-wise Development Plans of Aregoba

(1) General Information

① Total population of Aregoba Woreda >42,000
② Agriculture based people > 35,000
③ In the Woreda the size of cultivable land is about 6,265 hectare.
④ The Woreda mainly attacked by pests so that it is planned to implement IPM (Integrated Pest Management).
⑤ In the current year, it's planned to increase production by 53%.
⑥ The general objective of the office is to ensure food security at household level.
⑦ Natural resource management based
⑧ Extension system
⑨ Production and productivity

(2) Crop Production

① Increasing production and productivity of crops (by 56 %) through:
   1) Modern agricultural system
   2) Intercropping to increase Meher production
   3) Harvesting two times in a year
   4) Pest assessment and control
   5) Maximizing Meher production
   6) Producing market oriented crops Pest assessment and control
   7) Compost preparation
   8) Improved seed distribution
② Distribution of different inputs like tie ridger, Polyethylene tube, seeds and others
③ Input distribution (Seed, farming tools)

(3) Livestock Development

① Livestock production and productivity improvement (9.6 million birr income expected for the year)
② Regarding filling of food gap of livestock 14 model Kebeles are selected to demonstrated for others.
③ Livestock health improvement (43 % to 100 %) = vaccination, treatment
   1) Forage development (forage distribution,)
   2) Poultry production
   3) Livestock breed improvement
   4) Modern beehive improvement
   5) Hides and skins production improvement
④ Identifying maximum water potentials and efficient utilization

(4) Food Security Programs and Projects

① Ensuring food security
   1) Resettlement
   2) Safety net (Direct support / Public work)
   3) Family package implementation
   4) Graduating safety net beneficiaries
② Moisture (water) harvesting and soil conservation
   1) Integrated watershed management
   2) Identifying watersheds
   3) Hillside management
   4) Gully rehabilitation
   5) Pond construction
   6) Irrigation development
③ Forest development and Agro forestry practicing
   1) Nursery management
   2) Seedling production
   3) Seedling plantation and management
   4) Gabion
   5) Polyethylene tube
   6) Forest seed and sack provision

④ Capacity building to experts, development agents
⑤ Awareness creation on Harmful traditional practices
⑥ Market access to market oriented crops
⑦ Input provision, credit facilitation and credit returning efficiency improvement
  1) 408,335 birr for crop production
  2) 100,000 birr for livestock production
⑧ Establishment and strengthening of multipurpose service cooperatives
⑨ Organizing farmers in cooperatives (100%) to do different activities for instance, arty craft skills

(5) Water Resource Development

① Increasing water coverage 20.5 % to 56 %
  1) Water point construction (currently less than 25 %)
  2) Community participation (labour, cash (78,000 birr this year))
  3) Spring cleaning
  4) Water treatment
  5) Water committee establishment and training provision
  6) Gabion
  7) Polyethylene tube
  8) Forest seed and sack provision
  9) 23 watershed identification and study activities are conducted
  10) 513 hectare to be developed in integrated soil and water conservation activities
② Master plan preparation for 5 Kebeles done.

(6) Health

① Minimizing children's and mother's mortality by carrying out:
  1) RDT (Random Diagnostic Test) for malaria (10,536 people)
  2) PMTCT (Prevention of Mother To Child Transmission) for HIV (,1056 mothers)
  3) Controlling malaria prevalence (Distribution of malaria net for 7,646 farmers. Each farmer will have two malaria nets.)
  4) Decreasing water borne diseases and environmental sanitation (Construction of 89,822 pit latrines) / (Graduating 7,839 people in family package)
② Since our policies are based on prevention based policies, most of our activities focus on preventive measures.
  1) Minimizing measles (by 85%)
  2) Providing pre and post birth service for mothers
  3) Delivery services
  4) Minimizing water born diseases
③ Family planning

(7) Small and Micro Enterprises

① Strengthening existing organizations
② Facilitating credit access
③ Skill training on income generating activities
④ Market shed construction
⑤ Organizing micro business beneficiaries: In Dibe and Kilkilo villages, women organized in groups and provide service for their people. Now, people don't go far to get their clothes sewed. They have also developed saving culture.
⑥ Market access formation and linkage (locally with in and out of the Woreda)
⑦ Enterprise establishment (private and group)
⑧ Annual plan preparation based on zonal plan

(8) Education

① Increasing quality education (70% of our activity)
  1) CPD (Continuous Professional Development)
  2) Civics and Ethical Education
  3) Curriculum Reform

4) ICT
5) Teacher student combination

② Capacity building for directors and supervisors through trainings
③ Promoting ethical values and principles for students
④ Developing students' nationalism feeling by:
1) Mini media programs
2) Queue services
⑤ Increase educational coverage
1) Encouraging parents to educate their children who are illegible to school
2) Classroom construction (13 schools constructed by public participation)
3) Teacher : Student combination 1 :50
4) Student : book (from grade 1- 4) 1 : 1
5) Student : book (from grade 5- 8) 1 : 1

Good Practices and Key Factors in Aregoba

① Hillside terrace construction
② Gully rehabilitation
③ Small scale construction (community participation): Farmers organized by themselves
④ Provision of training on tailoring to women: Their saving practice improved. / People around get tailoring services.
⑤ Food preparation
⑥ Identifying and organizing jobless youths: Giving three months training. / Job creator rather than job seeker
⑦ Practical training provision to women on food processing (different types of food preparation methods introduced. 72 women involved in this activity): 8 containers constructed and training given
⑧ Community participation to construct school (Labor, cash, land provision) Two houses constructed in two Kebeles namely Telkesha (06) and Tebissa (07). Some farmers deliver their own land for the school construction.
⑨ Coffee ceremony to create awareness on traditional harmful practices like early marriage: People meet easily because of the ceremony
⑩ Voluntary counseling and testing (VCT) for HIV/AIDS. 6,689 people involved in VCT service and 34 of them were HIV positive. Many of those people are who moved from place to place for job opportunity seeking: Role of community leader high. / Community discussion.
⑪ Community participation to construct Health post: Critical problem of the community / High community desire.
⑫ Immunization: Disease problem is high. / High awareness creation
⑬ Terracing: Good awareness creation
⑭ Spring development: Identification of semi-skilled manpower (masonry workers) to construct inaccessible water points for high skilled manpower
⑮ Land use issue conflict resolution by the community itself: Setting accepted by laws
⑯ Organizing jobless people to form cooperative in Fetekoma (01 Kebele), there is a cooperative called "Gode Chefa". It creates job opportunities for youngsters
⑰ Awareness creation on multipurpose cooperative in Kebele 02. There is a multipurpose cooperative and it connects people with different new technologies. It works on creating awareness: Fund management. / Technology and/ or input provision
⑱ Irrigation cooperative establishment
⑲ Improved stove: Good awareness creation

PRA (Participatory Rural Appraisal) Review in Aregoba

① Introduction about the watershed
② Transect walk
③ Establishing community planning committee compose from all community
④ Basic data collected
1) Area of watershed identification
2) Land holding size

3) Livestock types and amount
4) Types of crops grown
5) Forest coverage
6) Soil type
7) Land use type
8) Temperature
9) Major community activities

⑤ Wealth ranking (better off are relatively to the community)
⑥ Vision of the watershed that the community stated is Ensuring food security through
1) Increasing production and productivity of crops and livestock
2) Improving water supply
3) Increasing forest development
4) Road construction
5) Compost preparing
6) Improving electricity supply and telecommunication service
7) Improved stove
8) Enough expert supervision
⑦ Importance / proximity of each sector to the community
⑧ Development map prepared
⑨ Trend analysis done on:
1) Soil fertility
2) Forest coverage
3) Productivity
4) Erratic of rain fall
5) Livestock situation
6) Wild life
⑩ Problem identification and ranking
1) Human disease
2) Pest and disease
3) Potable water
4) Fertility
5) Input supply
6) Transport
7) Irrigation
8) Livestock health
9) Livestock forage
10) Hail
⑪ Solutions for the problems proposed
⑫ Village map developed

Draft Woreda Development Plan of Aregoba

Table 4.1.18 Summary of Woreda Strategies of Aregoba

Approach	Strategy / Priority	
I. Infrastructure access of Aregoba improved. 1st (105/532: 19.7%) 2nd (149/539: 27.6%)	**I.1** Infrastructures constructed. I.1.1 Road construction increased. I.1.2 Electricity supply increased. I.1.3 Telecommunication structures I.1.4 Postal service established.	1
II. Agricultural production of Aregoba is high. 1st (122/532: 22.9%) 2nd (120/539: 22.3%)	**II.1** Soil fertility is improved.	2
	II.2 Soil moisture is improved.	1
	II.3 Pest infestation is reduced.	3
	II.4 Farmers practiced modern agricultural technologies / inputs.	4
	II.5 Command irrigable area increased.	5
	II.6 Livestock production and productivity improved.	6
	II.7 Improved livestock breed.	7
	II.8 Livestock forage improved.	8
III. Health status of Aregoba people improved. 1st (114/532: 21.9%) 2nd (101/539: 18.7%)	**III.1** People get enough potable water.	1
	III.2 People get enough knowledge on hygiene and sanitation.	2
	III.3 People get proper medical care.	5
	III.4 People get enough knowledge about family health.	3
	III.5 People get enough knowledge on HIV/AIDS.	4
IV. People of Aregoba are educated. 1st (77/532: 14.5%) 2nd (86/539: 16.0%)	**IV.1** Education for all.	1
	IV.2 Quality of education for all.	2
V. People of Aregoba have enough cash. 1st (58/532: 10.9%) 2nd (45/539: 8.3%)	**V.1** Production of market oriented crops increased.	1
	V.2 People get enough access to jobs.	2
VI. Environment of Aregoba protected. 1st (39/532: 7.3%) 2nd (26/539: 4.8%)	**VI.1** Natural resources conserved.	1
	VI.2 Watershed conserved.	2
VII. Gender issues incorporated to all activities in Aregoba. 1st (17/532: 3.2%) 2nd (12/539: 2.2%)	**VII.1** Gender mainstreaming improved.	1
	VII.2 Harmful traditional practice controlled.	2

Draft Priority Project List of Aregoba

① Road construction (Vote: 132 / 624 = 21.2%)
② Improving environmental and personal hygiene/ practicing preventive measures increased (Vote: 111 / 624 = 17.8%)
③ Establishment of modern irrigation scheme (Vote: 85 / 624 = 13.6%)
④ Increasing water supply coverage/ Water supply scheme construction (Vote: 84 / 624 = 13.5%)
⑤ People get higher education / Construction of school for higher level education (Vote: 64 / 624 = 10.3%)
⑥ Expansion of alternative energy sources (Vote: 43 / 624 = 6.9%)
⑦ People get enough market access / Construction of market, offices, warehouse, stores for cooperatives (Vote: 39 / 624 = 6.3%)
⑧ Organizing idle/ non working/ jobless females by cooperatives and small and micro enterprises (Vote: 17 / 624 = 2.7%)

4.2 Revision of the Draft Woreda Development Plans

4.2.1 Methodology

In October & November 2010 when the verification project was nearly finished, a series of workshops were held to review the Woreda development directions, which meant to review 1) the priorities of the sector strategies and 2) the priorities among the sectors/approaches. They were done at each Woreda after the final evaluation of the verification project. (See Appendix E for the original tables.)

4.2.2 Ebinate Woreda

In the review of priority sector strategies, there were several changes. For example, the priority of "Soil moisture and water increased" went up from the 7th priority to 2nd priority in Agriculture Sector/ Approach. "Preventive health care practiced improved." overpasses "Hygiene and sanitation condition improved." in Health Sector/Approach. Also "People get adult education." replaces "People get basin education." Priorities of other sector strategies were consistent with the original ones.

Table 4.2.1 Modified Woreda Development Direction of Ebinate

Approach I	Priority Strategy	2 yrs ago	Approach II-III	Priority Strategy	2 yrs ago	Approach IV-VII	Priority Strategy	2 yrs ago
I. Agriculture (Agricultural and livestock production of Ebinate increased.)	I.1. Soil fertility improved.	1	II. Environment (Environment of Ebinate protected.)	II.1. Awareness of all levels of students and community about environmental protection increased.	1	IV. Education (People of Ebinate are educated.)	IV.1. People get adult education.	3
	I.2. Soil moisture and water increased.	7		II.2. Law and regulation on environmental rehabilitation and protection.	2		IV.2. People get basic education.	1
	I.3. Farmers use modern farming practice.	2		II.3. Natural resource conserved.	3		IV.3. People get vocational training.	4
	I.4. Crop variety improved.	3	[20.1%, 58/288] (9.7%, 29/300)	II.4. Land shortage reduced.	4	[12.2%, 35/288] (12.0%, 36/300)	IV.4. People get higher education.	2
	I.5. Livestock management improved.	4	III. Health (Health status of Ebinate people improved.)	III.1. Preventive health care practices improved.	2	V. Infrastructure (Infrastructure of Ebinate constructed.)	V.1. Road construction increased.	1
	I.6. Livestock forage development improved.	8		III.2. Hygiene and sanitation condition improved.	3		V.2. Water supply increased.	2
	I.7. Pest and disease occurrence controlled.	5		III.3. People get enough balanced diet.	4		V.3. Telecommunication increased.	3
	I.8. Livestock health improved.	6	[15.3%, 44/288] (19.3%, 58/300)	III.4. People get proper medical care.	1	[8.0%, 23/288] (10.0%, 30/300)	V.4. Supply of electricity increased.	4
[28.8%, 83/288] (30.0%, 90/300)	I.9. Animal breed improvement.	9				VI. Cash (People of Ebinat have enough cash.)	VI.1. Small & Micro enterprises expansion.	1
						[8.0%, 23/288] (11.1%, 33/300)	VI.2. Market access to sell produce increased.	2
						VII. Gender (Gender issues incorporated to all activities in Ebinat.)	VII.1. Gender mainstreaming increased.	1
						[7.6%, 22/288] (8.0%, 24/300)	VII.2. Women empowerment increased.	2

In the review of sector/approach priorities, III. Heath Sector lost 4.0% from 19.3% to 15.3%, VI. Cash Sector lost 3.1% from 11.1% to 8.0% and V. Infrastructure Sector lost 2.0% from 10.0% to 8.0%

while the share of II. Environment Sector increased more than 10% from 9.7% to 20.1%. The ranking of II. Environment Sector went up from the 4th to the 2nd.

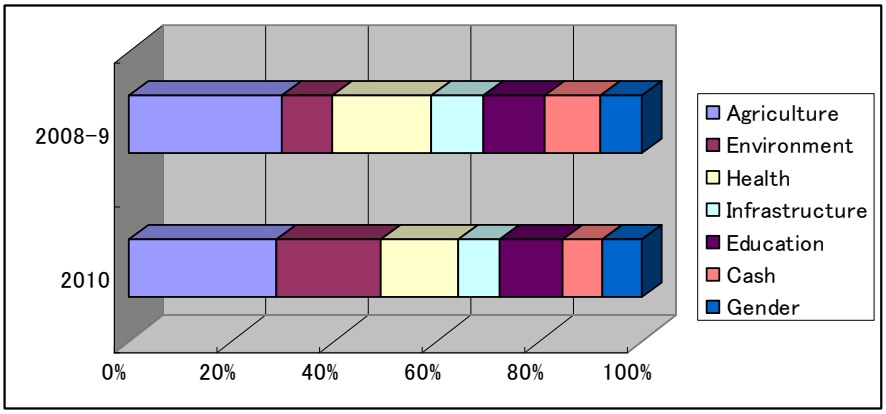


Figure 4.2.1 Change of the Sector/Approach Priorities at Ebinate

4.2.3 Simada Woreda

The 1st and 2nd priority sector strategies of I. Agriculture Sector were "Strategy disseminating new extension approach" and "Agricultural system is modern" and were the same as two years ago. The 3rd priority sector strategy, however, was "Intensive use of land increased" which were 7th two years ago.

There was no change of the priority sector strategies in II. Environment, III. Infrastructure, and IV. Health Sectors. In V. Cash Sector, "People practice enough IGAs" became the 1st from the 4th, where "Farmers sell their produce at good price" went down to 3rd from the 1st, and "People get necessary off-farm activity" went down to 6th, which was the last position, from the 3rd. In VII. Gender, "Bad culture reduced" moved up to the 1st from the 2nd.

Table 4.2.2 Modified Woreda Development Direction of Simada

Approach I	Priority Strategy	2 yrs ago	Approach II-IV	Priority Strategy	2 yrs ago	Approach V-VII	Priority Strategy	2 yrs ago
I. Agriculture (Agricultural production of Simada is high.)	I.1. Strategy disseminating new extension approach.	1	II. Environment (Environment of Simada improved.)	II.1. Natural environment is improved.	1	V. Cash (People of Simada have enough cash.)	V.1. People practice enough IGAs.	4
	I.2. Agricultural system is modern.	2	[16.2%, 35/216] (11.5%, 55/480)	II.2. Other environmental issues are improved.	2		V.2. People get enough credit access.	2
	I.3. Intensive use of land increased.	7	III. Infrastructure (Infrastructure of Simada are constructed.)	III.1. Road is improved.	1		V.3. Farmers sell their produce at good price.	1
	I.4. Farmers use enough agricultural inputs.	6		III.2. Water supply is improved.	2		V.4. People sell livestock at good price.	5
	I.5. Soil fertility is improved.	3		III.3. Electricity is available.	3		V.5. People use available cash effectively.	6
	I.6. Farmers get enough improved varieties of crops.	8	[14.4%, 31/216] (17.9%, 86/480)	III.4. Telecommunication is available.	4	[13.0%, 28/216] (7.3%, 35/480)	V.6. People get necessary off-farm activity.	3
	I.7. Pest and disease prevalence controlled.	12	IV. Health (Health condition of Simada people is high.)	IV.1. People have enough balanced diet.	1	VI. Education (People of Simada get good education.)	VI.1. People get basic education.	1
	I.8. Access of irrigation increased.	5		IV.2. Level of private hygiene and sanitation increased.	2	[10.1%, 22/216] (11.0%, 53/480)	VI.2. People can access higher education.	2
	I.9. Livestock production increased.	13		IV.3. People get proper medical care.	3	VII. Gender (People of Simada have enough awareness of gender.)	VII.1. Bad cultures reduced.	2
	I.10. Farmers use enough modern animal husbandry.	4		IV.4. Malaria infestation decreased.	4		VII.2. Women equality improved.	1
	I.11. Forage production increased.	9		IV.5. Water borne disease controlled.	5	[8.8%, 19/216] (6.5%, 31/480)	VII.3. Women empowerment improved.	3
	I.12. Livestock disease prevalence decreased.	10	[13.8%, 30/216] (15.4%, 74/480)	IV.6. TB / HIV prevalence decreased.	6			
[23.6%, 51/216] (30.4%, 146/480)	I.13. Farmers use enough improved livestock breeds.	11						

In Simada Woreda, the vote for I. Agriculture Sector reduced from 30.4% to 23.6% by 6.6% and III. Infrastructure reduced from 17.9% to 14.4% by 3.5%, while V. Cash increased from 7.3% to 13.0% by 5.7%, II. Environment increased from 11.5% to 16.2% by 4.7%, and also VII. Gender improved from

6.5% to 8.8% by 2.3%.

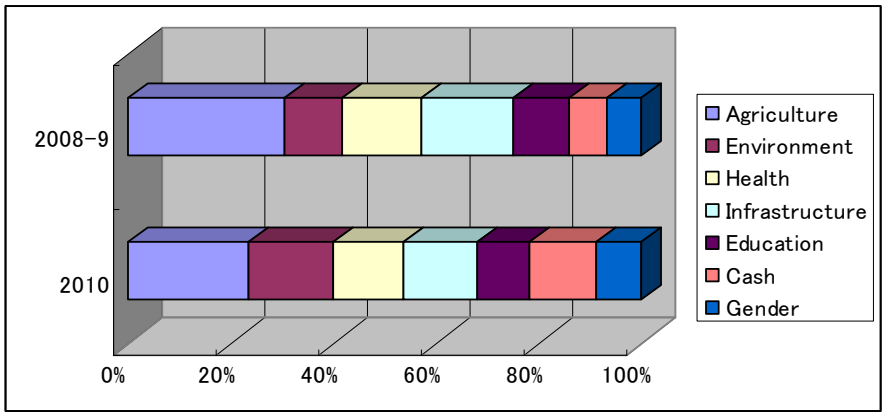


Figure 4.2.2 Change of the Sector/Approach Priorities at Simada

4.2.4 Bugena Woreda

There were not so much changes in higher ranked sector strategies except "Water borne diseases controlled" moved up to the 1st from the 2nd in III. Health Sector, and "Women empowerment increased" also moved up to the 1st from the 2nd in VII. Gender. In I. Agricultural Sector, "Modern Farming practice increased" moved up to the 2nd from the 7th.

Table 4.2.3 Modified Woreda Development Direction of Bugena

Approach I	Priority Strategy	2 yrs ago	Approach II-IV	Priority Strategy	2 yrs ago	Approach V-VII	Priority Strategy	2 yrs ago
I. Agriculture (Agricultural production of Bugena improved.)	I.1. Soil fertility improved.	1	II. Environment (Environment of Bugena protected.)	II.1. Natural resource conserved.	1	V. Infrastructure (Bugena people's access to infrastructure increased.)	V.1. Water supply increased.	1
	I.2. Modern farming practice increased.	7		II.2. Environmental pollution protected.	3		V.2. Road construction increased.	2
	I.3. Livestock health improved.	2	[14.3%, 40/280] (14.8%, 80/542)	II.3. Water / moisture for production increased.	2		V.3. Electricity supply increased.	4
	I.4. Enough livestock food available.	4	III. Health (Health status of Bugena improved.)	III.1. Water borne disease controlled.	2	[11.1%, 31/280] (13.8%, 75/542)	V.4. Tele-structure construction increased.	3
	I.5. Pest and disease controlled.	5		III.2. People get proper medical care.	1	VI. Cash (People of Bugena have enough cash.)	VI.1. Job opportunity to people improved.	1
	I.6. Modern livestock management increased.	8	[13.2%, 37/280] (17.5%, 95/542)	III.3. Combating HTPs increased.	3		VI.2. Farmers sell their produce at good price.	4
	I.7. Soil moisture improved.	3	IV. Education (People of Bugena are educated.)	IV.1. Quality of education increased.	1		VI.3. People's saving practice improved.	2
	I.8. Intensive farming carried out by farmers.	9	[12.1%, 34/280] (12.5%, 68/542)	IV.2. Education access increased.	2	[7.9%, 22/280] (7.7%, 42/542)	VI.4. Controlling high cost of living improved.	3
	I.9. Shortage of land reduced.	10				VII. Gender (Gender issues incorporated to all activities in Bugena.)	VII.1. Women empowerment increased.	2
[35.7%, 100/280] (26.4%, 143/542)	I.10. Livestock bi-product improvement increased.	6				[5.7%, 16/280] (7.2%, 39/542)	VII.2. Women labor work reduced.	1

In Sector/approach priorities in Bugena Woreda, the share of I. Agriculture Sector increased from 26.4% to 35.7% by 9.3%, while III. Health Sector decreased from 17.5% to 13.2% by 4.3%.

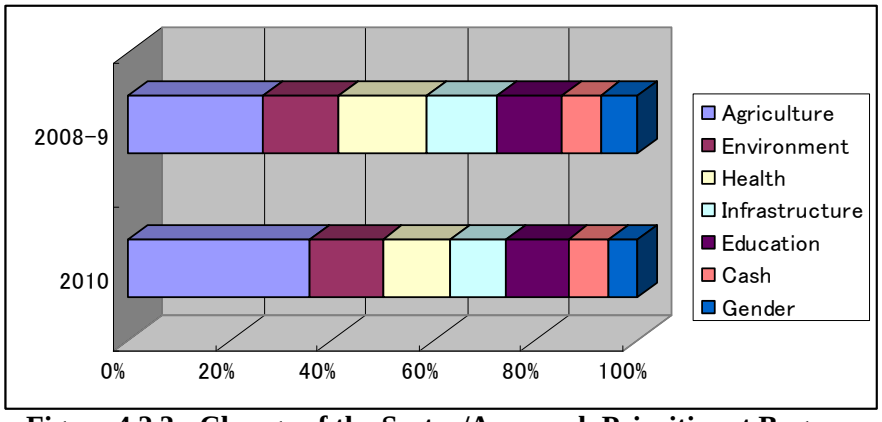


Figure 4.2.3 Change of the Sector/Approach Priorities at Bugena

4.2.5 Gidan Woreda

In Gidan Woreda in I. Agriculture Sector, "Livestock production increased" jumped up to the 1st from the 4th. Also in VI. Cash Sector, "People have enough credit access" moved up to the 1st from the 4th. The changes were not so big in Sector/Approach priorities of Gidan Woreda except III. Health Sector, where the share decreased from 16.3% to 12.8% by 3.5%. The rankings did not change.

Table 4.2.4 Modified Woreda Development Direction of Gidan

Approach I-II	Priority Strategy	2 yrs ago	Approach III-IV	Priority Strategy	2 yrs ago	Approach V-VII	Priority Strategy	2 yrs ago
I. Agriculture (Agricultural production of Gidan improved.)	I.1. Livestock production increased	4	III. Health (Health status of Gidan people improved.)	III.1. People get balanced diet.	1	V. Education (People of Gidan are educated.)	V.1. Access to education to all people increased.	1
	I.2. Crop production and productivity increased.	1		III.2. Preventive measure practicing increased.	2		V.2. Education quality improved.	2
	I.3. Farmers get access to enough improved varieties	2		III.3. Water borne disease controlled.	3		V.3. People get adult education.	N
	I.4. Providing farmers fruit production.	N	[12.8%, 43/337] (16.3%, 83/506)	III.4. People get proper medical care.	4	[12.2%, 41/337] (12.1%, 61/506)	V.4. People get vocational training.	N
[25.2%, 85/337] (24.7%, 125/506)	I.5. Pest and disease occurrence controlled	3	IV. Environment (Environment of Gidan protected.)	IV.1. Natural resources conserved and expansion of improved stoves.	1	VI. Cash (People of Gidan have enough cash.)	VI.1 People have enough credit access.	4
II. Infrastructure (Gidan people's access to infrastructures increased.)	II.1. Road Construction	1		IV.2 Enough water is available for production.	2		VI.2. Farmers have enough alternative income source.	1
	II.2. Water supply and sanitation increased	N		IV.3. Afforestation increased.	N		VI.3. Farmers produce market oriented crops (cash crops).	2
	II.3. Rural electricity improved.	3		IV.4 Undulated lands managed properly.	3		VI.4. People sell their produce at good price.	3
[17.8%, 60/337] (18.6%, 94/506)	II.4. Telecommunication structure construction increased.	2	[12.5%, 42/337] (13.4%, 68/506)	IV.5 Environmental pollution protected.	4	[10.7%, 36/337] (8.5%, 43/506)	VI.5. Farmers saving practice improved.	5
						VII. Gender (Gender issues incorporated to all activities in Gidan.)	VII.1. Women empowerment increased.	1
						[8.9%, 30/337] (6.3%, 32/506)	VII.2. Education of discriminatory attitudes and violence against women and girls.	N

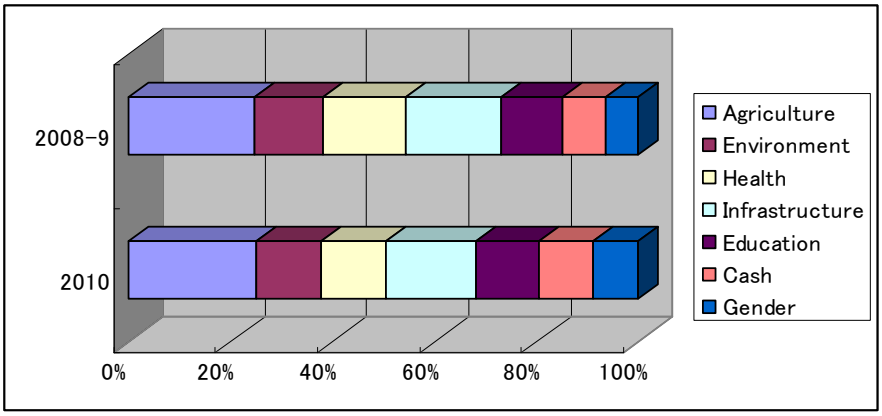


Figure 4.2.4 Change of the Sector /Approach Priorities at Gidan

4.2.6 Kobo Woreda

In Kobo Woreda, the changes of the rankings of priority sector strategies in II. Health and VI. Infrastructure Sector were rather big. I. "People get enough medical care" jumped up to the 1st from the 4th. In VI. Infrastructure Sector, "Water supply improved" also jumped up to the 1st from the 4th. On the other hand, "People get enough potable water" went down to the 4th from the 1st in II. Health Sector.

In Kobo Woreda, I. Agriculture Sector lost 3.8% from 29.6% to 25.8%, while V. Infrastructure Sector increased 2.8% from 7.8% to 11.6%.

Table 4.2.5 Modified Woreda Development Direction of Kobo

Approach I	Priority Strategy	2 yrs ago	Approach II-IV	Priority Strategy	2 yrs ago	Approach V-VII	Priority Strategy	2 yrs ago
I. Agriculture (People of Kobo have enough food.)	I.1. Crop production and productivity increased.	1	II. Health (Health status of Kobo improved.)	II.1. People get enough medical care.	4	V. Infrastructure (Infrastructure of Kobo improved.)	V.1. Water supply improved.	4
	I.2. Crop protection improved.	2		II.2. People's hygiene condition improved.	2		V.2. Transportation improved.	1
	I.3. Conservation practice improved.	4		II.3. Malaria control improved.	3		V.3. People get access to enough electric power.	3
	I.4. Livestock production and productivity improved.	3		II.4. People get enough potable water.	1		V.4. People's communication improved.	2
	I.5. Post harvest handling loss improved.	5	[17.9%, 34/190] (18.2%, 91/500)	II.5. Water borne disease controlled.	5	[11.6%, 22/190] (7.8%, 39/500)	V.5. Modern and well organized market centers constructed.	5
	I.6. Afforestation.	6	III. Education (People of Kobo are educated.)	III.1. People get quality education.	2	VI. Cash (People of Kobo have enough cash.)	VI.1. People get enough income generation improved.	1
[25.8%, 49/190] (29.6%, 148/500)	I.7. Edible food source species conserved.	6	[15.8%, 30/190] (14.2%, 71/500)	III.2. People get basic education.	1	[8.4%, 16/190] (10.4%, 52/500)	VI.2. Saving practice of people improved.	2
			IV. Environment (Environment of Kobo improved.)	IV.1. Natural environment protected.	1	VII. Gender (Gender issues incorporated to all activities of Kobo. / HTPs controlled.)	VII.1. Providing capacity building training.	1
			[13.7%, 26/190] (14.8%, 74/500)	IV.2. Environmental pollution controlled.	2	[6.8%, 13/190] (5.0%, 25/500)	VII.2. Women workload reduced.	2

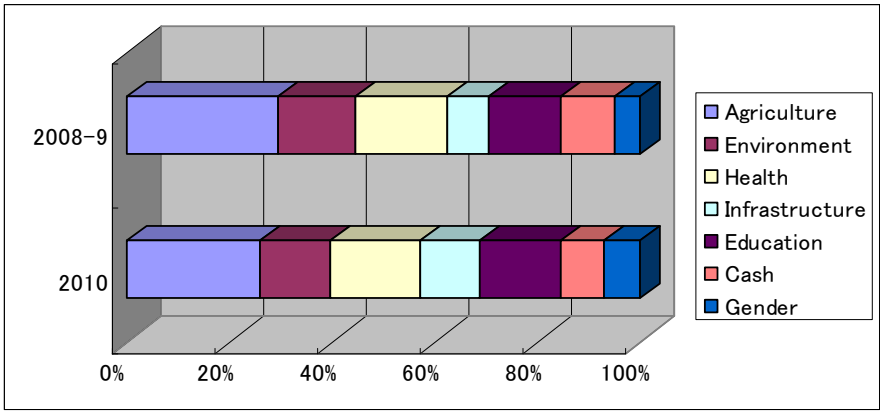


Figure 4.2.5 Change of the Sector /Approach Priorities at Kobo

4.2.7 Mekedela Woreda

No big changes in priority sector strategies except "People get vocational training" was added and became the 1st priority of II. Education Sector. There was a heated discussion on the priority of vocational education and basic education. The majority said the problem of jobless youth was more serious. Also "Decreased HIV prevalence" moved up to the 3rd from the 7th in V. Health Sector.

Table 4.2.6 Modified Woreda Development Direction of Mekedela

Approach I-III	Priority Strategy	2 yrs ago	Approach IV-V	Priority Strategy	2 yrs ago	Approach VI-VII	Priority Strategy	2 yrs ago
I. Agriculture (Agricultural production of Mekedela increased.)	I.1. Drought problem reduced.	1	IV. Infrastructure (Infrastructure of Mekedela constructed.)	IV.1. Road network improved.	1	VI. Gender (Gender issues incorporated in all development activities in Mekedela.)	VI.1. Strengthening women affairs office to do awareness creation activities.	1
	I.2. Crop production and productivity improved.	2		IV.2. Potable water supply coverage increased.	2		VI.2. attitudinal change of community forwards gender increased.	2
	I.3. Livestock production improved.	3		IV.3. Electric provision is improved.	3	[8.1%, 24/298] (4.8%, 22/458)	VI.3. Participation of women in IGA activities increased.	3
[41.6%, 124/298] (34.1%, 156/458)	I.4. Intensive land utilization increased.	4	[10.4%, 31/298] (13.8%, 63/458)	IV.4. communication is improved.	4	VII. Cash (People of Mekedela have enough cash.)	VII.1. Production of food increased.	1
II. Education (People of Mekedela are educated.)	II.1. People get vocational education.	N	V. Health (Health status of Mekedela improved. - Implementing disease preventing measures increased.)	V.1. Personal hygiene.	1		VII.2. Farmers produce market oriented products.	2
	II.2. People get basic education.	1		V.2. Immunization.	3		VII.3. Farmers / people practice proper expenditure.	5
	II.3. People get adult education.	2		V.3. Decreased HIV prevalence.	7		VII.4. People practice saving.	4
[13.8%, 41/298] (10.3%, 47/458)	II.4. People get special need education.	3		V.4. Care and support for PLWHA, OVC and vulnerable group.	8	[6.0%, 18/298] (10.0%, 46/458)	VII.5. People get enough alternative income.	3
III. Environment (Environment of Mekedela protected.)	III.1. Environmental management system increased.	2		V.5. Medical treatment of people increased.	4			
	III.2. Environmental policy and law implemented.	1		V.6. Awareness creation on preventive measures.	6			
[10.4%, 31/298] (10.5%, 48/458)	III.3. Environmental pollution controlled.	3		V.7. Malaria control.	2			
			[9.7%, 29/298] (16.6%, 76/458)	V.8. Awareness creation on medical utilization.	5			

The share of I. Agriculture Sector increased from 34.1% to 41.6% by 7.5%, II. Education Sector from 10.3% to 13.8% by 3.5% and also VI. Gender Sector from 4.8% to 8.1% by 3.3% in Mekedela Woreda, while III. Health Sector decreased from 16.6% to 9.7% by 6.9%, IV. Infrastructure Sector from 13.8% to 10.4% by 3.4% and VII. Cash Sector from 10.0% to 6.0% by 4.0%.

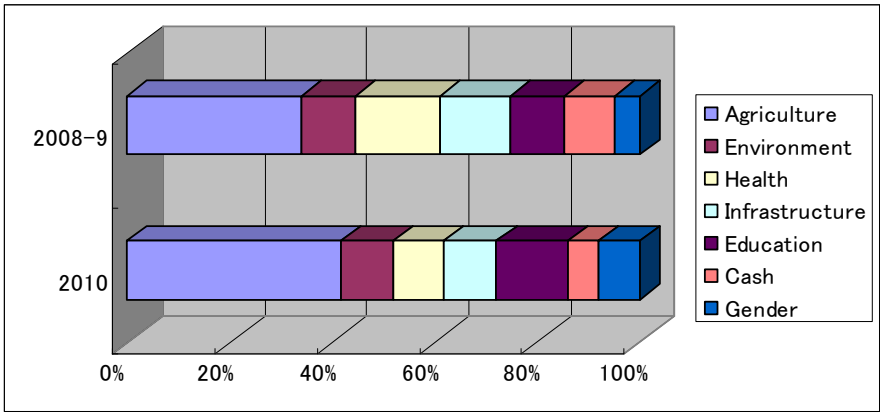


Figure 4.2.6 Change of the Sector /Approach Priorities at Mekedela

4.2.8 Legambo Woreda

For the priorities of sector strategies, "Soil fertility improved" of I. Agriculture Sector moved up from the 5th to the 2nd. Adult education surpassed basic education in V. Education Sector. The priorities of other sector strategies basically remained the same in Legambo Woreda.

Table 4.2.7 Modified Woreda Development Direction of Legambo

Approach I-II	Priority Strategy	2 yrs ago	Approach III-V	Priority Strategy	2 yrs ago	Approach VI-VII	Priority Strategy	2 yrs ago
I. Agriculture (Agricultural production of Legambo increased.)	I.1. People's use of modern agricultural practices improved.	1	III. Infrastructure (Infrastructure of Legambo constructed.)	III.1. Water supply increased.	1	VI. Gender (Gender issues incorporated in all activities in Legambo.)	VI.1. All sector plan gender issues on their annual plan.	1
	I.2. Soil fertility improved.	5		III.2. Road network improved.	2		VI.2. Women empowerment.	3
	I.3. People use different agricultural inputs.	2		III.3. Electrification increased.	4	[8.6%, 18/210] (7.4%, 29/390)	VI.3. Ending HTPs and outlook towards women.	2
	I.4. Forest coverage increased.	6	[12.4%, 26/210] (10.8%, 42/390)	III.4. Telecommunication access improved.	3	VII. Cash (People of Legambo have enough cash.)	VII.1. Agricultural production increased.	1
	I.5. Livestock production increased.	4	IV. Health (Health status of the people of Legambo improved.)	IV.1. People get enough balanced diet.	1		VII.2. People have enough income generating activities.	2
	I.6. People use water resources properly / effectively.	3		IV.2. People get enough potable water.	2		VII.3. Farmers sell their produce at a good price.	3
[28.6%, 60/210] (26.4%, 103/390)	I.7. High market oriented crops produced.	7	[11.9%, 25/210] (14.9%, 58/390)	IV.3. People get enough medical care.	3		VII.4. People's expenditure managed / is economical.	4
II. Environment (Environment of Legambo protected.)	II.1. Soil and water conservation increased.	1	V. Education (People of Legambo are educated.)	V.1. People get access to adult education.	2	[6.7%, 14/210] (11.3%, 44/390)	VII.5. People's saving practice improved.	5
	II.2. Nursery establishment.	2		V.2. People get basic education.	1			
[21.9%, 46/210] (16.7%, 65/390)	II.3. Plantation of forest seedlings and management increased.	3		V.3. People get enough vocational education.	3			
			[10.0%, 21/210] (12.6%, 49/390)	V.4. People get higher education.	4			

In the shares of "budget allocation game", II. Environment Sector increased significantly from 16.7% to 21.9% by 5.2% where VII. Cash Sector decreased from 11.3% to 6.7% by 4.6%. IV. Health Sector (from 14.9% to 11.9% by 4.0%) and V. Education Sector (from 12.6% to 10.0% by 2.6%) also decreased.

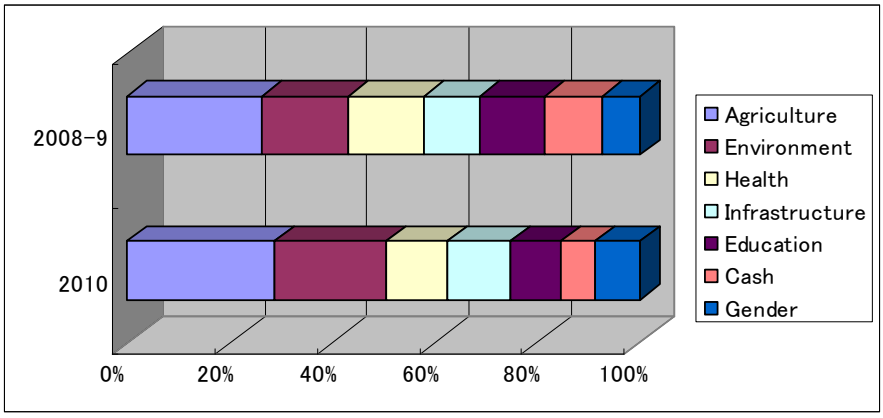


Figure 4.2.7 Change of the Sector /Approach Priorities at Legambo

4.2.9 Aregoba Woreda

There were not so many changes in the priorities of the sector strategies in Aregoba Woreda. "Livestock production and productivity increased" in I. Agriculture Sector went up from the 6th to the 3rd and "Pest infestation is controlled" from the 3rd to the 2nd.

Table 4.2.8 Modified Woreda Development Direction of Aregoba

Approach I	Priority Strategy	2 yrs ago	Approach II-III	Priority Strategy	2 yrs ago	Approach IV-VII	Priority Strategy	2 yrs ago
I. Agriculture (Agricultural and livestock production of Ebinat increased.)	I.1. Soil moisture is improved.	1	II. Infrastructure (Infrastructure of Aregoba improved.)	IV.1. Road construction improved.	1	IV. Environment (Environment of Aregoba protected.)	IV.1. Natural resource conserved.	1
	I.2. Pest infestation is reduced.	3		IV.2. Electricity supply increased.	2	[12.4%, 36/291] (4.8%, 26/539)	IV.2. Watershed conserved.	2
	I.3. Livestock production and productivity improved.	6		IV.3. Telecom structure increased.	3	V. Education (People of Aregoba are educated.)	V.1. Education for all (access).	1
	I.4. Soil fertility is improved.	2	[19.2%, 56/291] (27.6%, 149/539)	IV.4. Postal service established.	3	[11.0%, 32/291] (16.0%, 86/539)	V.2. Quality of education for all.	2
	I.5. Livestock forage improved.	8	III. Health (Health status of Aregoba people improved.)	III.1. People get enough potable water.	1	VI. Gender (Gender issues incorporated to all activities in Aregoba.)	VI.1. HTPs controlled.	2
	I.6. Farmers practice modern agricultural practices.	4		III.2. People get enough knowledge on hygiene and sanitation.	2	[10.3%, 30/291] (2.2%, 12/539)	VI.2. Gender mainstreaming improved.	1
	I.7. Communal irrigable area increased.	5		III.3. People get enough knowledge about family health.	3	VII. Cash (People of Aregoba have enough cash.)	VII.1. People get enough access to jobs.	2
[24.4%, 71/291] (22.3%, 120/539)	I.8. Improved livestock breed.	7		III.4. People get enough knowledge on HIV/AIDS.	4	[7.9%, 23/291] (8.3%, 45/539)	VII.2. Production of market oriented crop increased.	1
			[14.8%, 43/291] (18.7%, 101/539)	III.5. People get proper medical care.	5			

The shares of IV. Environment Sector and VI. Gender Sector improved significantly. IV. Environment increased 7.6% from 4.8% to 12.4%, and VI. Gender increased 8.1% from 2.2% to 10.3%. III. Health Sector decreased by 3.9%, IV. Infrastructure by 8.4% and V. Education by 5.0%.

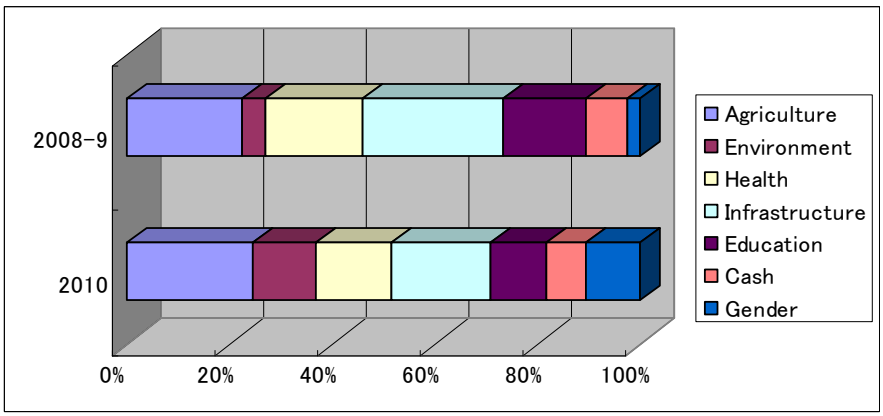


Figure 4.2.8 Change of the Sector /Approach Priorities at Aregoba

4.2.10 Summary of Woreda Development Directions

From the comparison of the results of the review, several interesting facts could be recognized:

(1) Agricultural Sector accounted for more than 1/3 in Mekedela and Bugena Woredas.

(2) Environment Sector accounted for more than 20% in Ebinate and Legambo Woredas.

(3) The share of Health and Education Sectors of Kobo Woreda was the highest among the eight Woredas.

(4) Infrastructure Sector accounted for close to 20% in Gidan and Aregoba Woredas.

(5) Cash Sector of Simada accounted for 13% and was the highest among the eight Woredas.

Agriculture Sector was the most important sector in all the eight Woredas, however, other alternatives for income needed to have more attentions especially in the Woredas like Simada, Aregoba and Gidan. Environment Sector was almost as important as Agriculture Sector in Ebinate and Legambo Woredas.

Also "Decreased HIV prevalence" moved up to the 3rd from the 7th in V. Health Sector.

Table 4.2.9 Priority of Budget Allocation by Sector

	Mekedela	Bugena	Ebinate	Legambo	Kobo	Gidan	Aregoba	Simada	Average
Agriculture	41.6%	35.7%	28.8%	28.6%	25.8%	25.2%	24.4%	23.6%	29.2%
Environment	10.4%	14.3%	20.1%	21.9%	13.7%	12.5%	12.4%	16.2%	15.2%
Health	9.7%	13.2%	15.3%	11.9%	17.9%	12.8%	14.8%	13.9%	13.7%
Infrastructure	10.4%	11.1%	8.0%	12.4%	11.6%	17.8%	19.2%	14.4%	13.1%
Education	13.8%	12.1%	12.2%	10.0%	15.8%	12.2%	11.0%	10.2%	12.1%
Cash	6.0%	7.9%	8.0%	6.7%	8.4%	10.7%	7.9%	13.0%	8.6%
Gender	8.1%	5.7%	7.6%	8.6%	6.8%	8.9%	10.3%	8.8%	8.1%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

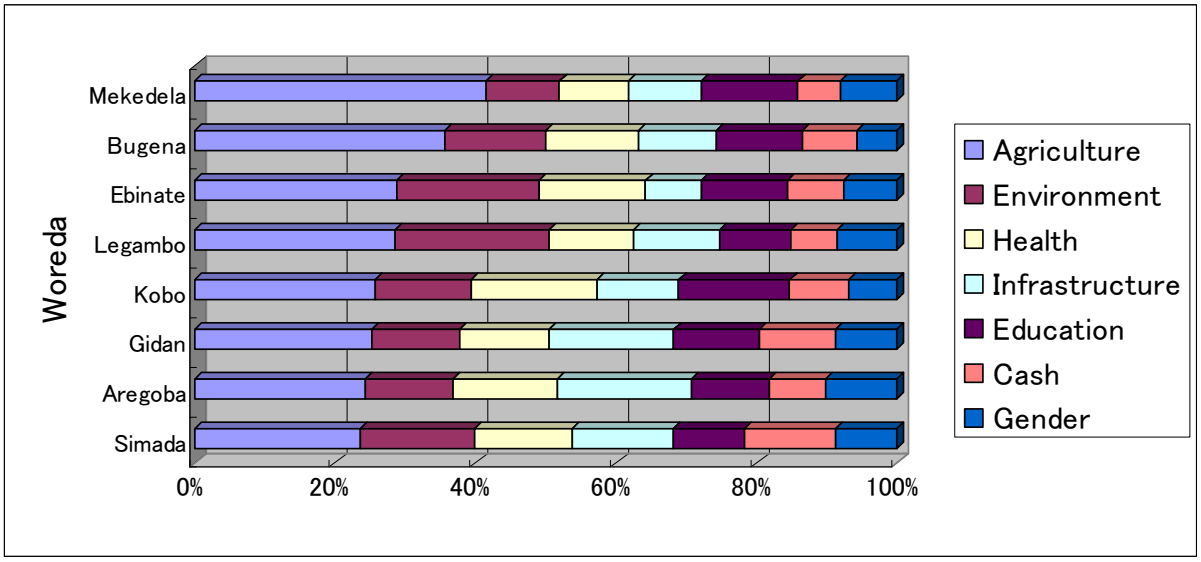


Figure 4.2.9 Priority of Budget Allocation by Sector

From the priority sector strategies of Agricultural Sector of the eight Woredas, several differences among the Woredas could be identified:

(1) Soil Fertility was No.1 in Ebinate and Bugena and No.2 in Legambo Woredas.

(2) Modern Farming Practices was No.1 in Legambo, No.2 in Simada and Bugena Woredas.

(3) Soil Moisture and Water was No.1 in Mekedela and Aregoba, and No.2 in Ebinate Woreda.

(4) Livestock Production was No.1 in Gidan, N0.3 in Mekedela and Aregoba Woredas.

(5) Pest and Disease Control was No.2 in Kobo and Aregoba Woredas.

It seemed that the Woreda officers considered South Gondar Zone (Ebinate and Simada Woredas) and up to Bugena Woreda of North Wollo Zone were more farming oriented, where Gidan and Kobo Woredas of North Wollo Zone and South Wollo Zone (Mekedela, Legambo and Aregoba Woredas) were for both farming and livestock.

Table 4.2.10 Priority Sector Strategies of Agriculture Sector

Zone	South Gondar		North Wollo			South Wollo		
Woreda	Ebinate	Simada	Bugena	Gidan	Kobo	Mekedela	Legambo	Aregoba
Soil fertility is improved.	1	5	1	See Note		See Note	2	4
Farmers use modern farming practice. / Agricultural system is modern.	3	2	2				1	6
Soil moisture and water increased. / Access of irrigation increased. / People use water resources properly and effectively. / Drought problem reduced.	2	8	7			1	6	1
Crop production and productivity increased.				2	1	2		
Livestock production increased. / Livestock production and productivity improved.		9		1	4	3	5	3
Pest and disease prevalence controlled. / Crop protection improved.	7	7	5	5	2			2
Strategy disseminating new extension approach.		1						
Crop variety improved. / Farmers get enough improved varieties of crops. / Edible food source species conserved. / High market oriented crops produced.	4	6		3	7		7	
Forage production increased.	6	11	4					5
Intensive use of land increased.		3	8			4		
Livestock health improved. / Livestock disease prevalence decreased.	8	12	3					
Livestock management improved. / Farmers use enough modern animal husbandry.	5	10	6					
Farmers use enough agricultural inputs. / Farmers use different agricultural inputs.		4					3	
Afforestation. / Forest coverage increased.					6		4	
Conservation practice improved.					3			
Fruit production.				4				
Post harvest handling loss improved.					5			
Access of irrigation increased. / Communal irrigable land increased.		8						7
Farmers use enough improved livestock breeds. / Improved livestock breed.	9	13						8
Shortage of land reduced.			9					
Livestock bi-product improvement increased.			10					

Note: Priorities were not given to these strategies because Gidan and Kobo Woredas chose a general "Crop production and productivity increased" as a strategy.

CHAPTER 5 VERIFICATION PROJECT

Verification project had been implemented in the 8 model watersheds in the 8 target Woredas since April 2009 so as to get various experiences throughout the project implementation period. It was comprised of three components, namely agricultural promotion, natural resource management and livelihood improvement.

5.1 Outline

(1) Sites for Verification Project

Prior to the implementation of Woreda level workshops in 2008, the Study Team requested each Woreda to select one model watershed representing the Woreda as a site for the verification project. Followings are the selected sites for verification project in the 8 target Woredas.

Table 5.1.1 Verification Project Sites of the 8 Target Woredas

Zone	South Gonder		North Wollo			South Wollo		
Woreda	Ebinate	Simada	Bugena	Gidan	Kobo	Aregoba	Legambo	Mekedela
Watershed	Silasie-mesk	Woiraye	Keyberet	Tejno	Amid	Senbo	Assoye	Tebi
Related Kebele	Michena	Engudadar	Burko	Mewat	Buhoro	Fetekoma, Debea	Kindo	Tebi

Senbo watershed in Aregoba extends over the two Kebeles, Fetekoma and Debea, because the main stream in the watershed is a boundary of these Kebeles.

As for the livelihood improvement component, in some Woredas, the implementation sites were out of the above model watersheds. This resulted from the fact that the activities for livelihood improvement (e.g. vocational training, HIV/AIDS association support, etc.) were rather human activity basis but not location specific very much as compared to agricultural promotion and natural resource management activities.

(2) Schedule

According to the Japanese fiscal system, the period for verification project implementation was divided into two terms as shown below.

Table 5.1.2 Implementation Terms of the Verification Project

Term	Period
Term I	From April to July 2009
Term II	From September 2009 to December 2010

(3) Implementation Organizations

Generally, implementation organizations depended on the project/component contents. However, the following three stakeholders were key stakeholders.

- Participating people (local residents who did various activities)
- Development Agents (agriculture, livestock and natural resources)
- Kebele/Woreda officers related to the activity/component

Local people/groups were certainly the most important stakeholders, but the Development Agents

(DAs) had a vital role for the verification project because they were the closest interface with the local people, in particular, for agricultural promotion and natural resource management components. Woreda officers also had important roles for technical support. As for the livelihood improvement component, Woreda offices of the related organizations such as WAB and SME (Small & Micro scale Enterprise Office) performed important roles for the activity implementation in some Woredas.

Because the counterpart organizations of this Study were FSCDPO (for coordination) and BoARD (for implementation), their branch office at each Woreda (WAO) was an important organization for the verification project. Their Zone Offices supervised and monitored the activities in the designated Woredas. The Study Team did overall coordination and technical advice provision. Also the subcontracted NGO (ORDA) was an important actor for the implementation of the verification project since it managed material procurement, budget transfer as well as technical advice for several activities. The organizational framework for the implementation of the verification project is indicated below.

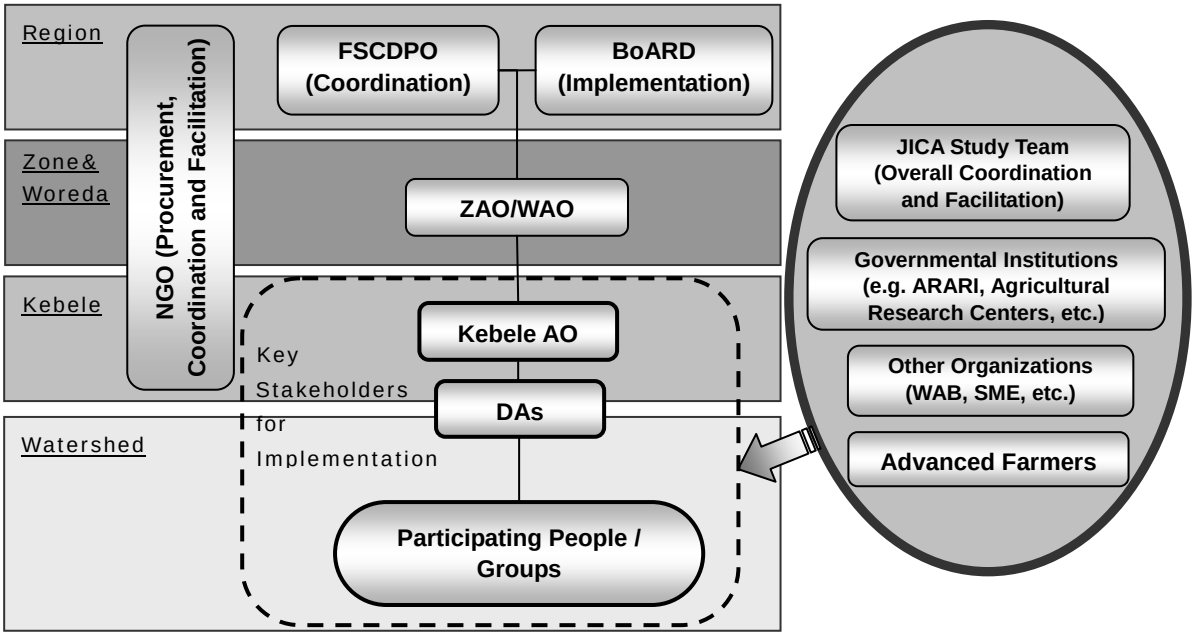


Figure 5.1.1 Organizational Framework for Implementation of the Verification Project

(4) Components/Activities

As described above, field level activities were categorized into three components, namely, agricultural promotion, natural resource management and livelihood improvement. Each component included various kinds of activities. The summary of activities and cost by component is shown in the following pages.

Here it is necessary to mention the relation between Woreda development plans and verification projects. At first, it was intended to connect the Woreda development plans and the verification projects directly, but, due to the following reasons, it resulted in less connection between the plans and the projects.

Table 5.1.3 Summary of the Verification Project by Component (Apr. 2009 – Dec. 2010)

Zone		Type	S. Gonder		North Wello			South Wello			
Woreda		T: Trial, D/A: Demonstration/Application, E: Extension	Ebinate	Simada	Bugena	Gidan	Kobo	Mekedela	Legambo	Aregoba	*No. of the Project Sites*
Watershed			Silasiemesk	Woiraye	Keyberet	Tejno	Amid	Tebi	Assoye	Senbo	
I. Agricultural Promotion Component (M: Meher season activity, B: Belg season activity)											-
1. Demonstration/Verification Plot: Primary Crops	Crop	D/A	M	M	M	B,M	M	B,M	B		*7*
2. Demonstration/Verification Plot: Secondary Crops	Crop	D/A				M					*1*
3.1 Simple Trial on Promising Crops & Farming Practices	Crop	T	M	M	M	M	M	B,M	M	M	*8*
3.2 Simple Trial (in collaboration with RCs)	Crop	T	M					M	M	M	*4*
4. Fruit Production Campaign	Crop	D/A	M	M	M			M	M		*5*
5. Preliminary Trial on Agro-forestry	Crop	T, D/A			M	M				M	*3*
6. Sunflower Production	Income generation	E			M						*1*
7. Forage Development (surround of farmland)	Livestock	T, D/A		M	M	M		M	M	M	*6*
8. Hillside Forage Development	Livestock	T, D/A	M	M	M	M	M		M		*6*
9. Sheep Breed Improvement	Livestock	D/A	M	B			M	M	M		*5*
10. Small-scale Fish Farming	Livestock	T						M			*1*
11. Introduction of AI Service	Livestock	E	B				M				*2*
12. Veterinary Services Strengthening	Livestock	D/A								B	*1*
13. Kebele Veterinary Agent Training	Livestock	D/A			B						*1*
14. Inset Processing Training	Extension	D/A	B								*1*
15. IPM Training	Extension	D/A								M	*1*
16. WS Community Vegetable Nursery Development	Extension	D/A		B							*1*
17. Women Association Strengthening	Income generation	D/A	B								*1*
18. Sheep Fattening	Income generation	E			M	M					*2*
19. Modern Bee Hive Package	Income generation	E	M	M	M	M	M				*5*
20. Small-scale Poultry Farming Promotion	Income generation	E				B	B	M		M	*4*
21. FTC Farm Improvement	Extension	D/A	B,M	M	B,M	M	M	M	B,M	M	*8*
No. of activities			*11*	*9*	*11*	*10*	*8*	*9*	*8*	*8*	74
II. Natural Resource Management Component											-
1. Production of Tree Seedling	Within watershed	D/A	✓	✓	✓	✓	✓	✓	✓	✓	*8*
2. Afforestation	Within watershed	D/A	✓	✓	✓	✓	✓	✓	✓	✓	*8*
3. Soil and Water Conservation Structure	Within watershed	D/A	✓	✓	✓	✓	✓	✓	✓	✓	*8*
4. Gully Rehabilitation	Within watershed	D/A	✓	✓	✓	✓	✓	✓	✓	✓	*8*
5. Capacity Building			✓	✓	✓	✓	✓	✓	✓	✓	*8*
No. of activities			*5*	*5*	*5*	*5*	*5*	*5*	*5*	*5*	40
III. Livelihood Improvement Component											-
1. Aquaculture for youth association support (WARDO)	Out of watershed	D/A	✓								*1*
2. Improved heifer introduction for HIV/AIDS association support (WARDO)	Out of watershed	D/A	✓								*1*
3. Spring & hand dug well development (WARDO)	Within watershed	D/A		✓							*1*
4. Roof rainwater harvesting facilities (Water Office)	Within watershed	T, D/A			✓					✓	*2*
5. Ewe keeping training for women (Women's Affair)	Out of watershed	D/A				✓					*1*
6. Business skill training for PLWHA people (HIV/AIDS)	Out of watershed	D/A				✓					*1*
7. Vocational training (carpentry, sewing and brick production) (SME)	Out of watershed	D/A				✓	✓				*2*
8. Gender mainstreaming (Women's Affair)	Out of watershed	D/A					✓				*1*
9. School support (construction, library and hand dug well) (Edu. Office & school)	Out of watershed	D/A					✓	✓			*2*
10. Business shed construction for youths (SME)	Out of watershed	D/A							✓		*1*
11. Goat fattening training for jobless people (SME)	Out of watershed	D/A								✓	*1*
No. of activities			*2*	*1*	*1*	*3*	*3*	*1*	*1*	*2*	14
Total Number of Activities											-
			18	*15*	*17*	*18*	*16*	*15*	*14*	*15*	128

Table 5.1.4 Summary of the Verification Project Cost by Component

Direct Cost (transferred to Woreda)

Component		Phase	Duration	Ebinate	Simada	Bugena	Gidan	Kobo	Mekedela	Legambo	Aregoba	Total	Grand Total	Distribution
1.	Agricultural Promotion	Phase-I *1	April 2009 - July 2009	48,862	98,973	57,204	60,658	54,365	77,639	26,080	55,990	479,771	998,871	36.8%
		Phase-II-1*2	December 2009 - April 2010	34,800	27,800	22,500	22,300	13,000	24,000	19,500	12,000	175,900		
		Phase-II-4	April 2010 - July 2010	20,600	43,300	58,800	53,000	19,200	57,500	36,600	54,200	343,200		
2.	Natural Resource Management	Phase-I	April 2009 - July 2009	20,000	30,000	20,000	20,000	20,000	20,000	20,000	10,935	160,935	647,571	23.9%
		Phase-II-2*2	January 2010 - July 2010	85,174	84,774	37,440	44,692	45,580	63,440	84,074	41,462	486,636		
3.	Livelihood Improvement	Phase-II-3	April 2010 - July 2010	70,000	35,000	207,000 *	50,000	70,000	50,000	40,000	267,000 *	789,000	906,300	33.4%
		Phase-II-5	October 2010 - December 2010	0	0	55,000	0	0	0	0	62,300	117,300		
4.	Good Practice	Phase-I	January 2009 - July 2009	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	160,000	160,000	5.9%
Total				299,436	339,847	477,944	270,650	242,145	312,579	246,254	523,887	2,712,742	2,712,742	100.0%

*Including direct cost related to Watertank (Budget was transferred to ORDA)

Training Cost (transferred to Research Center and ORDA)

Component		Phase	Duration	Ebinate	Simada	Bugena	Gidan	Kobo	Mekedela	Legambo	Aregoba	Total	Grand Total	Distribution
1.	Agricultural Promotion	Phase-I	April 2009 - July 2009	12,200		81,020						93,220	222,720	77.7%
		Phase-II-1	December 2009 - April 2010	0	0	0	0	0	0	0	0	0		
		Phase-II-4	April 2010 - July 2010	20,000		0	0	56,800				129,500		
				24,000					28,700					
2.	Natural Resource Management	Phase-I	April 2009 - July 2009	0	0	0	0	0	0	0	0	0	63,748	22.3%
		Phase-II-2	January 2010 - July 2010	32,458		31,290						63,748		
3.	Livelihood Improvement	Phase-II-3	April 2010 - July 2010	0	0	0	0	0	0	0	0	0	0	0.0%
		Phase-II-5	October 2010 - December 2010	0	0	0	0	0	0	0	0	0		
4.	Good Practice	Phase-I	January 2009 - July 2009	0	0	0	0	0	0	0	0	0	0	0.0%
Total				56,329	32,329	18,718	18,718	32,918	61,618	32,918	32,918	286,468	286,468	100.0%

*1: From ORDA transfer records minus total of Natural Resource Management + Good Practice

*2: From ORDA Completion Report

- The Woreda development plans with project proposals were made in February/March 2009 after the commencement of verification project arrangement.
- The project proposals were relatively large-scale; hence, they were beyond the verification project budget scale.
- The intention of verification project was to implement various activities for the purpose of verification, not concentrating on a few specific projects for extensive implementation.
- Though model watershed was selected as a representative watershed which contains common issues in each Woreda, the situations and needs of the model watershed were not the same as the analysis results and project proposals, which were derived from the Woreda level workshops.

Although most activities weren't directly derived from the Woreda development plans, they had, as a result, relations to many programs/projects in the Woreda development plans. The relations of the verification project to the draft Woreda development plans are shown in Appendix F-6.

5.2 Agricultural Promotion Component

5.2.1 Planning and Implementation of Agricultural Verification Activities

(1) Introduction

The verification activities for agricultural promotion under the Verification Project of the Study were carried out in 2 years from 2009 to 2010 in the target 8 watershed (micro-watershed) of the 8 food insecure Woredas, Ebinate & Simada in South Gonder Zone and Bugena, Gidan & kobo in North Wollo Zone and Mekedela, Legambo & Aregoba in South Wollo Zone.

The verification activities for agricultural promotion (APVAs) were planned and implemented: i) to verify the adoptability of the proposed approaches for agricultural promotion in the food insecure Woredas formulated in the present Study as discussed in the section 3.3.11 and the following section (2), ii) to assess the capabilities of WAOs and DAs for implementing APVAs, and iii) to evaluate performances, results and findings of individual verification activities for agricultural promotion (APVAs) in the target watersheds and to extract lessons learned from the implementation of APVAs.

(2) Formulation of Agricultural Verification Activities

The process employed for the formulation of verification activities for agricultural promotion (APVAs) for the study period (2009 & 2010) in the target watersheds are illustrated as follows;

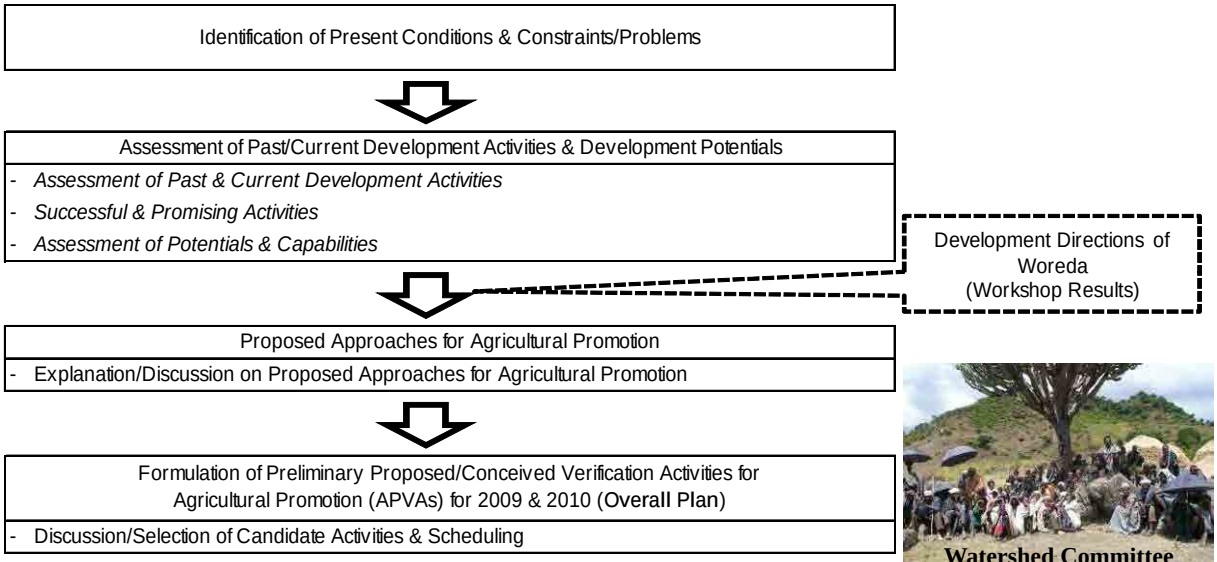


Figure 5.2.1 Process for Formulation of APVAs

Watershed Committee (WSC) Meeting Ebinate

WSC Meeting Bugena

The formulation of the preliminary proposed/conceived verification activities for agricultural promotion was made through the participatory approach of stakeholders, WAO, DAs, watershed community & the Study Team. The proposed approaches for agricultural promotion in the target watersheds applied for the formulation is shown in Figure 5.2.2. In the formulation, the activities conceived and proposed by the Study Team include: **i) demonstration/verification plots, ii) simple adaptive trial, iii) fruit production, and iv) forage development**.

The preliminary plans had been scrutinized by the Study Team based on technical practicability, capabilities of WAO/DAs, timing & assignment schedules of the Study Team, budget availability and other factors and the overall plans for the agricultural verification activities in 2009 & 2010 had been formulated as the **Overall Proposed & Conceived Verification Activities for Agricultural Promotion in 2009 & 2010 (overall plan**; reported in the Interim Report April 2009). A sample of the overall plan of APVAs formulated accordingly is presented in Table 5.2.1.

The meher season activities for 2009 planned in the overall plan were carried out as the APVAs for the meher season 2009. The agricultural verification activities for the belg season 2009/10 and the meher season 2010 were formulated through the formulation discussions held with the Technical Committee (TC). The formulation was made on the basis of the said **overall plan**. In the formulation, findings, results and lessons learned of the meher season 2009 activities and comments and requests of watershed communities participated in the APVAs were taken into account to an extent possible.

In the meher season 2010, no income generation sub-sector activities were planned because: i) most of such activities conceived in the overall plan for 2009 & 2010 were satisfactory carried out in the meher season 2009, ii) income generation activities were planned in the livelihood improvement component, and iii) priority was placed on more agricultural promotion oriented activities within the limited budget allocation for the APVAs. Most of crop trial activities (simple trials) in the meher season

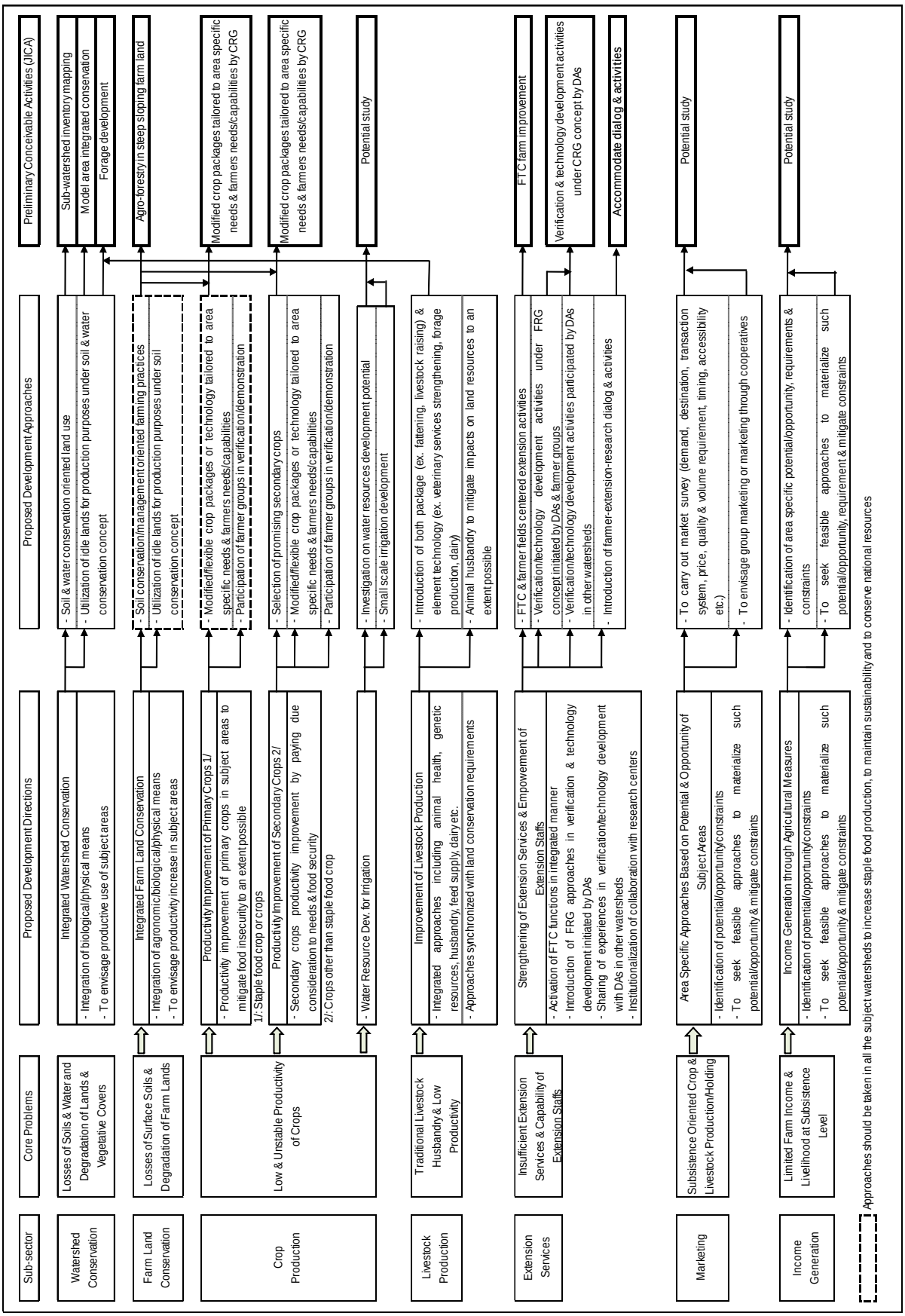
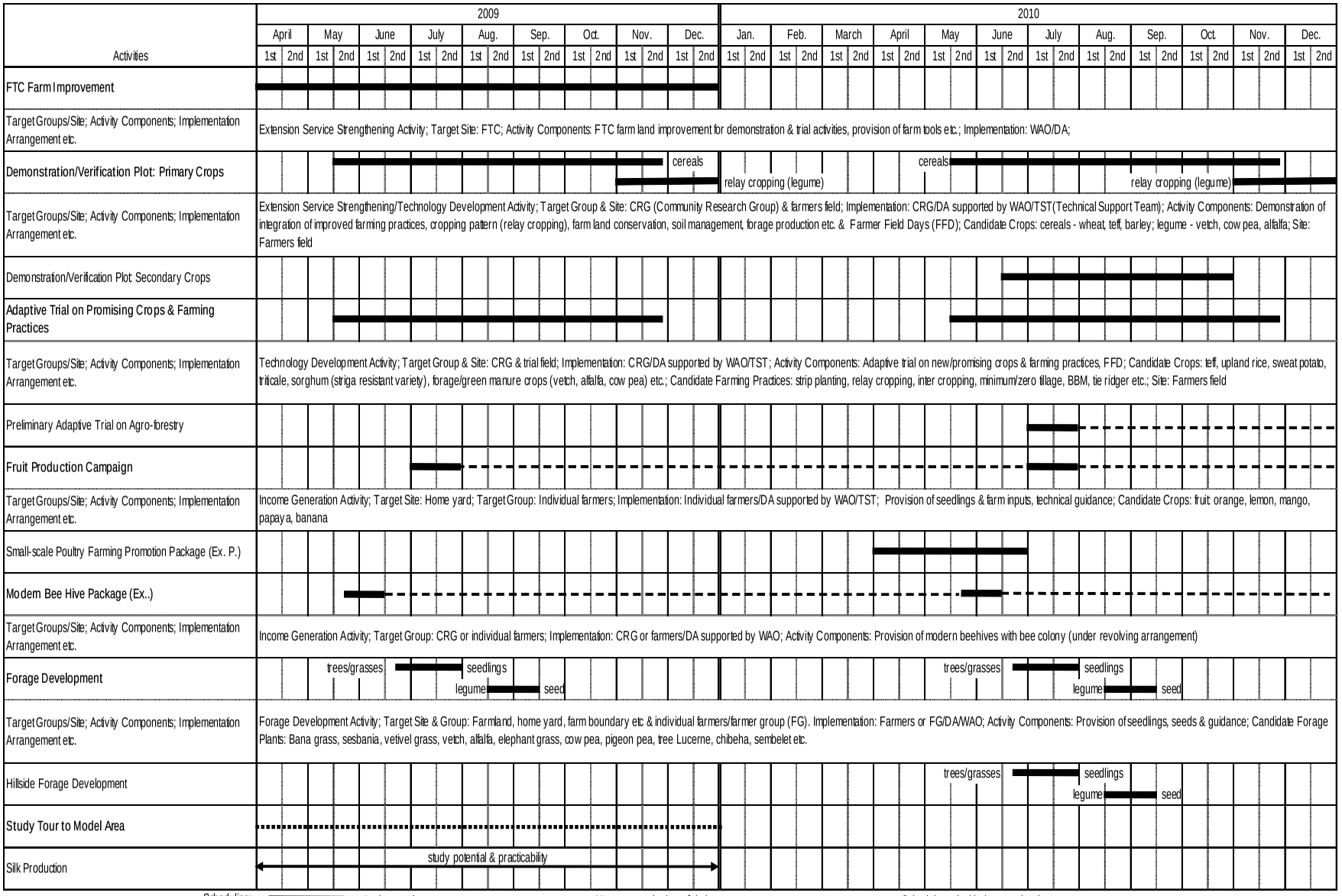


Figure 5.2.2 Proposed Approaches for Agricultural Promotion in the Target Watersheds

Table 5.2.1 Sample of Proposed/Conceived Verification Activities (APVAs)



1/: As of March 18, 2009; Activities for 2010 shall be reviewed based on performances in 2009

2010 were carried out by the Agricultural Research Centers (Adet & Sirinka ARCs) in collaboration with WAOs/DAs, aiming at transferring of trial skills to WAOs/DAs and ensuring quality improvement of the activity. Further the technical guidance & support activities of Bahir Dar Agricultural Mechanization & Food Science Research Center (BAMaFSRC) and Bahir Dar Fishery & Other Aquatic Life Research Center (BAFOALRC) were accommodated in the APVAs in the season.

(3) Agricultural Verification Activities Implemented

The APVAs implemented by WAOs in the three (3) seasons are as follows;

Table 5.2.2 APVAs Implemented by Season & Overall Features

Activity	No. of APVAs Implemented			
	Season			Total
	2009 Meher	2009/10 Belg	2010 Meher	
1. Demonstration/Verification Plot: Primary Crops	6 (15 plots)	3 (12 plots)	6 (21 plots)	15 (48 plots)
2. Demonstration/Verification Plot: Secondary Crops			1 (1 plot)	1 (1 plot)
3-1. Simple Trial on Promising Crops & Farming Practices	8	1	2	11
3-2. Simple Trial (in collaboration with ARCs)			5	5
4. Fruit Production Campaign	2		4	6
5. Preliminary Trial on Agro-forestry	2		1	3
6. Sunflower Production	1			1
7. Forage Development (surround of farmland)	6		2	8
8. Hillside Forage Development	3		3	6
9. Sheep Breed Improvement	3	1	2	6
10. Small-scale Fish Farming			1	1
11. Introduction of AI Service		1	1	2
12. Veterinary Services Strengthening		1		1
13. Kebele Veterinary Agent Training		1		1
14. Inset Processing Training		1		1
15. IPM Training			1	1
16. WS Community Vegetable Nursery Development		1		1
17. Women Association Strengthening		1		1
18. Sheep Fattening	2			2
19. Modern Bee Hive Package	5			5
20. Small-scale Poultry Farming Promotion	2	2		4
21. FTC Farm Improvement	8	3	3	14
No. of Activities Implemented	48	16	32	96

As shown in the table, the numbers of APVAs implemented by WAO were 48, 16 and 32 activities respectively in the meher season 2009, belg season 2009/10 and meher season 2010. In total, 21 different activities were implemented by WAO and cumulatively 96 activities for agricultural promotion (APVAs) were implemented in the 8 target watersheds under the Verification Project.

The APVAs implemented by WAO are categorized into 4 development sub-sectors of: i) crop production, ii) livestock production, iii) extension services, and iv) income generation. The number of APVAs is summarized by sub-sector in the following table.

Table 5.2.3 Number of Verification Activities by Development Sub-sector

Sub-sector	Verification Activity	No. of Activities
Crop Production	Demonstration/Verification Plot: Primary Crops	15
	Demonstration/Verification Plot: Secondary Crops	1
	Simple Trial on Promising Crops & Farming Practices	16
	Fruit Production Campaign	6
	Preliminary Trial on Agro-forestry	3
	Sunflower Production	1
	Sub-total	42
Livestock Production	Forage Development (surround of farmland)	8
	Hillside Forage Development	6
	Sheep Breed Improvement	6
	Small-scale Fish Farming	1
	Introduction of AI Services	2
	Veterinary Services Strengthening	1
	Kebele Veterinary Agent Training	1
	Sub-total	25
Extension Services	Inset Processing Training	1
	IPM Training	1
	FTC Farm Improvement	14
	Sub-total	16
Income Generation/Crop Production	WS Community Vegetable Nursery Development	1
	Women Association Strengthening	1
	Sub-total	2
Income Generation/Livestock Production	Modern Bee Hive Package	5
	Small-scale Poultry Promotion Package	4
	Sheep Fattening	2
	Sub-total	11
Total		96

The technical guidance & support activities carried out by the agricultural research centers (ARCs) under the verification activities were as follows.

Table 5.2.4 Guidance & Support Activities by ARCs

ARC	Guidance & Support Activity
Adet ARC	Field technical guidance & simple trial in collaboration with WAO Ebinate
Sirinka ARC	Integrated Crop Management (ICM) Training,, joint field guidance, simple trial in collaboration with WAOs
BAMaFSRC	Demonstration on single ox harnessing system, Ebinate & Simada, preparation of a teff compaction roller
BAFAOLRC	Preliminary survey for fishery development in Tebi Reservoir of Mekedela Woreda, field guidance on small-scale fish farming in Tebi watershed

5.2.2 Demonstration/Verification Plot: Primary & Secondary Crops

(1) General

The demonstration/verification plot is one of the primary crop production sub-sector activities and was implemented in all the target watersheds except the watershed in Aregoba. The activities were carried out in every cropping season of the meher seasons of 2009 & 2010 and belg season 2009/10. The activities implemented in the 7 target watersheds are summarized as follows.

Table 5.2.5 Demonstration/Verification Plot Activity by Woreda

Woreda	Season	No. of Plots	No. of CRGs	Crops	Crop Performances/Remarks
Ebinate	meher 2009	2	2	2 (barley, teff)	teff: more than satisfactory; barley: not satisfactory
	meher 2010	3	3	3 (barley, wheat, teff)	barley: satisfactory; wheat/teff: satisfactory/more than satisfactory
Simada	meher 2009	3	3	3 (wheat, triticale, teff)	barley/wheat: satisfactory; teff: more than satisfactory
	meher 2010	4	4	4 (wheat, triticale, maize, teff)	wheat: not satisfactory (ununiform germination)
					maize/triticale: satisfactory/more than satisfactory
					teff: more than satisfactory
Bugena	meher 2009	3	3	3 (barley, wheat, teff)	barley/teff: satisfactory; wheat: satisfactory/more than satisfactory
	meher 2010	4	4	4 (barley, wheat, teff, faba beans)	barley: satisfactory/more than satisfactory
					wheat: more than satisfactory
					teff/faba beans not satisfactory; faba beans: affected by disease
Gidan	meher 2009	2	2	2 (barley, wheat)	barley: not satisfactory; wheat (broadcasting): not satisfactory
					wheat (row planting): satisfactory to more than satisfactory
	belg 2009/10	2	2	2 (barley, wheat)	not satisfactory (suffered from shortage of rain in later stage)
	meher 2010	2	2	2 (barley, wheat)	barley: satisfactory; wheat: satisfactory/more than satisfactory
	meher 2010	1	1	1 (2ry crop, faba beans)	growth satisfactory; but damaged by frost
Kobo 1/	meher 2009	3	3	3 (sorghum, maize, teff)	sorghum/maize/teff: not satisfactory (affected by drought)
	meher 2010	7	-	4 (sorghum, maize, teff, groundnut)	sorghum/maize: not satisfactory; teff: satisfactory
					groundnut: satisfactory/not satisfactory
Mekedela	meher 2009	2	1	2 (wheat, teff)	wheat/teff: satisfactory (wheat: uneven growth)
	belg 2009/10	8	2	4 (wheat, lentil, fenugreek, vegetable)	wheat/fenugreek: satisfactory (furrow irrigation not practiced)
					lentil/vegetable: not satisfactory
Legambo	belg 2009/10	2	2	2 (barley, potato)	satisfactory (barley: furrow irrigation not practiced)
Aregoba					6 plots planned in 2010 but not implemented
Total		48	34	41 crops (cumulative)	

1/: Beneficiaries in meher 2010 is 7 farmers

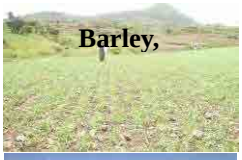
(2) Activity Descriptions

The descriptions of the demonstration/verification plot activity are as follows;

Objectives	Demonstration/verification of integrated approaches for the improvement of productivity of primary & secondary crops and farmland conservation in the watershed
Activity Description	Establishment of demonstration/verification plot(s) for the integrated approaches for the productivity improvement & farmland conservation
Activity Components	- Formation of CRG (Community Research Group; 5 members) by DA/WAO - Provision of farm inputs (seed, chemical fertilizer, chemicals [if necessary]), farm tools (if necessary), labor cost for farmland conservation, technical guidance - Farmer Field Day (FFD): 3 times (at planting, middle growth stage, harvesting)
Implementation Arrangement	- Responsible institutions: DA - Collaborating institution: DA/WAO/Sirinka or Adet ARC/JALIMPS - Monitoring: DA/WAO/JALIMPS - Personnel in charge: DA Crop
Target Crops/Varieties	Primary (staple food crops/cereals) & secondary crops in the target watershed - Improved varieties which are successfully cultivated in the target Woreda or watershed (adaptability to the agro-ecological conditions of the watershed have been confirmed) - Local varieties in case when adaptability of improved varieties yet to be tested (adaptability to the agro-ecological conditions of the watershed yet to be confirmed)

(3) Results and Findings (Details are reported in Appendix F-1.)


Teff, Simada


Barley,


Wheat, Bugena

- In total, 15 activities were carried out in the 7 Woredas; 6 activities in the meher season 2009, 3 activities in the belg season 2009/10 and 6 activities in the meher season 2010. The total number of plots established was 48 plots; 15 plots in the meher season 2009, 12 plots in the belg season 2009/10 and 21 plots in the meher season 2010. In the Aregoba target watershed, no activities were implemented because all the activities planned for the meher season 2010 were cancelled.
- Major crops introduced in the activities were cereal crops as barley, wheat, teff, triticale, sorghum, and maize. Other crops introduced included faba beans, groundnut, lentil, fenugreek, potato and vegetables. Among the plots, crop performances of almost all teff plots were satisfactory to more than satisfactory.
- The demonstration/verification plots were mostly operated successfully, although operations of the plots were not satisfactory in some plots because of climatic conditions, poor management and other reasons. Overall, 29 plots were operated satisfactory to more than satisfactory out of the 48 plots. It appears that the plots established under the guidance and supervision of experienced DAs or supervisors were successfully operated.


FFD, Ebinate


Wheat, Gidan

- The results of the activities confirmed that crop productivities could be substantially improved from the present levels when crops were cultivated under improved practices and proper management. **The field confirmation of such findings by DAs/WAO experts/farming communities was one of the objectives to carry out the demonstration/verification under the Verification Project.**
- Holding FFDs at sowing, middle growth and maturing stages was proposed by the Study Team. However, FFDs were held only by several Woredas. To ensure the extension effect of the plots, FFDs should be held by inviting farming communities and WAO staff.
- Aiming at the operation of the plots by a group of interested farmers, the formation of CRG (Community Research Group) was attempted. However, the involvements of CRG members other than operators of the plots appeared to be limited. Measures to promote the positive participation of members should better be worked out (for example: all the members operate their own demonstration plots in collaboration).
- The technology packages or improved farming practices to be introduced in the first stage should be the ones which would be easily adopted by farming communities. Such practices should be practices which need additional inputs affordable by farmers and could be introduced with farm tools or implement at their hands. More advanced practices are to be introduced in the second stage after the introduction of the first stage practices or to be promoted to advanced farmers.
- Accordingly, improved practices to be introduced should be flexible ones depending on capabilities, intentions and financial conditions of target groups (especially fertilizer doses).

- The use of demonstration/verification plot operated by advanced farmers for seed multiplication purpose suggested for mitigating constraint for quality seed supply. The recruitment of seed production experts who can carry out field inspection of seed multiplication fields will be a pre-condition for such attempt.
- In the activity description for the plot prepared by the Study Team, the integration of farmland conservation measures/practices and introduction of inter cropping or relay cropping of legumes was proposed, but rarely attempted. Attempts to integrate such farmland conservation practices and introduction of legumes in the operation of the plot should better be done.

- The better crop performances of barley and wheat in row planting plots compared with broadcasting plots were reported. The promotion of row planting of cereal crops was recommended because higher yield and reduction in weeding and harvesting labors were expected by row planting, although labor inputs for sowing would increase, which would offset by the reduction of labor inputs in weeding and harvesting. However, distances between rows prepared by marsha with wooden blade were 30 to 40 cm, minimum ± 30 cm. Row preparation by marsha was appropriate for row planting of wider spacing crops such as maize, sorghum, potato & some pluses. Recommended row space for cereals (wheat, barley, triticale) is ± 30 cm. The possibility of row making by a marsha with narrow wooden blade should be tested. Improvement of row planting by marsha should be envisaged to attain narrower spacing between rows for the cereals.
- Monitoring on crop growth and yields were rather limited in most Woredas. Periodical monitoring to record at least crop growth, crop performances and crop yields is considered essential. Further, monitoring on data for crop budget analysis (farm inputs, labor & draft animal inputs etc.) should better be introduced to assess results of demonstration/verification plots from the farm economic view point.

5.2.3 Simple (Adaptive) Trial on Promising Crops & Farming Practices

(1) General

The simple trial was the other primary crop production sub-sector activity and was implemented in all the target watersheds. The activities were carried out in every cropping season of the meher seasons of 2009 & 2010 and belg season 2009/10. The activity was called as “simple adaptive trial” in the meher season 2009. In the meher season 2010, the activities in the 4 Woredas were implemented in collaboration and under the guidance of the Adet ARC and Sirinka ARC aiming at improving of trial skills of WAO experts and DAs. The activities implemented in the 8 target watersheds are summarized in the followings.

Table 5.2.6 Simple Trial Activity by Woreda

Woreda	Season	No. of Plots	No. of CRGs	Crops	Crop Performances/Remarks
Ebinate	meher 2010	4	4	4 (barley, wheat, teff, field pea) 1/	barley/teff: satisfactory; wheat: satisfactory/more than satisfactory
					field pea: failed (damaged by birds after germination)
Simada	meher 2009	1	1	9 (barley, sorghum, haricot beans, potato etc.)	barley: satisfactory; other crops: not satisfactory to poor
Bugena	meher 2009	1	1	5 (lentil, haricot beans, faba beans, groundnut, etc.)	haricot beans/faba beans: satisfactory/more than satisfactory
					other crops: not satisfactory to poor
	meher 2010	1	1	5 (barley, wheat, maize, faba beans etc.)	barley/faba beans: more than satisfactory
					wheat: not satisfactory; maize: failed (late planting & drought in later stage)
Gidan	meher 2009	1	1	7 (barley, wheat, maize, faba beans)	barley/wheat: satisfactory, onion/carrot: damaged by hail
					faba beans/haricot beans: more than satisfactory
	meher 2010	1	1	3 (barley, wheat, faba beans)	satisfactory (faba beans damaged by frost)
Kobo	meher 2009	1	1	3 (maize, groundnut, upland rice)	not satisfactory (affected by drought)
Mekedela 3/	meher 2009	1	1	8 (teff, maize, lentil, faba beans etc.)	teff/lentil/faba beans/field pea: satisfactory/more than satisfactory
					maize: not satisfactory; others: poor to not adapted
	belg 2009/10	1	1	3 (barley, triticale, garlic)	barley/triticale: growth satisfactory (damaged by birds); garlic: not satisfactory
	meher 2010	2	-	2 (wheat, teff) 2/	teff: satisfactory; wheat: not satisfactory
Legambo 3/	meher 2009	1	1	4 (barley, wheat, faba beans, lentil)	not satisfactory to poor (excessive wetness at sowing)
	meher 2010	3	-	3 (barley, wheat, field pea) 2/	barley/wheat/field pea: satisfactory/more than satisfactory
Aregoba 3/	meher 2009	1	1	5 (sorghum, maize, teff, groundnut etc.)	lower watershed; sorghum/haricot beans: satisfactory/more than satisfactory
					maize/teff: satisfactory; groundnut: not satisfactory
		1	1	3 (sorghum, maize, wheat)	upper watershed; satisfactory /not satisfactory (not uniform)
	meher 2010	2	-	2 (sorghum, teff) 2/	lower watershed; not satisfactory
		3	-	2 (sorghum, wheat) 2/	upper watershed; not satisfactory
Total		20	15	68 crops (cumulative)	

1/: In collaboration with Adet ARC 2/: In collaboration with Sirinka ARC 3/: beneficiary in 2010 is 1 farmer/plot

(2) Activity Descriptions

The descriptions of the simple (adaptive) trial activity are as follows.

Objectives	Implementation of simple (adaptive) trials on promising crops, & varieties, farming practices & farmland conservation measures by DA. Aiming at enhancing technical skills of DAs/WAO experts as well.
Activity Description	Establishment of an adaptive trial plot operated by DA under the collaboration with farmer groups & implementing simple trial on promising crops, varieties & farming practices; integrated with farmland conservation practices to an extent possible.
Activity Components	- Formation of CRG by DA/WAO - Provision of all necessities & costs required for the operation of the trial - Farmer Field Day (FFD): 3 times (at planting, middle growth stage, harvesting)
Implementation Arrangement	As demonstration/verification plot
Target Crops/Varieties	- Promising new varieties of which adaptabilities to the agro-ecological conditions of the watershed has been identified by research centers or WAO - Promising new crops to the watershed of which adaptabilities to the agro-ecological conditions are conceived

(3) Results and Findings (Details are reported in Appendix F-1.)

- Simple trials (formerly called simple adaptive trials) were carried out in every target watershed, in the meher season 2009 and/or 2010. The trials in the meher season 2010 in the 4 Woredas (Ebinate, Mekedela, Legambo & Aregoba) were entrusted to the ARCs as stated earlier since the crop performances in most trials in the meher season 2009 were not so satisfactory and WAOs had limited access to seeds of new crops/varieties to be tested.
- The number of plots was 20 and cumulative number of crops tested was 68. Major crops

introduced in the trials were barley, wheat, teff, sorghum, maize and faba beans.

- Excellent crop performances attained in trial plots in the meher season 2009 include: haricot beans & faba beans in Bugena & Gidan, teff, lentil, faba beans & field pea in Mekedela, sorghum & haricot beans in Aregoba.
- The same in the meher season 2010 are: barley, wheat & teff in Ebinate, barley & faba beans in Bugena, barley, wheat & field pea in Legambo.
- The trial implemented by the Adet ARC in the meher season 2010 was operated successfully and crop performances of the trial plots except for field pea were highly assessed by farming communities participated in FFD.

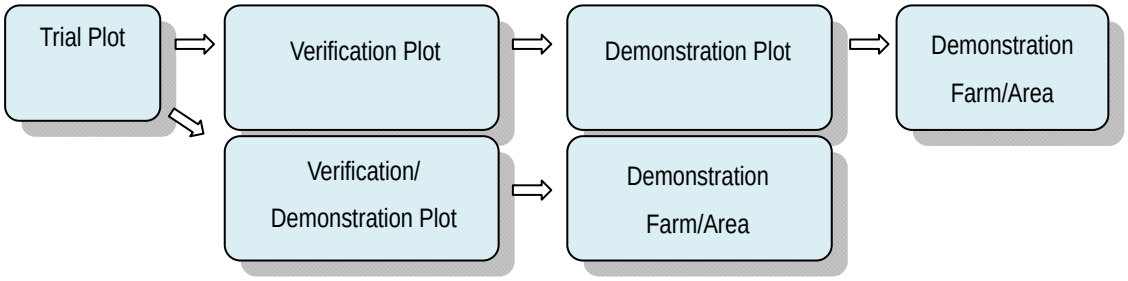

Barley, Legambo


Teff, Bugena


Barley, Gidan


Faba Beans, Bugena

- The 3 trial plots operated by WAOs/DAs in collaboration and under the guidance of the Sirinka ARC were not operated satisfactory because the trial designs proposed by the ARC were not observed and crop performances were disappointing except those in Legambo and teff in Mekedela. Growth performances of crops (3 crops/9 varieties) in the trial plots in Legambo were mostly excellent.
- Proposed further steps to be taken by WAOs/DAs for crops/varieties indicated excellent growth are establishment of demonstration or verification plots as shown in the following figure.



- Continuation of simple trials in collaboration with ARCs is recommended for improving technical/practical skills of DAs and crop experts and for technology development at Woreda level.
- Trials on responses of varieties to different input levels (fertilizer doses) are proposed as advanced trials to be carried out in collaboration with ARCs in order to find promising varieties for different input levels or input levels affordable by farmers.


FFD, Ebinate

- As the cases for demonstration/verification activities indicated, monitoring on crop growth and yields were limited. Periodical monitoring to record at least crop growth, crop performances and crop yields is considered essential.

5.2.4 Fruit Production Campaign/Preliminary Trial on Agro-forestry

(1) General

Both activities aim at introducing fruit production in the target watersheds for future income

generation and were carried out in the meher season 2009 and 2010. Both or either of the fruit production activities was implemented in all the target watersheds except Kobo. The primary target sites of the fruit production campaign were home yards and the same of the preliminary trial on agro forestry were steep farmlands. The activities implemented in the target watersheds are summarized as follows;

Table 5.2.7 Fruit Production Campaign/Preliminary Trial on Agro forestry Activity by Woreda

Woreda	Season	Activity 1/	No. of		Fruits	Notes
			Beneficiaries	Seedlings		
Ebinate	meher 2009	FP	30	300	mango, orange, guava, kashimere, papaya (60 each)	survival rates of all fruits around 60% at 3 months after planting
	meher 2010	FP	48	500	mango, orange (250 each)	fruit seedlings taking care of well compared with last year
Simada	meher 2009	FP	30	300	mango, orange (150 each)	survival rates of orange 80% & mango 64% at 3 months after planting growth of orange better than mango (15 months after planting)
	meher 2010	FP			mango, orange (150 each)	will be carried out in meher 2011 (500 seedlings)
Bugena	meher 2009	AF	20	200	mango (85), orange (85), apple (30)	survival rates of fruits planted in FTC were over 90% (6 months old)
	meher 2010	FP	30	300	mango, orange, apple (100 each)	survival rates of fruits estimated at 90% (4 months old)
Gidan	meher 2010	AF	53	387	apple (Crispi, Anna)	
Mekedela	meher 2010	FP	21	350	apple (Anna, CP 92)	taking root well (as of Nov., 2010), planted in irrigated fields
Legambo	meher 2010	FP	30	300	apple (Anna, CP 92)	survival rates of fruits estimated at 95% (4 months old)
Aregoba	meher 2009	AF	15	936	mango, orange, coffee, avocado, lemon etc.	lower watershed: better performances of orange observed (15 months old)
	meher 2009	AF	10	200	apple, plum, pome, coffee etc.	upper watershed: poor taking root observed
Total		FP	189	2,050	13 kinds & 32 fruits (cumulative)	
		AF	98	1,723		
		G. Total	287	3,773		

1/: FP - Fruit Production Campaign 2/: AF - Preliminary Trial on Agro-forestry

(2) Activity Descriptions

The descriptions of the fruit production campaign & preliminary trial on agro-forestry activity are as explained in the followings.

Fruit Production Campaign	
Objectives	Promoting fruit planting in a home yard as a mean for future income generation in the watershed
Activity Description	Provision of fruits seedlings & fertilizer to food insecure families in the watershed
Preliminary Trial on Agro-forestry	
Objectives	Preliminary adaptive trial on fruit based agro-forestry integrated with farmland conservation practices
Activity Description	Provision of fruits seedlings & fertilizer for promoting planting of fruits trees in steep sloping farmlands aiming at land use conversion from annual crop farmland into agro-forestry farm or orchard in the future
Both Activities	
Activity Components	- Provision of seedlings & fertilizer - Field Guidance: 1 time (field guidance at planting)
Implementation Arrangement	- Responsible institutions: DA - Collaborating institution: DAs/WAO/JALIMPS - Monitoring: DA/WAO/JALIMPS - Personnel in charge: DA Crop
Target Fruits	- Fruits grown successfully in the target Woreda or watershed - Fruits of which adaptabilities to the agro-ecological conditions of the watershed have been identified by WAO - Promising fruits of which adaptabilities to the agro-ecological conditions of the watershed are expected.

(3) Results and Findings (Details are reported in Appendix F-1.)

- In total of some 3,800 fruit seedlings were planted under the activity. Major fruits introduced were mango, orange and apple.
- In general, field observation indicated better growth of orange and guava compared with mango & apple.
- Monitoring activities on growth performances of fruit trees were rather limited. Periodical monitoring is essential for fruit development in the target Woredas.
- Farming communities expressed their interests on fruit production in spite of longer gestation period of fruit production. However, the most serious constraint for fruit development was the fact that watering to seedlings for some times (1 to 2 years at least) appears to be prerequisite for ensuring taking root and promoting initial growth.
- Fruits or perennial crops which can be successfully grown under rainfed conditions in the target Woredas or having high drought tolerance should be introduced for fruit based agro-forestry development.
- Recruitment of WAO fruit experts (highland/lowland depending on Woreda) is considered essential in order to provide proper technical & practical guidance to DAs and fruit growers and for the realization of fruit development potential in the target Woredas.
- In the final evaluation workshops held in the target watersheds, the activity was positively assessed by the participating farmers.


Beneficiaries, Ebinate


FTC Orchard, Bugena


Mango, Ebinate


Apple, Legambo

5.2.5 Forage Development (surround of farmland)

(1) General

The activity was a primary livestock sub-sector activity for envisaging forage development in areas surround of farmlands (farm boundary, roadside, gully areas, unused lands, etc.) in the target watersheds and was carried out in the 6 target Woredas. The target groups of the activity were individual farmers. The activities implemented are summarized in the followings.


Oat, Gidan


Vetch, Legambo

Table 5.2.8 Forage Development (surround of farmland) Activity by Woreda

Woreda	Season	No. of			Forage Plants/Crops	Plants with Good Taking Roots/Better Performances/Remarks
		Beneficiaries	Seedlings	Seeds (kg)		
Simada	meher 2009	15	2,250	-	sesbania, tree lucerne, elephant grass	sesbania
	meher 2010	20	1,800	-	sesbania, tree lucerne	sesbania, tree lucerne
Bugena	meher 2009	12	-	71	vetch (FTC 52kg, 5 forage crops)	vetch
	meher 2010	20	-	172	seed: vetch, pigeon pea; seedling: sesbania	seed: vetch, pigeon pea; seedling: sesbania
Gidan	meher 2009	20	10,000	200	tree lucerne (seedling); vetch, oat	vetch, oat
Mekedela	meher 2009	30	-	150	vetch	vetch
Legambo	meher 2009	20	-	54	vetch, cow pea, lablab, dismordium	vetch
	meher 2010	-	-	-	vetch, falaris grass, elephant grass (75kg)	will be carried out in belg season 2010/11
Aregoba	meher 2009	12	3,000	49	elephant grass; seed: pigeon pea, vetch etc.	pigeon pea
Total		149	17,050	696	23 forage plants/crops (cumulative)	

(2) Activity Descriptions

The descriptions of the forage development (surround of farmland) activity are as follows.

Objectives	Promotion of forage production in areas surround of farmlands
Activity Description	Provision of forage plant seedlings or seeds for promoting forage development in the watershed
Activity Components	- Provision of forage seedlings, seeds & technical guidance - Field Guidance: 1 time (field guidance at time of provision of seedlings/ seeds)
Implementation Arrangement	- Responsible institutions: DA - Collaborating institution: DA/WAO/JALIMPS - Monitoring: DA/JALIMPS - Personnel in charge: DA Livestock
Target Forage Plants	- Forage trees/crops & grasses successfully introduced in the target Woreda or watershed by WAO - Forage plants of which adaptabilities to the agro-ecological conditions of the watershed are expected

(3) Results and Findings (details are reported in Appendix F-1.)

- Forage plants introduced under the activity included: forage crops (oat, vetch, cow pea, pigeon pea, elephant grass, alfalfa, desmodium, lucinia) and forage trees (sesbania, tree lucerne, *Acacia saligna*, *Cordia africana*, chebaha etc.). Among those forage plants, satisfactory growths of vetch, pigeon pea & oat for forage crops and sesbania & tree lucerne for forage trees were reported by plural Woredas.
- Such results indicate the necessity of trial or verification activities on forage plants in order to select promising forage plants/species to be introduced/developed in the target areas. Technical guidance/support of and collaboration with ARCs is considered essential for the successful operation of such technical development activities.
- Main target sites for the forage development activity were farm boundary and home yard and forage development in unused lands such as gully areas was not reported. The implementation of the activity in less utilized or unused lands such as roadsides & gully areas/banks should better be envisaged for forage development and the efficient utilization of land resources.
- Several beneficiary farmers expressed their interests on forage production and continuation of the

production.

- In the final evaluation workshops held in the target watersheds, the activity was positively assessed by the participating farmers (rather generous assessment).

5.2.6 Hillside Forage Development

(1) General

The activity was a primary livestock sub-sector activity for envisaging forage development in hillside areas in the target watersheds and was carried out in the 6 target Woredas. The target groups of the activity were watershed communities. The activities implemented are summarized as follows.

Table 5.2.9 Hillside Forage Development Activity by Woreda

Woreda	Season	No. of		Forage Plants/Crops	Plants with Good Taking Roots/Better Performances
		Seedlings	Seeds (kg)		
Ebinate	meher 2009	30,200	-	sesbania, acacia saligna, cordia africana etc.	sesbania
Simada	meher 2010	4,050	-	seedling: sesbania, tree lucerne	sesbania, tree lucerne
Bugena 1/	meher 2010	52,881	38	sesbania, vetch, pigeon pea	sesbania, vetch, pigeon pea
Gidan	meher 2010	-	90	rodess grass, falalis grass, tree lucerne	
Kobo	meher 2009	3,000	74	acacia saligna, vetch, alfalfa, rodess grass	suffered from drought
Legambo	meher 2009	28,500	-	tree lucerne	tree lucerne
Total		118,631	202	17 forage plants/crops (cumulative)	

1/: No. of seedlings including seedlings for NR component activity

(2) Activity Descriptions

The descriptions of the hillside development activity are as follows;

Objectives	Promotion of forage development in hillside areas for forage production & watershed conservation
Activity Description	Provision of forage plant seedlings & seeds for promoting forage development in the watershed
Activity Components	- Awareness campaign for establishing a closed area for the forage development activity by WAO/DA/Watershed Committee/Kebele administration - Provision of planting materials & technical guidance - Field Guidance: 1 time (field guidance at time of provision of seedlings/seeds)
Implementation Arrangement	As forage development (surround of farmland)
Target Forage Plants	- Forage trees/crops & grasses successfully introduced in the target Woreda or watershed by WAO - Forage plants of which adaptabilities to the agro-ecological conditions of the watershed are expected

(3) Results and Findings (Details are reported in Appendix F-1.)

-Forage plants introduced under the activity include: forage crops (vetiver grass, vetch, pigeon pea, alfalfa, lablab, falaris grass, chebeha, yanib kasem) and forage trees (sesbania, *Acacia saligna*, *Cordia Africana*, tree lucerne). Among those forage plants, satisfactory growths of vetch & pigeon pea for forage crops and sesbania & tree lucerne for forage trees were reported by plural Woredas as


Pigeon pea, Aregoba


Target Site, Simada

is the case for the forage development (surround farmland).

- The target sites for the activity were closed areas under area closure program and in some Woredas the activities were implemented in combined manner with tree planting activities under natural resource management component.
- Similar to the forage development (surround farmland), trial or verification activities on forage plants in order to select promising forage plants/species to be introduced/developed in hillside areas, technical guidance/support of and collaboration with ARCs is considered essential for the successful operation of such technical development activities.
- In the final evaluation workshops held in the target watersheds, the activity was positively assessed by the participating farmers.

5.2.7 Sheep Breed Improvement

(1) General

The activity aims at improving of genetic resources of sheep through the introduction of improved sheep breed (ram) and the provision of crossing services in the target watersheds. The activity was carried out in the 5 target Woredas. The direct target groups of the activity were individual farmers and the indirect beneficiaries of the activity were those who received crossing services. The activities implemented are summarized as follows;

Table 5.2.10 Sheep Breed Improvement Activity by Woreda

Woreda	Season	No. of			Breed	Notes
		Beneficiaries	Ram	Seeds (kg)		
Ebinate	meher 2009	10	10	-	wasera	78 cross breeds were bred by Oct., 2010.
Simada	belg 2009/10	8	8	40	wasera	crossing services started from Sep./Oct., 2010
Kobo	meher 2009	5	5	-	awasi	implemented in 2010 meher season
Mekedela	meher 2009	11	11	-	awasi	crossing services started by Jan., 2010
	meher 2010	70	70	-	wasera	rams provided Oct., 2010
Legambo	meher 2010	7	7	-	awasi	crossing services started (as of Nov., 2010)
Total		111	111	40		

(2) Activity Descriptions

The descriptions of the sheep breed improvement activity are as follows.

Objectives	Promoting small ruminant breed improvement for livestock productivity improvement in the watershed
Activity Description	Provision of an improved breed of ram (Wasera/Awasi breed) to beneficiaries; crossing services provided by beneficiaries to other farmers in the watershed
Activity Components	- Formulation of farmer group consisting of a beneficiary & farmers receiving crossing services. - Provision of improved breed after vaccination (1 ram/farmer) - Provision of forage seeds (3 Woredas) - Training of the farmer group.
Implementation Arrangement	As forage development (surround of farmland)

(3) Results and Findings (Details are reported in Appendix F-1.)


Cross Breeds, Ebinate

- In total, 111 rams were provided under the activity. Breeds of rams were Wasera and Awasi. The primary objective of the activity was to provide crossing services in the target watersheds for sheep breed improvement.
- Crossing services had been provided as expected. Higher market prices of cross breeds compared with local breeds were reported.
- Monitoring activities on the results of crossing services, No. of cross breeds produced, survival rates and etc. were limited. To assess impacts of the activity, such data should be monitored by DAs and WAOs.
- In the final evaluation workshops held in the target watersheds, the activity was positively assessed by the participating farmers.

5.2.8 Modern Bee Hive Package

(1) General

The activity was planned as an income generation activity and implemented in the meher season 2009. The primary target groups were food insecure families in the target watersheds. The activity was carried out in the 5 target Woredas. The activities implemented are summarized as follows;

Table 5.2.11 Modern Bee Hive Package Activity by Woreda

Woreda	Season	No. of Beneficiaries	No. of Package	Package	Notes
Ebinate	meher 2009	10	10	1 set of bee hive with colony	all hives kept in good conditions (as of Dec., 2009)
Simada	meher 2009	10	10	1 set of bee hive with colony	implemented in 2010 meher season, difficulty in procurement of colonies
					procurements of colonies by beneficiaries themselves
Bugena	meher 2009	10	10	1 set of bee hive with colony	all hives kept in good conditions (as of Oct. 2009)
					honey production from 6 hives 45kg (avg. 7.5 kg/hive)
Gidan	meher 2009	12	12	1 set of bee hive with colony	honey production in 2009 limited due to later transfer of colonies
					honey production increased substantially in 2010
Kobo	meher 2009	10	10	1 set of bee hive with colony	colonies not yet procured, anticipated in May 2011
					apiculture association formed by 10 beneficiaries
Total		52	52		

(2) Activity Descriptions

The descriptions of the modern bee hive package activity are as follows.

Objectives	Promoting apiculture as a mean for income generation in the watershed
Activity Description	Provision of a modern beehive with colony for farmers (priority to food insecure families) in the watershed
Activity Components	- Formulation of beneficiaries farmer group (if deemed practical) - Provision of 1 set of modern bee hive with colony (& bee wax) per beneficiary - Training of the beneficiaries
Implementation Arrangement	As forage development (surround of farmland)

(3) Results and Findings (Details are reported in Appendix F-1.)


Bee Hive, Ebinate

- The activity was planned as an income generation activity only in the meher season 2009. In total, 52 packages were provided under the activity.

- Basically, WAO and DAs have sufficient experiences for implementing the subject activity as planned. However, difficulties in procurement of colonies were reported by several Woredas. Availability of colonies should be confirmed at the time of planning of the activity.
- Efforts to monitor honey production, gross income from modern bee hive, conditions of bee hives and problems/findings should be made to identify impacts on income generation activity and to extract lessons learned for future similar activities.


Honey, Bugena

- Beneficiaries of the activity were in many cases those who have traditional bee hives. Efforts should better be made to disseminate bee keeping to those who have no hives/colonies (traditional & transitional hives).
- Potential of honey sources will need to investigate for expansion of apiculture in the subject areas. The establishment of honey resources in a collaborative manner with forage development & forestation activity should be promoted in case when availability of the resources is limited.
- Reportedly, honey products of modern hive were with better quality and higher market price.
- In the final evaluation workshops held in the target watersheds, the activity was positively assessed by the participating farmers (rather generous assessment).

5.2.9 Small-scale Poultry Farming Promotion

(1) General


Chickens Provided

The activity was planned as an income generation activity and the primary target groups were food insecure families in the target watersheds. The activity was carried out in the 4 target Woredas. The activities implemented are summarized as follows.

Table 5.2.12 Small-scale Poultry Farming Promotion Activity by Woreda

Woreda	Season	No. of		Package/No. of Birds	Notes
		Beneficiaries	Package		
Gidan	belg 2009/10	11	11	(1 cook + 5 hens)/66 birds	implemented in 2010 meher season because of difficulty in procurement of chicks
Kobo	belg 2009/10	10	10	(1 cook + 9 hens)/100 birds	survival rate of chicks after provision was very low due to chilly rainy weather; poultry farming youth association formed & group poultry shed constructed, but ended in vain because of poor survival rate
Mekedela	meher 2009	30	30	(1 cook + 5 hens)/180 birds	birds started to lay eggs from Oct., 2009; however, 12 birds died because of no adequate poultry shed
Aregoba	meher 2009	30	30	(1 cook + 5 hens)/180 birds	implemented in 2010 meher season (1 year behind schedule) because primarily difficulty in procurement of chicks
Total		81	81	526 birds	

(2) Activity Descriptions

The descriptions of the small-scale poultry farming activity are as follows.

Objectives	Promoting small-scale poultry farming as a mean for income generation in the watershed
Activity Description	Provision of a set of cook & hens to female headed families in the watershed
Activity Components	- Formulation of farmer groups - Provision of 2 month old 1 cock + 5 hens to individual members - Training of the farmer groups
Implementation Arrangement	As forage development (surround of farmland)

(3) Results and Findings (details are reported in Appendix F-1.)

- The activity was planned as an income generation activity only in the meher season 2009 and belg season 2009/10. In total, 81 packages and some 530 chicks were provided under the activity.
- Basically, WAO and DAs have sufficient experiences for implementing the subject activity as planned. However, difficulties in procurement of chicks were reported by the two Woredas. Availability of chicks should be confirmed at the time of planning of the activity as is the case for colonies of bee hive package.
- Efforts to monitor survival rate, egg production, gross income from the activity, holding sizes and problems/findings should be made to identify impacts as an income generation activity and to extract lessons learned for future similar activities.
- In the final evaluation workshops held in the target watersheds, the activity was positively assessed by the participating farmers (rather generous assessment).

5.2.10 FTC Farm Improvement

(1) General

The activity was planned to strengthening FTC functions as the central place of extension activities in the target watersheds and implemented in the 8 Woredas. In the meher season 2009, farm tools & implements, measuring devices, farm inputs and others were provided to all the FTCs. The activities implemented are summarized as follows.

Table 5.2.13 FTC Farm Improvement Activity by Woreda

Woreda	Season	Major Components of Activity
Ebinate	meher 2009	provision of farm tools & implements, measuring tools, farm inputs, etc.
	belg 2009/10	supporting establishment of FTC farm
Simada	meher 2009	provision of farm tools & implements, measuring tools, farm inputs, etc.
Bugena	meher 2009	provision of farm tools & implements, measuring tools, farm inputs, etc.
	belg 2009/10	supporting establishment of FTC farm
Gidan	meher 2009	provision of farm tools & implements, measuring tools, farm inputs, etc.
	meher 2010	installation of solar panel
Kobo	meher 2009	provision of farm tools & implements, measuring tools, farm inputs, etc.
Mekedela	meher 2009	provision of farm tools & implements, measuring tools, farm inputs, etc.
	meher 2010	renovation of water harvesting pond
Legambo	meher 2009	provision of farm tools & implements, measuring tools, farm inputs, etc.
	belg 2009/10	installation of drip irrigation system
Aregoba	meher 2009	provision of farm tools & implements, measuring tools, farm inputs, etc.
	meher 2010	provision of bicycle

(2) Activity Descriptions

The descriptions of the FTC Farm improvement activity are as follows.

Objectives	Strengthening of FTC functions as a central place of extension activities in the target watershed and establishment of the FTC farm as a site for demonstration & trial activities of DAs
Activity Components	- Provision of farm tools, equipment & others necessary for extension activities of FTC/DAs

	- Establishment of demonstration and/or trial plots (if located within the target watershed) - FTC farm improvement for demonstration & trial activities
Implementation Arrangement	- Responsible institutions: WAO - Collaborating institution: DAs/WAO/JALIMPS - Monitoring: WAO/JALIMPS - Personnel in charge: focal person for JALIMPS

(3) Findings

- It is envisioned in the Ethiopian extension strategies that FTC Farm is to be established as a central place for agricultural extension activities. In addition, DAs are key players of the activities at Kebele level. However, the establishment of FTCs in the target watersheds appeared to be rather poor compared with the envisioned role. Although, some measuring devices, farm tools & implements, office equipment and, etc. were provided and the installation of facilities required for extension activities were supported under the FTC Farm improvement activities of JALIMPS, further improvement of the Farms is considered essential for the strengthening of extension activities and to improve working places of DAs.
- The alignments of crop fields, demonstration structures and other buildings/structures in most FTCs in the target watersheds appeared to be rather arbitrary. Re-designing of FTC Farms should better be carried out, at least to plot crop fields with measured sizes as shown in the figure below.

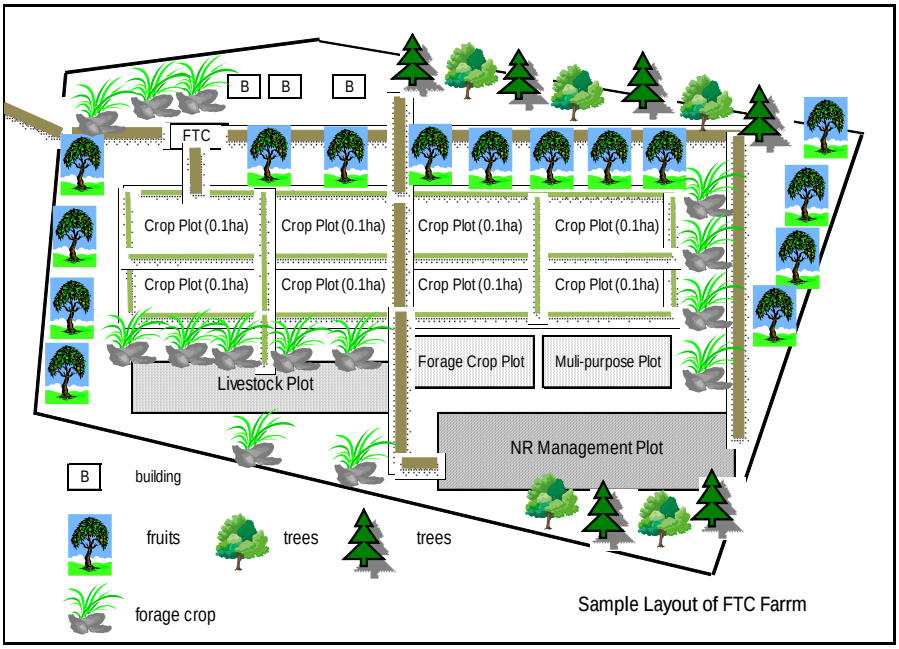


Figure 5.2.3 Sample Layout of FTC Farm

5.2.11 Other Verification Activities

Other verification activities implemented under the Verification Project were 10 APVAs as follows.

Table 5.2.14 Other APVAs by Woreda

Sub-sector	Verification Activity	Season & Woreda Implemented Activity 1/			No. of Activities
		Meher 2009	Belg 2009/10	Meher 2010	
Crop Production	Sunflower Production	BG			1
Livestock Production	Small-scale Fish Farming			MK	1
	Introduction of AI Services		EB	KB	2
	Veterinary Services Strengthening		AG		1
	Kebele Veterinary Agent Training		BG		1
Extension Services	Inset Processing Training		EB		1
	IPM Training			AG	1
Income Generation/Crop Production	WS Community Vegetable Nursery Development		SM		1
	Women Association Strengthening		EB		1
Income Generation/Livestock Production	Sheep Fattening	BG & GD			2
	Total	3	6	3	12

1/: Mk - Mekedela, EB - Ebinate, KB - Kobo, AG - Aregoba, BG - Bugena, SM - Simada, GD - Gidan

Descriptions and results & findings of the activities worth reporting are as follows.

(1) Small-scale Fish Farming

The activity was to introduce small-scale fish farming on a trial basis aiming at income generation & improving nutritional status in the target watershed and was carried out in the Tebi watershed in Mekedela Woreda. The activity was implemented under the guidance of Bahir Dar Fishery & Other Aquatic Life Research Center (BAFOALRC) as follows.

Location	Tebi watershed, Mekedela (close to the reservoir)
Beneficiary	Water Users Association, Tebi Irrigation Scheme
Size of Fish Pond	10x10x1.25m = 125m^3
Fish Species Stocked	Tilapia (*Oreochromis niloticus*)
No. of Fingerings Stocked & Size	200 fingerings; size $\pm$10cm
Date of Stocking	Oct. 20, 2010

(2) Introduction of AI Services

The activity was carried out to support AI services introduction plan of Ebinate and Kobo Woreda. Main components of the activity were installation of cattle crush and procurement of tools for the services. The AI services in the target watersheds were introduced in May and June, respectively in Ebinate and Kobo.

(3) Kebele Veterinary Agent Training

The activity was to train selected farmers on simple veterinary treatments and to recruit them as Kebele Veterinary Agents (KVAs) who provides veterinary services in the watershed. The activity was implemented only in Bugena Woreda instead of Veterinary Services Strengthening Activity as follows.

Target Group	6 farmers from 6 Kebeles
Training	1st training: middle of March, 2010 (15 days) 2nd training (follow-up training), June 14-19, 2010 (6 days)
Provision	Equipment, tools & drug

The provision of veterinary services in the target watershed by KVAs started after the 1st training.

(4) Enset Processing Training

The activity was enset processing training targeted to enset growers & DAs/WAO experts in Ebinate Woreda and carried out as in the followings.

Target Group/Beneficiaries	20 enset growers, 5 DAs, 2 WAO Crop Experts, 1 Zone Expert, total 27
Training Period/ Trainers	Period: 5 days; trainers: BoARD horticulture expert
Training	Feb. 18 to 22, 2010 at ORDA office; WAO nursery

The training curriculum was 2-day training in class and 3-day field practical training. The training subjects covered seedling production, cultivation, harvesting, fermentation & food preparation. The training was well arranged and successfully carried out by WAO and a trainer of BoARD. Participants showed their keen interests on enset cultivation & processing.

(5) IPM Training

IPM (Integrated Pest Management) training for famers in the target watersheds and DAs/Woreda experts was implemented in Aregoba. Training was carried out by WAO crop experts as follows.

Target Groups	42 beneficiary farmers (upper watershed 21 & lower watershed 21), 3 WAO
Training Period/Trainer	period: 7 days; trainer: WAO crop experts
Schedule/Place	Aug. 6 to 12, 2010; training in class at Harubu, field training in the watershed
	Training in class: 5 days, field practices: 2 days
Provision of Farm Tool	7 hand sprayers to WAO/FTC

(6) Watershed Community Vegetable Nursery Development

The establishment of irrigated community vegetable nursery for the production & supply of vegetable seedlings to interested farmers was carried out in the watershed in Simada.

Target Group & Site	CRG (Community Research Group) & members field
Beneficiaries	1 CRG; 1 leader & 9 members, total 10 members
Provision	Water pump set, vegetable seeds, fuel cost, nursery establishment cost
Training of CRG	End March (3 days)
Establishment Nursery	end March, 2010

Farmers who were interested in purchasing vegetable seedlings were rather limited. Measures to operate the nursery under the PSNP and free provision of seedlings to farmers should be worked out.

5.2.12 Support Activities by Agricultural Research Centers

Aiming at the institutionalization of cooperation of research institutes for the implementation of agricultural verification activities and for strengthening the research-extension linkage, the technical guidance and support activities of the agricultural research centers were accommodated in the APVAs for the meher season 2009 and 2010. The research institutes involved in such support activities included: Adet Agricultural Research Center (Adet ARC) for the target 2 Woredas in the western part of the Study Area, Sirinka Agricultural Research Center (Sirinka ARC) for the 6 eastern target Woredas, Bahir Dar Agricultural Mechanization & Food Science Research Center (BAMaFSRC) and Bahir Dar Fishery & Other Aquatic Life Research Center (BAFOALRC). The activities by the research centers were described in the table below.

Table 5.2.15 Support Activities by Agricultural Research Centers

ARC	Season	Support & Guidance Activity
Adet ARC	Meher 2009	Field technical guidance to Ebinate & Simada WAO
	Meher 2010	Implementation: simple trial in collaboration with WAO Ebinate
Sirinka ARC	Meher 2009	Integrated Crop Management (ICM) Training; 4 eastern WAOs
		Joint field guidance; 5 eastern WAOs
		Field technical guidance to eastern WAOs
	Meher 2010	Implementation: simple trial in collaboration with WAO Mekedela,/Legambo/Aregoba & Verification/demonstration plots with WAO Kobo
BAMaFSRC	Meher 2010	Preliminary demonstration on single ox harnessing system, Ebinate & Simada WAOs
		Preparation of a compaction roller for teff planting
BAFAOLRC	Meher 2010	Preliminary survey for fishery development in Tebi Reservoir of Mekedela Woreda
		Field guidance on small-scale fish farming in Tebi watershed

(1) Integrated Crop Management (ICM) Training

The Integrated Crop Management (ICM) Training was held at Weldia in the meher season 2009 by Sirinka ARC for Woreda crop experts, crop DAs and supervisors of the 4 eastern target Woredas as follows.


ICM Training

Subject	Crop management, crop improvement (seed production), pest management
Date & Place	June 30th– July 2nd, 2009 at Weldia
Participants	18 participants (Bugena 3, Gidan 3, Kobo 4, Mekedela 4, Legambo 4)
Topics	Cereal crop production management, pulse & oil crops production management, agronomic management for crop improvement, pest management

(2) Joint Field Guidance by the Study Team & Sirinka RC

The Joint Field Guidance for the 5 eastern Woredas on the operation of demonstration /verification plot & simple trial plot was carried out in the meher season 2009 by the Study Team and Sirinka ARC at the WAO Kobo and the Kobo target watershed by inviting crop experts, crop DAs and supervisors of the Woredas as follows.

Objective	Provision of guidance on row/regular planting using marsha Guidance on monitoring forms on APVAs Guidance on formulation of APVAs for the next belg season	
Date & Place	June 27th – 28th, 2009 at Kobo WAO & target watershed	
Participants	22 participants (Gidan 4, kobo 5, Mekedela 4, Legambo 4, Aregoba 5)	
Agenda	June 27	Guidance on monitoring forms on APVAs Guidance on formulation of APVAs for the next belg season Updated schedules for APVAs
	June 28	Field practical guidance on row planting (upland rice) & regular planting (field pea)

(3) Simple Trial by Adet ARC

In the meher season 2010, the guidance and support activities by Adet ARC were carried out through the implementation of a simple trial in collaboration with WAO/DAs in Ebinate as follows.

Target Group & Site	4 beneficiary farmers; farmers fields (4 plots)
Target Crop	barley, wheat, field pea, teff
Planting Method	barley/wheat/field pea – row planting; teff – broadcasting

The simple trial activity was successfully operated and crop performances of barley, wheat & teff were satisfactory to more than satisfactory. However, field pea was damaged by birds after germination. FFD was held on September 24 by inviting Woreda staff, DAs and watershed communities (60 participants). The Adet ARC will provide seeds of improved varieties showed good performances in the trial to WAO for their further field extension activities. (Details of the activity are reported in Appendix F-1.)

(4) Simple Trial by Sirinka ARC

In the meher season 2010, the guidance and support activities by Sirinka ARC were carried out through the implementation of simple trials or a demonstration/verification plot carried out in collaboration with WAO/DAs in Mekedela, Legambo, Aregoba and Kobo as follows.

Item	Kobo 1/	Mekedela	Legambo	Aregoba
Target Group	7 farmers	2 farmers	3 farmers	5 farmers
No. of Plots	7 plots	2 plots	3 plots	5 plots
Target Crop	4 crops (maize, teff, sorghum, groundnut)	2 crops (wheat, teff)	3 crops (barley, wheat, field pea)	3 crops (wheat, teff, sorghum)

1/: demonstration/verification activity

The crop performances in the trial and demonstration plots were rather not satisfactory. Only 3 crops (barley, wheat & field pea) in Legambo and teff in Kobo & Mekedela performed satisfactory to more than satisfactory. However, the other crops were poor. (Details of the activity are reported in Appendix F-1.)

(5) BAMaFSRC (Demonstration of Single Ox Harnessing System & Simple Farm Tools)

The demonstrations of single ox harnessing system and simple farm tools by the RC were carried out in the target watersheds of Ebinate and Simada as follows.

Woreda	Date	Guidance/Support Activities
Ebinate	June 18	Demonstration & guidance on single harnessing system & farm tools
Simada	June 16 - 17	Demonstration & guidance on single harnessing system & farm tools

The demonstrations on plowing by a single ox harnessing system were carried out successfully in the presence of the watershed communities. Although minor modifications of the system appeared to be necessary, the demonstrations and the single ox harnessing system were highly assessed by participants in both Woredas. Further, a modified compaction roller for teff planting was prepared by the RC.

Demonstration in Ebinate

Guidance in Ebinate

Evaluation in Simada

(6) BAFOALRC

The field survey for fishery development potential in Tebi Reservoir in the target watershed of Mekedela was carried out by BAFOALRC from May 14 to 15, 2010. The field guidance on a small-scale fish farming in the watershed was made on October 20th at the time of the stocking of fingerings in the fish pond as follows.

Target Group & Site	Water Users Association of Tebi Irrigation Scheme, land owned by the Association located close to the Tebi Reservoir
Size of Fish Pond	10 x 10 x 1.25m; 125m^3
Fish Species & No. of Fishes	Tilapia (*Oreochromis niloticus*); ±200 fingerings (size ±10cm, caught at the Lake Hike in Jati)
Stocking of Fingering	Oct. 20, 2010

5.2.13 Lessons Learned and Recommendations

Major lessons learned obtained from the introduction of the proposed approaches for agricultural promotion (discussed in Interim Report, April 2009, and Section 3.3.11 & 5.2.1) and extracted through the implementation of verification activities for agricultural promotion for 3 cropping seasons of the meher season 2009, belg season 2009/19 and meher season 2010 in the target watershed are enumerated together with recommendations to the lessons learned by categorizing into approaches, institutional issues, administrative issues, individual activities and other issues and in the followings;

(1) Proposed Approaches for Agricultural Promotion

The proposed approaches for agricultural promotion have been employed in the formulation of the proposed/conceivable verification activities in 2009 & 2010 (overall plan) and seasonal & annual plans in the target watershed as reported in the Interim Report and in the section 5.2.1. The processes applied in the formulation include: i) identification of present conditions & constraints/problems, ii) assessment of past/current development activities & development potentials, iii) explanation on proposed approaches for agricultural promotion, iv) formulation of preliminary proposed/conceived verification activities for agricultural promotion (overall plan), and v) formulation of seasonal and annual plans. The formulation was made through the participatory approach of stakeholders, WAO, DAs, watershed community and JICA Study Team.

The experiences in the formulation under the Study proved that as basic approaches for agricultural promotion in micro-watersheds, the said proposed approaches could be applied. However, following issues should be improved or taken into account for the introduction of the approaches and in the formulation of annual or long term agricultural promotion activities.

- Basically, WAOs and DAs have capabilities and experiences to carry out planned verification activities for agricultural promotion (APVAs). However, their capabilities and experiences to formulate effective APVAs well tailored to the problems/constraints and potentials in target areas and to capabilities, intensions & wishes of target communities are yet to be strengthened.
- Improvement of participants' practical knowledge & capability for introducing the approaches through intensive guidance/training and repeated practices of the adoption of the approaches in

fields (OJT).

- Before their attainment of such knowledge & capability, the participation of external experts will be essential for the formulation.
- Ownership of Woreda staffs for verification activities was rather limited, possibly, because of high turnover rate of DAs, delay of assignment & replacement of focal person/coordinator & experts assigned and limited budget availability. Further, ownership of participated farmers (CRG members) for field activities as verification/demonstration & simple trial was also limited. The investigation on reasons for limited ownership and the introduction of counter measures or solutions to such situations will be essential for the expansion and sustainability of the activities.
- Identification of present conditions & constraints/problems, needs, intention & capabilities of watershed communities should be performed basically as routine activities of DAs and findings should be reported to WAOs periodically as area specific basic information to be considered in the formulation of annual or seasonal agricultural promotion activities.

(2) Institutional Issues

- Turnover rates of the DAs in the target watersheds were very high. Among the DAs (crop, livestock, natural resources) who participated in the VAs in the meher season 2009, only those in 2 Woredas (Gidan & Legambo) were still posted in the watersheds, while all DAs in 6 Woredas were transferred (except livestock DA in Kobo; as of February, 2010). High turnover rates of focal person/coordinator and Woreda experts have also been a serious headache to the Study Team. Necessary arrangements to avoid such high turnover rate are considered essential for the successful project implementation.

(3) Administrative Issues

- Monitoring, evaluation & feedback system from the field level to the WAO authority should be institutionalized in any WAO activities. Results, findings and lessons learned identified through monitoring of the activities should duly be assessed and accommodated in the following activities in the feedback system. A simple system at the initial stage and then to upgrade the system.
- In the current procurement system of commodities, the procurement costs of limited quantities of necessities & goods become very high. The procurement costs should be lowered by procuring the necessities & goods in a combined manner with other WAO activities.

(4) Verification/Demonstration Activity

- There are substantial rooms for the enhancement of technical skills on farming practices (practical skills) of DAs & crop experts as many DAs and crop experts have limited experiences in operating field activities such as demonstration, verification and trial. Activities to enhance such skills should better be accommodated in the capacity building OJT programs for extension personnel. Relevant activities for such purposes include demonstration, verification and simple trial activities as introduced under JALIMPS.
- In the establishment and operation of verification/demonstration plot, there exist substantial

rooms for improvement in site selection, selection of target groups (farmers), plot designing, selection of target crops/varieties and farming practices to be introduced.

- One constraint encountered in the demonstration/verification & trial activities was difficulty in procurement of seeds required for field extension activities. Further, WAOs and DAs have difficulty to obtain information on promising varieties/seeds to their subject areas. Their accessibility to the same is further constrained. The strengthening of research-extension linkage should be institutionalized in the extension strategy. To this effect, the collaborative implementation of simple trial activities by research centers and WAO/DAs as envisioned under JALIMPS should better be accommodated in the extension activities.
- The involvements of CRG members other than operators of the plots appeared to be limited. Measures to promote the positive participation of members should better be worked out as stated earlier. Further, measures to promote farmer to farmer extension should be introduced.
- Crop performances observed in the verification/demonstration activities verified that crop productivities in the target Woredas will be improved substantially when proper or appropriate farming practices (extension package farming practices or else) are properly adapted or introduced. Next steps to be taken will be how to disseminate such farming practices to farming communities as envisaged in the extension policy in Ethiopia. Conceivable next steps will be large scale demonstration activities under proper & intensive field guidance and with the provision of seeds and fertilizer under credit.
- Proper practices to be introduced should be appropriate practices which could be adapted without any substantial additional inputs or with additional inputs affordable by farming communities.
- Experimental & demonstration activities of research institutes are generally directed to the introduction of new varieties. The introduction of trial/verification/demonstration activities of improved or appropriate farming practices and farm tools should be envisaged by the extension agencies (BoARD & WAO) under the collaboration with research institutes. To this effect, the strengthening of research-extension linkage should be sought.
- Watershed farming communities, especially CRG members, showed strong interests in varieties/crops successively cultivated in demonstration/verification or simple trial plots and requested to DAs to provide such seeds for their cultivation in a next cropping season. There exist chances to improve crop productivity through the introduction of such field activities. Further expanded activities will be the operation of large scale demonstration farm & area with the similar concept or modified concept (in which seeds & fertilizer provided under credit) as stated earlier.
- Collection of reliable or accurate yield data on similar activities should be envisaged. To this effect, WAOs and other agricultural agencies should better make it routine to collect yield data on such activities and even on farmers' levels.

(5) Simple (Adaptive) Trial Activity

- Crop performances in trial plots differed substantially among Woredas. It appears that crop

performances were well in Woredas or watersheds where well experienced DAs, supervisors or crop experts involved in demonstration/trial activities. There are substantial rooms for the enhancement of technical skills on farming practices (practical skills) of DAs & crop experts as stated earlier.

- In several trial plots, layouts of plot were rather arbitrary and precise measurements of plot sizes appeared impossible. Basic skills for trial operation should be acquired by all WAO extension staffs. Aiming at transferring of such basic skills for trial, the involvement of agricultural research centers in trial activities should better be accommodated in APVAs until the WAO staffs attain such skills.
- The research-extension linkage is poorly established in the target Woredas and the accessibility of WAOs to research findings is limited. For example, WAOs have rather limited knowledge on promising varieties or even on crops and have almost no access to seeds of such varieties or crops. The involvement of research centers in the trial activities will mitigate the said constraints to some extent.
- Farming communities usually have limited knowledge, information and access to improved farming practices and promising crops/varieties. Dissemination of such should be attempted through the simple trial activities. Many farmers showed keen interests in crops/varieties successfully grown in demonstration and trial plots and farm implement demonstrated in the verification activities.
- Some simple but important trial topics (other than adaptive test on crops/varieties carried out under APVAs) could be carried out by DAs/CRGs under the guidance of crop experts include: seeding rate, number of seeds/hill, planting distance/density, seeding depth, effect of thinning out, row planting by marsha, weeding & earthening-up by marsha in row planting etc.

(6) Fruit Production Activities

- Some watershed communities expressed keen interest on fruit production. The successful introduction of fruit production in the target watersheds will present sustainable income generation opportunities to watershed communities. However, there were still substantial rooms for DAs/crop experts to improve their practical skills in fruit production.
- However, almost all target places for fruit planting under the project fruit production activities are home yard gardens and farmlands close to houses where watering to fruit plants can easily be carried out. Technical possibility to grow fruits or perennial cash crops under rainfed conditions in remote areas from housings should be examined in order to develop sustainable income generation opportunities to all watershed communities and to introduce fruits or perennial crops cultivation as a promising watershed conservation measure.
- For the realization of development potentials of temperate fruits in highland areas, the formulation and implementation of temperate fruit development project is recommended. (A project proposal for the purpose is drafted under the present Study).

(7) Forage Development Activities

- Forage development is inevitable development intervention for sustainable livestock production in all the target watersheds. Some beneficiary farmers of forage development activity expressed strong interests on forage production. However, growth or adaptability of forage crops/plants introduced under the activities differs among plants and watersheds. It appears essential to carry out extensively field trials on forage crops/plants in order to select area specific promising forage crops/plants and then to carry out field demonstrations of such promising crops/ plants.

(8) Extension Services

- FTC Farm is to be established as a central place for agricultural extension activities and DAs are key players of the activities at Kebele level. However, the establishment of FTCs in the target watersheds appears to be rather poor compared with the envisioned role. Improvement of the Farms is considered essential for the strengthening of extension activities and to better working conditions of DAs.
- Development & introduction of improved simple farm tools & installments should seriously be envisaged. The regional mechanization institutes have already developed some simple farm tools & installments. Field tests of such improved tools & implements should better be carried out intensively as attempted in the coming meher season under JALIMPS.
- The enset processing training implemented in Ebinate Woreda was well arranged and successfully carried out by WAO and a trainer of BoARD and participants showed their deep satisfaction. In training activities, transfer of practical knowledge/skills and experiences to farming communities should be envisaged by well experienced trainers with sufficient practical skills.

(9) Income Generation Activities

- It appears that WAOs/DAs have enough experiences to carry out income generation activities introduced under the present project. .
- Beneficiaries of the income generation activities under the present project were selected from advanced farmers in target watersheds in some cases because of limited capabilities of food insecure families (target groups of the activities) to carry out such activities, especially Modern Bee Hive Package (because of availability of bee colony) & Sheep Breed Improvement (because of availability of feeds). The selection of proper target groups and necessary supports for them to carry out such activities should be sought.

5.2.14 Conclusions and Proposed Projects

As stated earlier in the section 5.2.1, the verification activities for agricultural promotion (APVAs) were planned and implemented: i) to verify the adoptability of the proposed approaches for agricultural promotion in the food insecure Woredas formulated in the present Study and ii) to assess the capabilities of WAOs and DAs for implementing APVAs in addition to evaluate performances, results and findings of individual verification activities and to extract lessons learned from the

implementation of APVAs.

The adoptability of the proposed approaches for agricultural promotion in the food insecure Woredas has been verified through the results, findings and lessons learned from the implementation of APVAs for 3 cropping seasons of the meher season 2009, belg season 2009/10 and the meher season 2010 and the results of the final evaluation workshops in the target watersheds and Woredas. Although there are rooms for revising/updating the approaches based on the lessons learned from the implementation as proposed in the Technical Guideline (a separate volume).

Further, the strengthening of the capabilities of WAOs and DAs through the intensified guidance/training prior to the implementation of agricultural promotion activities and through the OJT on the same will be vital for the successful operation of the activities in the target areas and for addressing the agricultural core problems indicated in Figure 5.2.2.

The key issues for future agricultural promotion projects in the food insecure Woredas will be:

- ***Establishment of project implementation unit posted with permanent staff to ensure project ownership by the implementation agency (WAO),***
- ***Target areas of the project should be Kebeles as the project should better be operated through FTC, and***
- ***Promotion activities should be formulated based on in depth study on agricultural problems & constraints, capabilities/intensions of target farming communities and development potentials in the target Kebeles.***

Envisaging the continuation and expansion of agricultural promotion activities in the food insecure Woredas and highland areas, the following project proposals and a technical guideline were prepared as further development actions to be taken for the agricultural promotion/development in the areas.

- ***Integrated Agricultural Promotion Project in Food Insecure Woredas in Amhara Region***
- ***Temperate Fruit Development Project in Ethiopian Highlands***
- ***Technical Guideline for Integrated Agricultural Promotion Activities (APAs) in the Food Insecure Woredas in Amhara Region (guideline for the Integrated Agricultural Promotion Project; prepared as a separate volume)***

The project proposals are presented in the section 8.1 in summarized manner and Appendix C-2 in details.

5.3 Natural Resource Management Component

5.3.1 Planning of the Activities

Since the problem of forest degradation and soil erosion are critically serious in the target areas, the project put emphasis on the recovery of vegetation and soil and water conservation by creation of physical structure through human resource development. In general, these activities are divided into the five categories; 1) production of tree seedling, 2) afforestation, 3) construction of soil and water conservation structure, and 4) gully rehabilitation. In order to support these activities, research center is involved in capacity development training for natural resource management: participants of the

training are Woreda experts, DAs, and farmers. The schedule of these activities is summarized in the following figure.

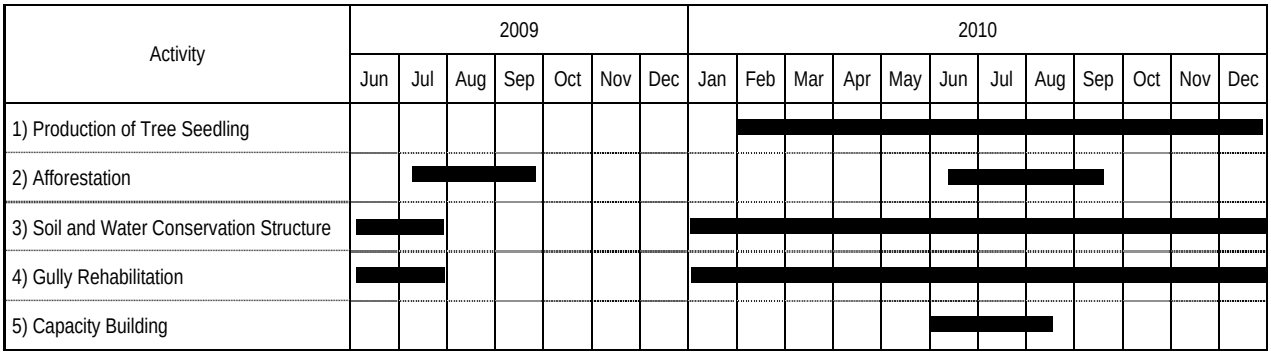


Figure 5.3.1 Schedule of the Activities from June 2009 to December 2010

The main purpose of the activities are to verify these natural resources management activities from the viewpoints of technical and social aspects: suitability of tree species in different watersheds, appropriate design of soil and water conservation structures, implementation organization of community tree nurseries, and others. Activities done in 2009 and 2010 are summarized as follows.

Table 5.3.1 Summary of Natural Resources Management Activities 1 (Jun - Dec 2009)

	Ebinate	Simada	Bugena	Gidan
Afforestation	Afforestation of 30,200 seedlings on hillside in church compound	Afforestation of 40,447 seedlings on farm boundaries and gully erosions	Afforestation of 4,000 seedlings on hillside	Afforestation of 12,500 seedlings on hillside
Soil and Water Conservation Structure	Cut-off drain （70m^3）	Percolation pit (12) Percolation pond (2)	Micro-basin (2,000）	n/a
Gully Rehabilitation	Gabion check dam (25)	n/a	n/a	n/a
Capacity Development	n/a	n/a	8 Woreda experts, 3 DAs and 3 farmers had training of gully rehabilitation for 2 days.	n/a
	Kobo	Mekedela	Legambo	Aregoba
Afforestation	Afforestation of 33,000 seedlings on hillside	Afforestation of 26,886 seedlings on farm boundaries and bare land	Afforestation of 145,100seedlings on hillside, riverside, gully erosions and others	Afforestation of 51,600 seedlings on hillside
Soil and Water Conservation Structure	n/a	n/a	n/a	Trench (3,546) Micro-basin (2,160) Eyebrow basin (12,603)
Gully Rehabilitation	n/a	n/a	n/a	Stone check dam (698m^3)
Capacity Development	n/a	n/a	156 farmers had soil and water conservation training by Woreda Office for 3 days.	n/a

Table 5.3.2 Summary of Natural Resources Management Activities 2 (Jan - Dec 2010)

	Ebinate	Simada	Bugena	Gidan
Production of Tree Seedling	Tree seedlings were produced at one new and one existing community tree nurseries (in total two community nurseries).	Tree seedlings were produced at a new community tree nursery.	Tree seedlings were produced at a new community tree nursery.	n/a
Afforestation	Plantation pit (51,589)	Plantation pit (22,000)	Plantation pits(133,360)	Plantation pits(25,000)
Soil and Water Conservation Structure	Hillside terrace (5km) Trench (800) Micro-basin (800) Cut-off drain (100m^3) Hillside terrace maintenance (2.1km)	Hillside terrace (2.52km) Half moon (260) Trench (300)	n/a	Hillside terrace (2km) Trench (300) Micro-basin (1,000) Cut-off drain (210m^3) Hillside terrace (2km)
Gully Rehabilitation	Stone check dam (593m^3) Gabion check dam (231 m^3)	Stone check dam (305m^3) Gabion check dam (100m^3)	n/a	Stone check dam (120m^3) Gabion check dam (27.5m^3)
Capacity Development	The training is conducted in the middle of December 2010.	The training is conducted in the middle of December 2010.	One person participated in the natural resource management training by Sirinka Agricultural Research Center from June 3 to 6.	Two persons participated in the natural resource management training by Sirinka Agricultural Research Center from June 3 to 6.
	Kobo	Mekedela	Legambo	Aregoba
Production of Tree Seedling	Tree seedlings were produced at an existing community tree nursery.	Tree seedlings were produced at one new and one existing community tree nurseries (in total two community nurseries).	Tree seedlings were produced at a new FTC tree nursery.	Tree seedlings were produced at one new and one existing community tree nurseries (in total two community nurseries).
Afforestation	Plantation pit (15,168)	Plantation pit (36,000)	Plantation pit (131,320)	Plantation pit (199,630)
Soil and Water Conservation Structure	Hillside terrace (8km) Trench (115) Half moon (150) Eyebrow basin (70) * All are maintenance only	Hillside terrace (12.2km) Trench (3,480) Micro basin (2,600) Eyebrow basin (6,840) Soil band (22.56km)	Hillside terrace (2.5km) Farmland terrace (16.9km) Trench (55) Micro basin (97) Eyebrow basin (108)	Hillside terrace (2.54km) Trench (47,300) Micro basin (8,235) Eyebrow basin (25,300) Improved pond (132) Hillside terrace (maintenance, 5.25km)
Gully Rehabilitation	n/a	Stone check dam (3,540m^3) Gabion check dam (36m^3) Stone check dam (maintenance, 9,460m^3)	Stone with wood check dam (596m^3)	Stone check dam (1,307m^3)
Capacity Development	Two persons participated in the natural resource management training by Sirinka Agricultural Research Center from June 3 to 6.	Two persons participated in the natural resource management training by Sirinka Agricultural Research Center from June 3 to 6.	Two persons participated in the natural resource management training by Sirinka Agricultural Research Center from June 3 to 6.	Three persons participated in the natural resource management training by Sirinka Agricultural Research Center from June 3 to 6.

5.3.2 Production of Tree Seedlings

(1) Summary of the Activity

The summary of the tree seedling production activity is as follows.

1) Objectives

The activity aims to increase the seedling supply for afforestation in the watersheds and to identify the suitable species in each watershed. In addition, income generation of farmers is also one of objectives of this component.

2) Implementer: People living in the watersheds, DAs and Woreda experts

3) Beneficiaries: People living in the watersheds

4) Activity Description

In the target Woredas, tree seedlings have been mostly produced in centers of the Woredas. Therefore, afforestation in remote areas has been hard because of transport difficulty between Woreda center and the planting sites. To solve this problem, in the project, tree seedlings are produced near the planting sites to promote afforestation in the target watersheds where those areas are mostly quite far from each Woreda center. These seedlings are produced at newly established and/or existing tree nurseries in the watersheds or FTCs. The nurseries are operated by villagers with technical assistance provided by DAs and Woreda experts. In addition, tools and materials are also provided by FTCs, Woreda Offices, and the Study Team.

5) Period: February 2010 - December 2010

(2) Result of the Activity

In February 2010 the Study Team purchased tree seeds of 21 species and distributed them to the target 8 Woredas as indicated in the following table. These seeds were for seedling production by communities in watersheds of the 8 Woredas.

Table 5.3.3 List of Tree Seeds provided to the 8 Woredas (g)

No	*Species*	Woreda							
		Ebinate	Simada	Bugena	Gidan	Kobo	Mekedela	Legambo	Aregoba
1	*Acacia abyssinica*	600	600	300	600		600	900	
2	*Acacia albida*	900	900	900			900		900
3	*Acacia decurrens*	300	300	300		300	300		300
4	*Acacia saligna*	150	150	150		150	150		150
5	*Acacia tortilis*					700			700
6	*Casuarina equisetifolia*					700			700
7	*Chamaecytisus proliferus*	150	150	100	150		150	200	
8	*Cordia Africana*	1,200	1,200	1,200		1,200	1,200		1,200
9	*Eucalyptus camaldulensis*	450	450	450	450		450		450
10	*Eucalyptus citriodora*	900		900		900			900
11	*Eucalyptus globulus*	125	125	75	125		125	200	125
12	*Eucalyptus grandis*	150	150	150		150	150		150
13	*Eucalyptus viminalis*		200		200		200	200	
14	*Grevillea robsta*	350	350	350			350		350
15	*Juniperus procera*	600	600	300	600		600	900	
16	*Leucaena leucocephala*					1,500			

17	*Millettia ferruginea*	900	900	900		900	900		900
18	*Moringa oleifera*					600			
19	*Olea africana*	1,200	1,200	1,200	600		1,200	1,800	
20	*Podocarpus falcatus*	1,400	1,400	1,400	1,400		1,400		1,400
21	*Sesbania sesban*	150	150	150		150	150		150
Total		9,525	8,825	8,825	4,125	7,250	8,825	4,200	8,375

At the time of tree species selection, several points and different aspects were examined: suitability of the climate in the watershed, tree usefulness, accessibility to technical information on silviculture, and others. Then both indigenous and exotic species are selected (see Table 2.1 & 2.2 in Appendix F-2 for more detail). However, the Study Team could purchase only 21 species due to availability limitation of tree seed in the Ethiopian market. In addition to these seeds by the Study Team, each Woreda purchased some tree seeds by themselves to produce seedlings. As shown in the table below, new community nursery was established and used in each of Simada and Bugena; one newly established FTC nursery was used in Legambo; one existing community nursery was used in Kobo; and one new and one existing community nurseries were used in each of Ebinate, Mekedela and Aregoba Woredas.

Table 5.3.4 Summary of Tree Nurseries for the Project in the 8 Woredas

Nursery	Woreda
One newly established community tree nursery	Simada, Bugena
One newly established FTC tree nursery	Legambo
One existing community tree nursery	Kobo
One newly established community tree nursery and one existing community tree nursery (in total two tree nurseries)	Ebinate, Mekedela, Aregoba

According to the interview to foremen in the nurseries, the germination rate of seedlings is as shown in the table below. Generally speaking, the germination rate differs among Woredas. For example, in Bugena Woreda the rate is generally high whereas in Mekedela Woreda it is low. In addition, some species, e.g., *Eucalyptus globlus*, *Millettia ferruginea* etc., have different germination rates by Woredas. These facts infer that the difference of the germination rates comes from not only seeds quality but also quality of nursery management.

Table 5.3.5 Germination of the Tree Seeds in the 8 Woredas

No	*Species*	Woreda							
		Ebinate	Simada	Bugena	Gidan	Kobo	Mekedela	Legambo	Aregoba
1	*Acacia abyssinica*	xxx	xxx	xx	-		xx	-	
2	*Acacia albida*	xxx	xx	-			xxx		-
3	*Acacia decurrens*	xxx	xx	xxx		xxx	-		xx
4	*Acacia saligna*	xxx	-	xxx		xxx	x		xxx
5	*Acacia tortilis*					x			-
6	*Casuarina equisetifolia*					x	x		-
7	*Chamaecytisus proliferus*	xxx	xxx	-	-			xxx	
8	*Cordia africana*	xxx	xxx	xxx		xxx	xx		xx
9	*Eucalyptus camaldulensis*	xxx	-	xxx	-		x		xxx
10	*Eucalyptus citriodora*	xxx		xxx		xxx			xxx
11	*Eucalyptus globulus*	-	xxx	xxx	-		x	xx	xxx
12	*Eucalyptus grandis*	xxx	-	xxx		xxx	x		-
13	*Eucalyptus viminalis*		-		-		x	x	
14	*Grevillea robsta*	xxx	-	xxx			xx		xxx
15	*Juniperus procera*		-	xx	-		x	-	
16	*Leucaena leucocephala*	xx				xxx			

17	*Millettia ferruginea*		-	xxx		xx	x		-
18	*Moringa oleifera*					xxx			
19	*Olea africana*	-	-	-	-		x	-	
20	*Podocarpus falcatus*	-	-	-	-		x		x
21	*Sesbania sesban*	xxx	xxx	xxx		xxx	xxx		xxx

x: low germination rate (0-33%)
xx: middle germination rate (34-67%)
xxx: high germination rate (68-100%)
-: distributed to the Woreda Office but not sawn yet

Soil was prepared by villagers at a newly established tree nursery in Silasiemesk watershed, Ebinate Woreda.

A new community nursery was established and managed by villagers in Keyberet watershed, Bugena Woreda.

Tree seedlings were produced at an existing community nursery in Amid watershed, Kobo Woreda.

Two tree nurseries, a new one and an existing one, were used in Senbo watershed, Aregoba Woreda

In Ebinate and Simada Woredas most seedlings were produced using plastic pots.

In all Woredas except Ebinate and Simada, most seedlings were produced without plastic pots.

(3) Evaluation of the Activity

Since tree seedling production is considered to be a preparation stage for afforestation it was evaluated as a part of afforestation. It is described in the following section: afforestation.

5.3.3 Afforestation

Trees are planted and managed to prevent soil erosion and improve water retention capacity in the watershed. Some seedlings are produced nursery from seeds provided from the Study Team.

(1) Summary of the Activity

1) Objectives

The activity aims to prevent soil erosion and improve water retention capacity in the watershed through vegetation recovery. Other objectives include production of forage, firewood and timber, biodiversity conservation, etc.

2) Implementer: People living in the watersheds, DAs and Woreda experts

3) Beneficiaries: People living in the watersheds

4) Activity Description

Tree seedlings are transplanted in the target watersheds. After the transplantation, the plantation sites are managed to prevent soil erosion and improve water retention capacity. These seedlings are mainly produced in the community and FTC tree nurseries under the project. Other seedling resources are also utilized for this activity: such as other community and government tree nurseries near the watersheds. The plantation site locations include hillside, riverside, farm boundaries, gully erosion and others. The transplantation is carried out by villagers with technical assistance provided by the DAs and Woreda experts. In addition, tools and materials are also provided from FTCs, Woreda Offices and JICA study team.

5) Period: July – September 2009, June - September 2010

(2) Result of the Activity

The afforestation has been carried out in Meher rainy season, from July to August, in 2009 and 2010. In 2009, according to the monitoring of FTCs and Woreda Offices in the target 8 Woredas, the number of seedlings (and seeds) transplanted to the sites was in total 343,733 as shown in the following table (See Table 3.1, 3.2, 3.3 in Appendix F-2 for more detail).

Table 5.3.6 Number and Species of Trees Planted in 2009

Woreda	Number	Main Species	Main Locations
Ebinate	30,200	*Sesbania sesban*, *Acacia saligna*	Hillside (Church)
Simada	40,447	*Sesbania sesban*, *Acacia saligna*	Farm boundary, Gully erosion
Bugena	4,000	*Acacia saligna*, *Eucalyptus globlus*, *Sesbania sesban*	Hillside
Gidan	12,500	*Eucalyptus globlus*	Hillside
Kobo	33,000	*Jatropha curcas*, *Acacia saligna*	Hillside
Mekedela	26,886	*Jatropha curcas*, *Acacia saligna*, *Acacia decarens*	Farm boundary, Bareland
Legambo	145,100	*Eucalyptus globlus*, *Juniperus robusta*	Hillside, Riverside, Gully erosion
Aregoba	51,600	N/A	Hillside
Total	343,733	-	-

In 2009, originally it was planned to plant as many species as possible to monitor their survival and growth, and examine promising species for future extension. However, the number of the tree species was not as many as it was initially supposed. It was mainly because of the following reasons: the availability of tree seedlings was very limited, and local people prefer only a few exotic multi-purpose species. In addition, many seedlings died from water shortage due to irregular rainfall during the transplantation period. Regarding the total number of the seedlings (or seeds), on the other hand, generally a large number of trees were planted. In general most plantation sites have been closed and well protected in the target areas. However, survival rates of the seedlings are generally low. It is inferred that this problem is due to the following reasons.

- Some plantation sites have not been well managed after the transplantation.
- Some seedlings were too young, probably about only 2-3 months old, to be transplanted.

In 2010, continuous plantation was carried out in each watershed and number of total planted seedlings was about 2 times of accomplishment in 2009. Even through explanations about less-effectiveness of bare root seedling transplantation to DAs by the study team, such transplantation was done in several watersheds due to difficulty of seedling transportation. Seedling route with soil lump becomes heavy so local people can not transport the seedlings from nursery plot to the location of transplantation. This fact implies that tree nursery shall be developed near transplantation area. Total number of trees planted in 2010 is shown in the following table.

Table 5.3.7 Number and Species of Trees Planted in 2010

Woreda	Number	Main Species	Main Locations
Ebinate	71,308	*Sesbania Sesban, Acacia Saligna, Leucaena leucocephala*	Gully erosion, Hillside (Church)
Simada	22,004	*Sesbania Susban, Eucalyptus globulus*	Farmland terraces, Hillside
Bugena	105,344	*Eucalyptus camaldulensis, Acacia abyssinica*	Hillside, around Church
Gidan	25,000	*Eucalyptus globules*	Hillside
Kobo	28,850	*Acacia Saligna, Acacia abyssinica, Sesbania sesban*	Hillside
Mekedela	25,397	*Eucalyptus globules, Acacia decurrens, Acacia Saligna*	Hillside
Legambo	166,320	*Chamaecytisus ploriferus, Juniperus procera, Eucalyptus globulus*	Hillside, Gully erosion
Aregoba	205,230	*Eucalyptus camaldulensis, Eucalyptus globulus*	Hillside
Total	649,453		

In addition, totally 11 seedlings of mountain bamboo (Kerkha or *Arundinaria alpina*) are planted on a trial basis near the FTC in Ebinate Woreda (5 seedlings) and near the Woreda Office in Simada Woreda (6 seedlings). Survived number of mountain bamboo in Ebinate is 5, that of Simada is 4 as of the end of October 2010.

In Silasiemesk watershed, Ebinate Woreda, 51,589 plantation pits were made before the planting in 2010.

Community members participated in the plantation at hillside in Assoye watershed, Legambo Woreda.

In Tejino watershed, Gidan Woreda, tree seedlings were planted at steep hillsides.

In Silasiemesk watershed, Ebinate Woreda, the plantation sites are protected by community guard.

In Woiraye watershed, Simada Woreda, trees such as Kiya (*Salix mucronata*) were planted in gully sites.

In Ebinate Woreda, five seedlings of mountain bamboo (Arundinaria alpine) were planted near the FTC.

(4) Evaluation of the Activity

Series of final evaluation workshops were held from October to December 2010: the results of evaluation by each level are summarized as follows.

Table 5.3.8 Results of Final Evaluation on Nursery Production and Tree Planting

Items	Level	Ebinate	Simada	Bugena	Gidan	Kobo	Mekedela	Legambo	Aregoba
Effectiveness	Watershed	good	good	good	very good	good	good	very good	n/a
	Woreda	very good	good	very good	very good	very good	good	very good	n/a
	Region	very good		very good			good		
Validity	Watershed	very good	very good	very good	very good	very good	good	very good	n/a
	Woreda	very good	very good	very good	very good	very good	very good	very good	n/a
	Region	very good		very good			very good		
Sustainability	Watershed	high	very high	high	very high	very high	very high	very high	n/a
	Woreda	very high	very high	very high	very high	medium	high	very high	n/a
	Region	very high		very high			very high		

The activities are evaluated as “very good” or “good”, “very high” or “high” in most of watersheds, Woredas, and Zones. Deforestation in the study area is serious and most of villagers, DAs, and Woreda experts understand necessity of tree planting in forests. The problems spreading in the study area are: shortage of seedlings, deficient knowledge on transplant method of seedlings, poor forest management, and so on. Participants of the activities could not compare good method and bad method in the activities before JICA verification project because they did not have enough materials before project implementation. Thus, the government of ANRS should supply seeds to local communities so that the villagers and other stakeholders can understand what they should do by proper way.

Nursery preparation and seedling plantation are fundamental activities for afforestation, then, the Study team consider that these activities shall extend to other areas and should continue in the study area.

5.3.4 Soil and Water Conservation

Physical structures: hillside terrace, micro basin, percolation pit, and others are constructed to conserve soil and water in the watersheds. These structures can act only subsidiary role for soil and water conservation: the main part of conservation is afforestation.

(1) Summary of the Activity

1) Objectives

In the target watersheds, hilly topography and vegetation cover degradation have been causing and escalating soil erosion and water scarcity and those have been serious problems. To solve them, the activity aims to rehabilitate the watersheds through construction of physical structures, e.g. hillside terrace, micro basin, etc. After the construction, trees are to be planted to increase the effect of the conservation.

2) Implementer: People living in the watersheds, DAs and Woreda experts

3) Beneficiaries: People living in the watersheds

4) Activity Description

Soil and water conservation structures are newly constructed and existing structures are rehabilitated in the target watersheds. These activities are carried out by villagers with technical assistance provided by the DAs and Woreda experts. In addition, tools and materials are also

provided by the FTCs, Woreda Offices and JICA study team.

5) Period: June – July 2009, January – December 2010

(2) Results of the Activity

In 2009 and 2010, physical structures for soil and water conservation were constructed in the target watersheds. The structures include hillside terrace, trench, micro-basin and others. The number of structures in each year is shown in the following tables.

Table 5.3.9 Number of Soil and Water Conservation Structures Constructed in 2009

Woreda	Ebinate	Simada	Bugena	Aregoba
Number	Cut-off drain （70m^3）	Percolation pit (12) Percolation pond (2)	Micro-basin (2,000）	Trench (3,546) Micro-basin (2,160) Eyebrow basin (12,603)

Table 5.3.10 Number of Soil and Water Conservation Structures Constructed in 2010

Woreda	Ebinate	Simada	Bugena	Gidan
Number	Hillside terrace (5km) Trench (800) Micro-basin (800) Cut-off drain (100m^3) Hillside terrace (maintenance: 2.1km)	Hillside terrace (2.52km) Half moon (260) Trench (300)	n/a	Hillside terrace (2km) Trench (300) Micro-basin (1,000) Cut-off drain (210m^3) Hillside terrace (2km)
Woreda	Kobo	Mekedela	Legambo	Aregoba
Number	Hillside terrace (8km) Trench (115) Half moon (150) Eyebrow basin (70) * All are maintenance only	Hillside terrace (12.2km) Trench (3,480) Micro basin (2,600) Eyebrow basin (6,840) Soil band (22.56km)	Hillside terrace (2.5km) Farmland terrace (16.9km) Trench (55) Micro basin (97) Eyebrow basin (108)	Hillside terrace (2.54km) Trench (47,300) Micro basin (8,235) Eyebrow basin (25,300) Improved pond (132) Hillside terrace (maintenance, 5.25km)

In Silasiemesk watershed, Ebinate Woreda, 5km of hillside terrace, 800 micro-basins, etc. were constructed in 2010.

In Woiraye watershed, Simada Woreda, 2.52km of hillside terrace, 260 half moons, etc. were constructed in 2010.

(3) Evaluation of the Activity

Villagers understand that soil and water conservation structure construction is a part of gully rehabilitation activities, then; evaluation is summarized in the section of “gully rehabilitation”.

In Silasiemesk watershed, Ebinate Woreda, maintenance of existing hillside terraces carried out too.

Water harvesting structures, such as half moon and micro-basin, can be used for tree plantation in the future.

5.3.5 Gully Rehabilitation

A gully can develop easily according to increase of potential energy. The potential energy turns into velocity energy in the gully: water in the gully becomes a kind of flood so it erodes soils in and around the gully. This is why early rehabilitation of gully is the most important countermeasure to reduce soil erosion.

(1) Summary of the Activity

1) Objectives

The activity aims to rehabilitate gully erosions through construction of gabions and stone check dams.

2) Implementer: People living in the watersheds, DAs and Woreda experts

3) Beneficiaries: People living in the watersheds

4) Activity Description

Gabions and/or stone check dams are constructed in gully erosions scattering throughout the target watersheds. Villagers collect stones and construct check dams with the technical assistance provided by the DAs and Woreda experts. In addition, materials such as gabions and equipments are also provided from the FTCs, Woreda Offices, and JICA study team.

5) Period: June – July 2009, January – December 2010

(2) Results of the Activity

In 2009 and 2010, gabion and stone check dams for gully rehabilitation were constructed in the target watersheds. The number and types of check dams in each year are shown in the following tables.

Table 5.3.11 Number of Check Dams Constructed in 2009

Woreda	Ebinate	Aregoba
Number	Gabion check dam (25)	Stone check dam (698m^3)

Table 5.3.12 Number of Check Dams Constructed in 2010

Woreda	Ebinate	Simada	Bugena	Gidan
Number	Stone check dam (593m³) Gabion check dam (231 m³)	Stone check dam (305m³) Gabion check dam (100m³)	n/a	Stone check dam (120m³) Gabion check dam (27.5m³)
Woreda	Kobo	Mekedela	Legambo	Aregoba
Number	n/a	Stone check dam (3,540m³) Gabion check dam (36m³) Stone check dam (maintenance, 9,460m³)	Stone with wood check dam (596m³)	Stone check dam (1,307m³)

Gully erosions have been encroaching on farmlands in Silasiemesk watershed, Ebinate Woreda.

A large gully erosion is growing in the middle of farmland in Amid watershed, Kobo Woreda.

A stone check dam is filled with soil in Assoye watershed, Legambo Woreda

A gabion check dam is filled with soil in Silasiemesk watershed, Ebinate Woreda

(4) Evaluation of the Activity

Series of final evaluation workshops were held from October to December 2010: the results of evaluation by each level are summarized as follows.

Table 5.3.13 Results of Final Evaluation on Soil / Water Conservation and Gully Rehabilitation

Items	Level	Ebinate	Simada	Bugena	Gidan	Kobo	Mekedela	Legambo	Aregoba
Effectiveness	Watershed	very good	good	n/a	very good	very good	good	very good	n/a
	Woreda	very good	good	n/a	very good	good / not so good	good	very good	n/a
	Region	very good		very good			good		
Validity	Watershed	very good	very good	n/a	very good	very good	good	very good	n/a
	Woreda	very good	very good	n/a	very good	very good	very good	very good	n/a
	Region	very good		very good			very good		
Sustainability	Watershed	high	very high	n/a	very high	very high	very high	very high	n/a
	Woreda	high	very high	n/a	very high	high	high	very high	n/a
	Region	very high		very high			very high		

The activities are evaluated as “very good” or “good”, “very high” or “high” in most of watersheds, Woredas, and Zones. These activities are very familiar to rural peoples and government staff through PSNP activities in ANRS. Then, stake holders understand necessity of physical structures to prevent soil erosion and conserve water. On the other hand, rural peoples consider that these activities are kinds of income opportunities paid by government so they do not have their own motives to do the activities by themselves.

These activities and other activities; such as area closure, forage development, and tree plantation, work on quite effectively. Recovery of green coverage has been observed in some Woredas after a rainy season that it proves high potential of afforestation in the area. Then, shortage of motives by villagers and/or shortage of budget allocation from the government are issues to be solved. It has a long history on issues so it can not be solved within short period, and then, no-activity cannot recover green in deforested area. Considering from these aspects, the Study team considers that these activities shall continue and extend to other areas.

5.3.6 Lessons Learned

In the target areas vegetation cover has been degrading due to firewood and timber harvest, expansion of agricultural land and overgrazing. As a result, soil erosion has been getting more and more serious in the watersheds. Currently most of remaining forests are comprised of church forests, which are conserved areas around churches for religious reasons.

(1) Seedling Production

Activities of tree seedling production and afforestation are fundamental works for natural resource conservation. Production of tree seedling requires water so nursery bed is usually located near a stream. Location for tree planting is usually hillside so it is far from nursery site. It is observed that survival rate of seedling after plantation depends on root condition: seedling root with soil lump shows good survival rate but bare root seedling shows low survival rate. Due to long distance between nursery site and planting location, seedling root with soil lump causes difficulty of transportation to farmers. Such contradictions can be listed up as follows.

Table 5.3.14 Contradiction between Farmers’ Difficulty and Seedling Survival Rate

Conditions		For Farmers	For Seedling Survival
Seedling root	Root with soil lump	Heavy and difficult to transport	Good for survival

	Bare root	Light and easy to transport	Not good for survival
Age of seedling	Old	Heavy and difficult to transport	Good for survival
	Young	Light and easy to transport	Not good for survival
Location of Nursery site	Near stream	Long distance to the site and difficult to transport	Good for survival
	Far from stream	Short distance to the site and easy to transport	Not good for survival

DAs and farmers shall understand the contradiction between their difficulty and seedling survival rate, and then, effective way shall be found through their discussion.

(2) Motivation for Afforestation

Afforestation sites are normally located on communal land, and daily allowance is paid to farmers by PSNP or project of other organizations. The daily allowance is clearly visible and direct benefit for farmers. However, it isn't clearly visible for farmers how they can get direct benefit from communal land after afforestation. Farmers may obtain indirect benefit in future from the communal land where afforestation is done. Afforestation activities with daily allowance are probably considered to increase dependency of farmers on aid. In a sense, it may be true: however, farmers show their motivation under different situation.

If location of afforestation or tree planting is in a farmer's compound, the farmer may show strong willingness to plant trees as much as possible. The farmer will obtain benefit from planted trees after several years and it is clear, visible, and direct benefit. During the Study, it is observed that farmers purchase seedlings from market. They say that they will plant the seedlings in their land, not in communal land. If they are sure to have exact and direct benefit from planted trees in communal land, motivation of them will increase more. Some arrangement on communal land; for example, rule or regulation to provide some trees from a communal land several years after tree planting if a farmer plants seedling in the communal land, it will contribute to afforestation activities.

Farmers purchased seedlings from a market. They will plant the seedlings in their compound: near Debre Tabor

Seedlings are placed in a market; bare root seedlings are majority: near Gashena

(3) Poor Management of the Afforestation Sites

Although the government offices have been supporting afforestation activities of rural communities, it seems that in most cases vegetation covers have not been restored due to poor management of the sites after the afforestation. The same problems can be seen in the case of soil and water conservation

activities by construction of physical structures. In addition, it appears that survival rates of tree seedlings are very low, though there is not enough statistical information about it. People generally prefer bare-root seedling to potted seedlings because of its easiness of the production; however, the survival of bare-root seedlings are generally much more difficult than potted seedlings.

Another problem is that monitoring sometimes has not been carried out in the right way; thus quantity of tree seedling production and planting in the records often seems overestimated. In fact, in the verification study some monitoring records of seedling survival rates were apparently overestimated. Needless to say, however, it is of critical importance to record the quantity of activities as correct as possible to feedback to future works.

(4) Soil/Water Conservation and Gully Rehabilitation

Activities of soil/water conservation and gully rehabilitation are a kind of earth-works by manpower. These are quite familiar works to the people living in the watershed. Works and equipment are very simple and many people can participate to the activities. Then, DAs and Woreda experts can layout the location for these works to be implemented quite easily. These points are good advantages of the activities: however, it is learned that aforementioned activities have another faces of disadvantages as follows.

Misunderstanding on earth-work

The primary purpose of these structures is a function to stop and/or disturb water flow on the ground or in the gully. A function to stop and keep sediment is secondary purpose of these structures. Most of people in the watershed, DAs, Woreda experts misunderstand this point, then, they believe effectiveness of these structures a lot, and many structures of these activities can be observed in the Study area. From the engineering viewpoint, a function of these earth-works is quite limited in comparison with tree plantation and/or forage development[23]. There is about 5-7 times difference of effectiveness on soil conservation between earth-work structure and tree planting/forage development. Consequently, it may be the time: less emphasis on earth-work and much emphasis on afforestation.

Troubles Caused by Earth-work

Erosion is sometimes created after completion of stone-band and gabion. These structures are a kind of hydraulic structures during rainfall in order to slow down water flow velocity. Water with certain velocity has enough hydraulic-tractive-force to transport soil particles, and then, erosion is caused. Stone-band and gabion can slow down water velocity so water can not convey soil particles and sedimentation will start at the location of stone-band and gabion. Erosion after earth-work completion is caused by: concentration of water from catchment area due to stone-band opening at the edge portion, increase water depth (head) due to gabion without spill-out-notch. Proper understanding is recommended.

[23] Kazutoshi OSAWA et al, “Sediment Management Technique at Nagura Watershed, Ishigaki Island”, Proceedings of River Engineering Vol.12, pp.299-304, 2006

(5) Comprehensive and Integrated Approaches

In the target areas the most critical problems include decrease and degradation of forest cover and associated soil erosion. These problems have been originated from multiple causes such as high population density, lack of awareness of sustainable land management, irregular rainfall pattern and others. Since these problems are interconnected intricately, comprehensive and integrated approaches are very important. In addition, so far emphasis has been given mostly to symptomatic approaches such as construction of hillside terrace and water harvesting structures. However, it is more important to put emphasis on improving soil and water retention capacity of the nature itself through recovery of natural vegetation in the watersheds. To recover woody vegetation in the watersheds, the following activities are important.

- Create public awareness of sustainable natural resource management.
- Promote more discussion on watershed management activities in communities.
- Examine appropriate forestry technique for each area.
- Consider suitable species in each area based on basic environmental requirements.
- Manage tree seedlings appropriately to increase their survival rates at plantation sites
- Promote agroforestry to utilize limited areas of lands efficiently and sustainably.
- Strengthen monitoring of activities as well as effect and impact of the activities.

(6) Capacity Development

For more effective and efficient implementation of the activities, it is vital to improve capacity of human resources and organizations in the Region. For example, it is important to add more practical curriculum to the trainings of experts and DAs.

5.4 Livelihood Improvement Component

5.4.1 Planning of the Activities

The livelihood improvement component contained various kinds of activities since the activities were related to people's daily livelihoods in each Woreda. The selection of the activities was done according to the following processes.

1. Issuance of Request Letter and Explanation to the 8 Target Woredas
2. Discussions of the Proposed Activities and Planning with the Related Offices
3. Selection of the Activities for Livelihood Improvement Component

(1) Issuance of Request Letter and Explanation to the 8 Target Woredas

Before the commencement of the planning meetings for livelihood improvement component, on 15 October 2009, the Study Team issued a request letter to the Administrators of the 8 target Woredas to select several livelihood improvement activities as candidate verification project activities (women support, vocational training, and so forth). The letter also mentioned that possible activities could be out of the model watersheds where agricultural promotion and natural resource management components had been implemented since many activities related to livelihood improvement were not

considered to be location-specific. (e.g. Vocational training could be done anywhere in the Woreda unless the locally available resources are utilized.) It was also quite probable that these candidate activities could be out of control of the WAO (Vocational training is normally managed by the SME.); hence, the Study Team requested the Woreda Administrators to coordinate and take initiatives for the livelihood improvement component planning.

On 22 October 2009, the Study Team firstly visited Ebinate Woreda and explained the above points on livelihood improvement component to the Woreda Administrator and WAO, and the explanation to the target Woredas was completed at Aregoba Woreda on 17 November 2009 as shown below.

Woreda	Date	Meeting With
Ebinate	22 October 2009	Woreda Administrator and WAO
Simada	23 October 2009	Woreda Administrator and WAO
Bugena	30 October 2009	Woreda Administrator and WAO
Gidan	2 November 2009	Head of Woreda Administration Office and WAO
Kobo	28 October 2009	Woreda Administrator and WAO
Mekedela	16 November 2009	Woreda Administrator and WAO
Legambo	10 November 2009	Woreda Vice Administrator
	7 December 2009	Woreda Administrator and WAO (2nd explanation)
Aregoba	17 November 2009	Woreda Administrator and WAO

(2) Discussions of the Proposed Activities and Planning with the Related Offices

After the explanation to the 8 target Woredas, the proposals prepared by various offices were sent to the Study Team mainly by fax. After receiving the proposals, discussions of the proposed activities with these offices concerned started at each Woreda from 4 December 2009 and finished in the beginning of March 2010. The Study Team visited the offices concerned in each Woreda and had discussions on their proposals and plans as shown below.

Woreda	Date	Meeting With
Ebinate	4 December 2009	WAO
	12 February 2010	WAO with ORDA expert
Simada	9 February 2010	WAO
	24 February 2010	WAO
Bugena	9 March 2010	WAO
Gidan	9 December 2009	WAB, SME, HIV/AIDS Directorate
	15 February 2010	WAB, SME, HIV/AIDS Directorate
Kobo	22 February 2010	Woreda Administrator, BoWRD, SME, WAB, Education Office
	23 February 2010	SME, WAB
Mekedela	7 December 2009	Woreda Administrator, Mekedela Preparatory and Secondary School
	3 March 2010	Woreda Administrator, Mekedela Preparatory and Secondary School, WAO
Legambo	1 March 2010	SME
Aregoba	8 December 2009	Woreda Vice Administrator, SME
	25 February 2010	SME, Education Office

In Bugena and Aregoba, the Study Team proposed to introduce the roof rainwater harvesting facilities since they might be useful in these two severely water-scarce Woredas to mitigate laborious water fetching works mainly burdened by women and children. Because no rainwater harvesting facilities had been virtually installed in these two Woredas based on the field survey, which meant that many people there don't know the rainwater harvesting facilities, the idea was proposed by the Study Team.

(3) Selection of the Activities for Livelihood Improvement Component

Through the discussions with the offices concerned at each Woreda, the activities for livelihood improvement component were selected as summarized in the table below.

Table 5.4.1 Summary of Selected Activities for Livelihood Improvement Component

Woreda	No.	Activity	Organization in Charge	Remarks
Ebinate	1	Aquaculture for youth association support	WAO	30 members training
	2	Improved heifer introduction for HIV/AIDS association support	WAO	5 heifers
Simada	1	Spring & hand dug well development	WAO	At Engudadar Kebele
Bugena	1	Roof rainwater harvesting facilities	Water Resource Development Office	Burko Primary School
Gidan	1	Ewe keeping training for women	WAB	10 women training
	2	Business skill training for PLWHA	HIV/AIDS Directorate	10 PLWHA people training
	3	Vocational training (carpentry)	SME	5 people training
Kobo	1	Vocational training (sewing and brick production)	SME	2 persons for sewing and 2 groups for brick production
	2	Gender mainstreaming	WAB	For 2 Kebeles and IGA training for 8 women
	3	Primary school construction support	Education Office	At Buhoro Kebele
Mekedela	1	Mekedela Preparatory and Secondary School support (library and hand dug well)	Mekedela Preparatory and Secondary School	At Masha
Legambo	1	Business shed construction for youths	SME	At Akesta
Aregoba	1	Roof rainwater harvesting facilities	Water Resource Development Office	Fetekoma Primary School
	2	Goat fattening training for jobless people	SME	30 people training

Some activities such as goat fattening in Aregoba could be considered as agricultural promotion component. However, the main purpose of the activity was to train jobless and the office in charge was not WAO in the case of Aregoba, it was considered as an activity of the livelihood improvement component. Hence, some interdisciplinary activities were included in the livelihood improvement component such as ewe keeping training for women in Gidan and aquaculture for youth association support in Ebinate. These activities can be classified into five types of activity, namely business, livestock, education, gender and water related activities in accordance with their major objectives. The following table shows the result of grouping.

Table 5.4.2 Classification of Activities for Livelihood Improvement Component

Activity Type	Business	Livestock	Education	Gender	Water
No. of activities	4	4	2	1	3
Activity	Gidan 2 Gidan 3 Kobo 1 Legambo 1	Ebinate 1 Ebinate 2 Gidan 1 Aregoba 2	Kobo 3 Mekedela 1	Kobo 2	Simada 1 Bugena 1 Aregoba 1

Both business and livestock activities aimed to enhance income so they were considered as a kind of income generation activities. Also it needs to mention that many activities had plural objectives. For instance, gender mainstreaming in Kobo had three activities; gender analysis in rural Kebeles, gender mainstreaming training for school teachers/students and administrative leaders, and income generation activities for women. Also the aquaculture training in Ebinate had purposes to ease an unemployment

issue and to supply protein to rural people. Hence the grouping into the five types is just for the sake of convenience.

5.4.2 Business Related Activities

(1) Business Skill Training for PLWHA People (Gidan)

1) Summary of the Activity

In the following table, the business skill training for PLWHA people activity in Gidan is summarized.

Table 5.4.3 Summary of the Activity: Business Skill Training for PLWHA (Gidan)

Location	Muja town, Gidan Woreda
Objective	The activity aims to improve the livelihood of HIV/AIDS carriers through business skill training.
Activity Level*	Demonstration/Application
Implementer	HIV/AIDS Directorate
Period	April 2010 – June 2010
Beneficiary	10 people living with HIV/AIDS (8 females and 2 males)
Activity Progress	<u>May 2010</u> Criteria for selection of beneficiaries were established. They should be PLWHA and incapable of running small businesses because of technical skill and financial deficiencies while they were able and willing to work in such a way that they will be independent economically. Based on the criteria, 10 beneficiaries were selected. (4 from rural Kebeles, 6 from Muja Town) On 31 May 2010, business skill training for PLWHA was started with the beneficiaries at Muja Preparatory and Secondary School. This training was done for five consecutive days, until 4 June 2010. (8:30-17:30) The training topics included general concept of business, screening and selection of alternative small scale and micro businesses, the concept of customer and customer satisfaction, and so forth. <u>June 2010</u> Seed money of Birr 1,517 was given to each trained beneficiary to start his/her own business venture. The types of business ventures which have been selected by the trained beneficiaries were buying and selling of cereals for profits, engaging in kiosks, and café. The seed money was allocated through credit which planned to serve as fund revolving cash for the next beneficiaries. Hence, the trained beneficiaries who received the seed money agreed to pay back within two years by paying Birr 63 every month. <u>July 2010</u> On 3 July 2010, the Woreda HIV/AIDS Directorate conducted its first monitoring activity whether the trained beneficiaries on business skill training began businesses with the seed money they received. The monitoring activity was undertaken by door to door assessment on each trained beneficiary and in the market.  6 beneficiaries are interviewed. It was revealed that eight targeted beneficiaries commenced own businesses and all of them engaged in the buying and selling of cereals for profit margin. The remaining two beneficiaries still didn't start any businesses by using the seed money. They didn't still decide the type of the businesses they want to engage. <u>December 2010</u> Out of 10, nine trainees are running business. It was revealed that one of them used the money

	she received for construction of house out of the activity objective. Now seven of the targeted beneficiaries are engaged in cereal trading because they found the demand and profit in cereal trading better. One is engaged in cooking materials trading and the other is running both cereal and cloth trading.

Note: *: Activity Level Classification: Trial (T), Demonstration/Application (D/A), Extension (E)

2) Result of the Activity

Among the 10 trained beneficiaries, nine trainees did their own businesses as of December 2010.

3) Evaluation by the Study Team[24]

Table 5.4.4 Evaluation by the Study Team: Business Skill Training for PLWHA (Gidan)

Effectiveness: Good	Selection of trainees and business skill training were done very smoothly. Most trainees started their own activities and got more incomes. One of them used the money for another purpose and repayment is not yet started.
Validity: Very good	PLWHA are considered to be the vulnerable in the society. Even in rural Woredas, there are some PLWHA so it is worthwhile to support them to be independent.
Sustainability: High	Initial project budget per beneficiary is rather low and can reproduce the similar activities if repayment is done on schedule.

(2) Vocational Training for Carpentry (Gidan)

1) Summary of the Activity

In the following table, the vocational training for carpentry activity in Gidan is summarized.

Table 5.4.5 Summary of the Activity: Vocational Training for Carpentry (Gidan)

Location	Muja town, Gidan Woreda
Objective	The activity aims to improve the jobless local people.
Activity Level*	Demonstration/Application
Implementer	Small and Micro Scale Enterprise Office
Period	April 2010 – July 2010
Beneficiary	5 jobless people (5 males)
Activity Progress	June 2010 Criteria for the selection of beneficiaries were established. These criteria were; • being grade 10 but still unemployed, • motivated to engage in proposed activity/carpentry, and • motivated to apply the training provided in the process of being self-reliant. Based on the criteria, 5 targeted beneficiaries were selected and all of them were from Muja Town. Also the bid process for the procurement of required material was finalized.  Practical training Vocational training on carpentry was started on 20 June 2010. The training included both theoretical and practical trainings. Theoretical training was given for 10 consecutive days starting 20 June 2010 and the practical training was followed. The topics of the training in both theory and practice were; • Identification of the tools used for carpentry activities, • Identification of the functions of each tools used for carpentry activities, • How to use the carpentry tools, and

[24] The evaluation used here are the same four-level grades described in "5.6 Final Evaluation and Lessons Learned".

	• Management of iron sheet and nails during construction. The training covered designs and sketch of houses commonly constructed in the region. <u>July 2010</u> Vocational training on carpentry was finalized on 14 July 2010. The materials which were procured and used for the training were ropes, nails (size 8 and 9), 32 gauge iron sheets and small size iron sheets. The materials which were distributed to trainees after the training comprised hammer, saw, leveling instrument, set square and rope. <u>December 2010</u> Four beneficiaries worked as carpenters while another started education and now he is not working as a carpenter. Four of the beneficiaries and the trainer plus other five unemployed youth formed an association on carpentry. The association didn't start its business since there were other procedures they need to fulfill.

Note: *: Activity Level Classification: Trial (T), Demonstration/Application (D/A), Extension (E)

2) Result of the Activity

Among the 5 trained beneficiaries, four of them are engaged in carpentry and they organized an association as of December 2010.

3) Evaluation by the Study Team

Table 5.4.6 Evaluation by the Study Team: Vocational Training for Carpentry (Gidan)

Effectiveness: Not so good	Training was done with a little delay. Even though 25-day training was provided to 5 trainees, it was difficult for them to compete with other existing skilled carpenters. It needs more support from Woreda SME office.
Validity: Not so good	If construction is booming, the demand for carpenters is high. But, at present, the market size in Muja was limited so newly trained carpenters had problems to operate business as they expected. Market/demand research is important prior to the implementation of the activity.
Sustainability: High	Once the trained carpenters get skilled, they can maintain their livelihoods by themselves, but it may take some time. In other big towns such as Weldia and Dessie, construction is booming. So if they can remove to these towns, better business operation can be possible.

(3) Vocational Training for Sewing and Brick Production (Kobo)

1) Summary of the Activity

In the following table, the vocational training for sewing and brick production activity in Kobo is summarized.

Table 5.4.7 Summary of the Activity: Vocational Training for Sewing and Brick Production (Kobo)

Location	Robit and Gobiye Kebeles for Sewing, Afaf Kebele for Brick production
Objective	The activity aims to improve livelihoods of the jobless local people.
Activity Level*	Demonstration/Application
Implementer	Small and Micro Scale Enterprise Office
Period	April 2010 – July 2010
Beneficiary	Sewing: 2 residents in Robit and Gobiye Kebeles Brick production: 29 residents in Afaf Kebele
Activity Progress	<u>May 2010</u> In the planning discussions, the number of trainees was decided. 29 targeted beneficiaries are selected on the basis of (1) being landless, (2) no means of income, and (3) the availability of large resources of sands, in the candidate Kebele (Buhoro). <u>June 2010</u> The training on brick production was scheduled at Buhoro on 1 June 2010. On the day, the training didn't start even if the trainees were in the training areas and other preconditions were

arranged by SME. It was revealed that the trainees requested allowances while the SME planned not to pay allowances instead providing the trainees required materials for brick production.

The previous proposed beneficiaries of Buhoro Kebele were replaced by the new other beneficiaries of Afaf Kebele. This Kebele was selected because of the availability of enormous amounts of sands and a river which flows throughout the year along with the commitment of the new targeted beneficiaries to be engaged in brick production. The new other beneficiaries of Afaf Kebele were selected and trained since the SME found them committed to take the training without paying allowances. Training on brick production was started on 3 June and ended on 7 June 2010. The total participant beneficiary trainees were twenty nine who are from the same Kebele.

4 brick production molds of size 15 (small brick) and of size 20 (large) were purchased and distributed to the trained beneficiaries. 29 trained beneficiaries with other 13 people started production of bricks under the two associations called Addis Kegn and Wodey. The associations planned to sell bricks of size 15 (small) for Birr 9 per piece and of size 20 for Birr 12 per piece in Weldia.

Criteria for selection of beneficiaries on sewing were established and they were:

- Those who are grade 10 complete but still unemployed.
- Those motivated to engage in tailoring.
- Those that have technical skill and experience in tailoring.

Two beneficiaries from two rural Kebeles of Gobiye and Robit were selected and trained by TVET school experts in Weldia during 4 - 7 June 2010. Two sewing machines were purchased (Birr 5,000) and were distributed to the trained beneficiaries on 22 June 2010.

<u>July 2010</u>
The two targeted beneficiaries received one sewing machine from the SME through signed agreement on credit which planned to serve as revolving fund for next beneficiaries. Repayment period is three years.

One of female trainees for sewing in Robit used the new sewing machine for more production of clothes and thereby she was producing around 100 clothes by using two sewing machines as compared to the previous production of 60-70 clothes per week only by using the sewing machine she was renting (Birr 40/month) and she earned 5-7 Birr net benefit from each cloth sold where the selling price of clothes ranged Birr 30-35.


Woman working with a sewing machine

However, another male trainee didn't start any business by using the sewing machine. Later it was revealed that he was not trained in Weldia. Because the person who was trained in Weldia refused to receive the manual sewing machine procured by the SME, he was selected as a substitute sewing machine receiver. Therefore SME considered providing him sewing training, or to take the sewing machine from him and give it to another beneficiary if he doesn't show commitment to improve his business.

Brick production was suspended since the sale of bricks was a problem. The presence of gravel in the produced bricks created less demands in Weldia. For this identified problem, the SME tried to find a solution to provide the association with separation materials. So far, 311 bricks were sold.

<u>December 2010</u>
SME decided to take a sewing machine from the beneficiary in Gobiye after maintenance of the machine is done and to provide it to another person. The members of the brick production

	association were producing bricks in line with their harvesting activities. SME discussed with the Mining Office to give the associations a new production site near to the main road to Weldia.

Note: *: Activity Level Classification: Trial (T), Demonstration/Application (D/A), Extension (E)

2) Result of the Activity

For the brick production, two associations continued producing bricks. As for the sewing, the beneficiary in Gobiye would change to another person as of December 2010.

3) Evaluation by the Study Team

Table 5.4.8 Evaluation by the Study Team: Vocational Training for Sewing and Brick Production (Kobo)

Effectiveness: Not so good	For both brick production and sewing activities, there were problems on beneficiary selection although a female sewing beneficiary is very successful.
Validity: Good	There are big demands for bricks in Weldia and Kobo. If there are abundant local resources, brick production has good validity. Tailoring is profitable as the female case indicates but it needs expensive sewing machines to start.
Sustainability: High	As for the brick production, materials are unlimited on the river bank, but quality control is necessary to select unified gravel/sand size. Tailoring needs some skills to be successful in addition to the sewing machines.

(4) Business Shed Construction for Youths (Legambo)

1) Summary of the Activity

In the following table, the business shed construction for youths activity in Legambo is summarized.

Table 5.4.9 Summary of the Activity: Business Shed Construction for Youths (Legambo)

Location	Akesta town, Legambo Woreda
Objective	The activity aims to support jobless youths who have finished training for income generation activities through provision of shed for business.
Activity Level*	Demonstration/Application
Implementer	Small and Micro Scale Enterprise Office
Period	April 2010 – September 2010
Beneficiary	4 jobless youths and 2 associations
Activity Progress	<u>June 2010</u> The site for the shed was selected and the bid process for construction of sheds was planned to be started around 10 June 2010. The fact that municipality of Akesta town prohibited new constructions because the master plan of the town was under revision contributed to the delayed implementation of the proposed activities. The proposed business sheds were planned to have eight partitions with six small for private beneficiaries and the remaining big two for associations. The establishment of selection criteria and selection of targeted beneficiaries would be planned to be undertaken along with the relevant stakeholders; Women Affairs Office, youth associations and Kebele administration immediately after the construction of the proposed business shed. <u>July 2010</u> The local contractor was identified and it made construction materials of sands and stones available at the selected site. The construction of the shed started on 18 July 2010. Assigned expert from municipality of Akesta followed up the construction process and provided required technical support. The numbers of shed partitions for individual youth beneficiaries was reduced to four from six since the SME found the total cost of construction were above the allocated budget. With the

	budget of SME, the office prepared a signboard on which mentions, "This shed is for selling and/or producing products where it has been constructed by the financial contribution of the Japanese Government". September 2010 The selection criteria for targeted beneficiaries were made as indicated below. • Those who are motivated to engage in the proposed activities. • Those registered as unemployed in 2010 by the Kebele Administration. • Those who are willing to manage the sheds in accordance with SME contract regulation. • As for maintenance of business sheds, those who are willing and able to pay Birr 30 per month for the sheds with an area of 3 x 3 meters. • As for maintenance of business sheds, those who are willing and able to pay Birr 40 per month for the sheds with an area of 6 x 3 meters. • Those who can organize in association or those who can organize in groups of 3-4 individual are advantageous to be selected.  All the necessary bylaws were made as shown below. • Handling the sheds in accordance with the required and possible safety and handling them in conditions which do not damage them. • Hand over the sheds to the office of SME if the contract is terminated on the side of one of the two or both. • As for the purpose of maintenance cost coverage, paying Birr 30 monthly for the office of SME for the sheds with an area of 3 x 3 meters. • As for the purpose of maintenance cost coverage, paying Birr 40 monthly for the office of SME for the sheds with an area of 3 x 6 meters. • Handover the sheds to the office of SME if it is required for some other purpose. Shed was constructed and transferring the rooms to beneficiaries started. December 2010 The two big partitions were not yet distributed to tenants. SME planned to distribute at the end of December 2010.

Note: *: Activity Level Classification: Trial (T), Demonstration/Application (D/A), Extension (E)

2) Result of the Activity

All the four small compartments (3 x 3 meters) for individual groups were being utilized as barber, café, tailoring and food shops. The 2 big compartments (6 x 3 meters) were still vacant as of December 2010.

3) Evaluation by the Study Team

Table 5.4.10 Evaluation by the Study Team: Business Shed Construction for Youths (Legambo)

Effectiveness: Good	For the jobless youths who live in town areas, this activity was effective. One of the reasons for success seemed to result from its good location; it is located on a busy street. But the two partitions for associations were still vacant.
Validity: Very good	For private shop operation, it is normally started by a shop owner after he/she gets a loan through his/her own efforts. In rural towns, such financial services are not readily available and it is inevitable for jobless youth to rely on their family. From these points of view, the activity has very high validity.
Sustainability: High	The operation of individual shops was quite well but two large compartments weren't utilized by any associations. Since the total income from the rent is very important for SME to reproduce the similar activities, it is urgently necessary to find tenants for the vacant partitions.

5.4.3 Livestock Related Activities

(1) Aquaculture for Youth Association Support (Ebinate)

1) Summary of the Activity

In the following table, the aquaculture for youth association activity in Ebinate is summarized.

Table 5.4.11 Summary of the Activity: Aquaculture for Youth Association Support (Ebinate)

Location	Zeha Kebele, Ebinate Woreda
Objective	The activity aims (1) to improve the livelihood development of youth association, (2) to increase their income, and (3) to provide fish meat to the local people.
Activity Level*	Demonstration/Application
Implementer	WAO
Period	April 2010 – December 2010
Beneficiary	Youth Association in Zeha Kebele
Activity Progress	<u>June 2010</u> Criteria for selection of targeted youth beneficiaries were established by the WAO and distributed to the concerned Kebele. The criteria include; (1) To be resident in that Kebele, (2) To be motivated to work in the proposed activity, and (3) To be grade 10 complete but still unemployed. Site selection and technical assessment for construction of the proposed fishponds were undertaken by the assigned team from BoARD, ARARI and ORDA along with the WAO representatives.  Fishponds under construction Bariya Wonze nursery in Zeha Kebele was selected as the site for the proposed fishponds on the basis of potentiality and feasibility in terms of water supply required for fishponds. Excavation of the land for the two fishponds started and reached to 50 cm depth. <u>July 2010</u> Selection of 30 targeted youth beneficiaries (21 males and 9 females) was undertaken on the basis of the above criteria. The excavation of the land for one of fishponds was finalized except a few remaining works and reached to 1.2 meter depth. After the commencement of fishpond excavation, the ownership claim of WFP for the areas of fishpond arose but FSCDPO settled the issue in October. There was a problem of acquiring the casual laborers for excavation of the fishponds as per the daily payment of safety net programs. Also there was a lack of communication and the absence of required technical support both during excavation and after excavation from ORDA to implement further activities. <u>September 2010</u> Additional equipments were purchased for the pond construction and excavation of two fishponds was completed. The excavated ponds had rain water inside and it was necessary to be pumped out by generator in two weeks for the final works of fishponds. Since trainees were already recruited, training would be given soon after the completion of the pond construction. 'Nora' (to develop algae) was also purchased. <u>October 2010</u> Once the aquaculture training schedule was made in the end of October, it was cancelled because the ARARI fishery officer suddenly got an urgent work in Addis Ababa. Training would be rescheduled with the WAO representatives through ORDA focal person.

	December 2010 The training was planned to be conducted in late December 2010. For the training, 35 targeted youth beneficiaries, 2 Zeha Kebele DAs, 1 Supervisor, 1 Woreda livestock expert and 2 other experts were going to participate.

Note: *: Activity Level Classification: Trial (T), Demonstration/Application (D/A), Extension (E)

2) Result of the Activity

Although 30 target beneficiaries were selected and the two fishponds were constructed, training had not yet been done because of the poor schedule coordination between the NGO subcontractor and regional fishery experts as of December 2010. Together with ZAO, WAO is responsible for the monitoring and follow up of the ongoing/future activities.

3) Evaluation by the Study Team

Table 5.4.12 Evaluation by the Study Team: Aquaculture for Youth Association Support (Ebinate)

Effectiveness: Not good	Selection of site and beneficiaries were smoothly conducted. In addition, the pond excavation was almost completed before the rainy season started. However aquaculture training implementation was delayed very much and aquaculture was not yet started by trained beneficiaries.
Validity: Very good	Ebinate Woreda is in shortage of fish due to its geographical and river conditions, but the selected site has a perennial stream. Therefore it is assumed that the fish production through aquaculture, that has following dual purposes; to supply fish meat to local people and to provide employment opportunities for unemployed youths, has very good validity.
Sustainability: Medium	Since the aquaculture was a new activity for WAO, continuous technical support was necessary. But now technical support providers are available only in Bahir Dar, the fishery experts of BoARD. Even if Ebinate Woreda is relatively near to Bahir Dar as compared to other 7 target Woredas, it takes 2 hours by car. Close technical assistance could be an obstacle for its sustainability.

(2) Improved Heifer Introduction for HIV/AIDS Association Support (Ebinate)

1) Summary of the Activity

In the following table, the improved heifer introduction for HIV/AIDS association support activity in Ebinate is summarized.

Table 5.4.13 Summary of the Activity: Improved Heifer Introduction for HIV/AIDS Association Support (Ebinate)

Location	02 Kebele, Ebinate Woreda
Objective	The activity aims (1) to improve the livelihoods of HIV/AIDS carrier association (200 members), (2) to care & support vulnerable group, (3) to increase their income, and (4) to provide milk to local people.
Activity Level*	Demonstration/Application
Implementer	WAO
Period	April 2010 – September 2010
Beneficiary	HIV/AIDS carrier association (TSINAT MAHIBER)
Activity Progress	June 2010 Discussion was made among the stakeholders. The WAO decided to distribute the heifers to the TSINAT HIV/AIDS association through fund revolving system and the association agreed to payback with in three years after commencement of operation. WAO communicated with the Zone and Regional Agricultural Bureaus on selection of the improved heifer and it was revealed that better improved heifers could be purchased from Farta Woreda around Debre Tabor town. WAO held discussions with the concerned HIV/AIDS Association about the contribution of the association. The association agreed to provide woods, iron sheet and nails for the construction

	of a new cowshed. The main works of the cowshed construction were almost completed by the end of June 2010. The fact that the WAO faced long bureaucratic procedures of the Woreda Finance Office for the procurement of required materials caused the delayed implementation of proposed activities. <u>July 2010</u> Because the association members were busy in farming activities, the construction of cowshed was not yet finalized in the end of July. Wall plastering started and association members planted fodder crops around the shelter in the end of July. The WAO didn't still procure heifers since their prevailing market price was found to be around Birr 8,000-9,000 per heifer which was above the expected and planned unit price of Birr 6,000 per heifer. <u>September 2010</u> Shed construction was completed but its plastering was still ongoing and feeding bowl would be constructed soon. (16 quintal cement purchased for the construction of feeding bowl but sand was not yet delivered.) Five heifers were procured by WAO with a total amount of 24,000 Birr but dairy farming could not yet start because the purchased heifers were not matured enough for milking. Medicines for the cows would be purchased. <u>December 2010</u> All of the heifers procured were healthy. They didn't face any health problems but none of them still started milk production.


Plastering preparation

Note: *: Activity Level Classification: Trial (T), Demonstration/Application (D/A), Extension (E)

2) Result of the Activity

As planned, a cowshed was newly constructed and fodder crops were planted by association members. To avoid high price of heifer, WAO procured 5 heifers in September but they were not matured enough for dairy production as of December 2010. To have income through dairy farming, it will take some more time.

3) Evaluation by the Study Team

Table 5.4.14 Evaluation by the Study Team: Improved Heifer Introduction for HIV/AIDS Association Support (Ebinate)

Effectiveness: Good	As the association evaluated, the introduced heifers have not yet produced milk or income, but association members worked hard for shed construction and fodder crop cultivation. They will soon get benefits of milk and income.
Validity: Very good	Many people living with HIV/AIDS (PLWHA) are considered as the needy vulnerable in the society, so it has very good validity.
Sustainability: High	After the heifers get matured and start producing milk, certain amount of income is envisaged to be generated. But initial input cost was rather high.

(3) Ewe Keeping Training for Women (Gidan)

1) Summary of the Activity

In the following table, the ewe keeping training for women activity in Gidan is summarized.

Table 5.4.15 Summary of the Activity: Ewe Keeping Training for Women (Gidan)

Location	Bekelo Manekiya Kebele, Gidan Woreda
Objective	The activity aims to increase the income of women.
Activity Level*	Demonstration/Application
Implementer	Women Affairs Office with WAO
Period	April 2010 – June 2010
Beneficiary	10 female trainees
Activity Progress	<u>May 2010</u> Criteria for the selection of targeted women beneficiaries were established and distributed to the targeted Bekelo Manekiya Kebele. These criteria were; • Being resident in the Bekelo Manekiya Kebele, • Being able and willing to work in ewe keeping, • Unable to run the proposed activity because of both financial shortage and skill deficiency, and • Having enough land area for ewe keeping. The Bekelo Manekiya Kebele Administration made its own comments regarding the targeted beneficiaries to be selected on the basis of established criteria. Based on the criteria established for the selection of targeted women beneficiaries and comments from the Bekelo Manekiya Kebele Administration, 10 rural women beneficiaries were selected. <u>June 2010</u> The 10 rural women beneficiaries were trained in ewe keeping on 10 June 2010 for one day. The training was facilitated by two trainers from Gidan WAO, animal production and animal health experts. The topics of training for ewe keeping included; • The general concept of ewe keeping, • Concept of ewe feeding, • Shelter construction for ewes, • Kinds of feeds for ewe, and • The general concept of keeping ewes' health condition. After training, 3 ewes and 1 ram were distributed to 8 beneficiaries on 11 June 2010. (Two beneficiaries received 5 sheep.) The beneficiaries agreed to payback within 2 years, by June 2013, in accordance with the written signed contract. The total cost of 3 ewes and 1 ram with some important feeds incurred for each beneficiary was Birr 1080 (1,000: 250 x 4 sheep + 80: feed).  Woman with ewes <u>July 2010</u> Separate monitoring checklist for the activity of ewe keeping training for women was prepared by Woreda Women Affairs Office. <u>August 2010</u> According to the monitoring result done by Woreda Women Affairs Office during 3-5 August, 3 sheep were sick and 1 sheep was dead but 4 baby sheep were born. <u>September 2010</u> According to the monitoring result done by Woreda Women Affairs Office during 13-15 September, all the 3 sheep found to be sick recovered and 8 baby sheep were born. But unfortunately 1 sheep was dead.

Note: *: Activity Level Classification: Trial (T), Demonstration/Application (D/A), Extension (E)

2) Result of the Activity

All the activities were smoothly implemented as planned. This mainly resulted from good

performance of Woreda Women Affairs Office as of December 2010. Most trained women started having newborn sheep, but not yet generated income since they intended to sell sheep after a certain period of growth.

3) Evaluation by the Study Team

Table 5.4.16 Evaluation by the Study Team: Ewe Keeping Training for Women (Gidan)

Effectiveness: Very good	Planned activities were smoothly implemented and sheep was procured and distributed on time by the initiatives of Woreda Women Affairs Office.
Validity: Good	Most rural women are still at a lower financial condition as compared to men. If fodder crops are available without degrading watershed environment, validity is considered to be very high.
Sustainability: Very high	Initial project budget per beneficiary was relatively low and it was within the repayment ability. Hence it is easy to reproduce the similar activities.

(4) Goat Fattening Training for Jobless People (Aregoba)

1) Summary of the Activity

In the following table, the goat fattening training for jobless people activity in Aregoba is summarized.

Table 5.4.17 Summary of the Activity: Goat Fattening Training for Jobless People (Aregoba)

Location	Medina town, Aregoba Woreda
Objective	The activity aims (1) to create income generation activities and (2) to improve living standards of local people.
Activity Level*	Demonstration/Application
Implementer	Small and Micro Enterprise Office with WAO
Period	April 2010 – December 2010
Beneficiary	30 jobless people (16 females and 14 males)
Activity Progress	<u>June 2010</u> Criteria for selection of beneficiaries of goat fattening training for jobless people were established. These criteria were; • Being jobless but able and willing to work, • Being dependent on family for survival, and • Motivated to engage in the proposed activities. Based on the criteria, 30 jobless people (16 female and 14 male) were selected. 3-day training on business skill for the selected beneficiaries started from 24 June 2010. The training was done by two experts from SME and included following items. • Basic business skills • General concept of income generation activities • Identification and screening of different types of income generation activities • Saving, Business planning concepts • Basic book keeping and recording system 29 targeted beneficiaries were trained in which fifteen were male and fourteen were female. Including the person who didn't participate in the training on business skill, all 30 targeted beneficiaries planned to be organized in association. <u>July 2010</u> SME decided to procure a water tank of 2,500 liters since the office faced some budget gap to procure the planned water tank of 5,000 liters. The procurement of the water tank was decided to be undertaken directly by SME without the involvement of the Finance Office since the SME faced long procurement procedures on side of the Finance Office. The bidding process of Roto tank procurement was finalized and the bidding process of construction of shelters for goats was also finalized and the contractor was identified.

	For the construction of shelter for goats, 60 iron sheets and 6 quintals of cement were purchased. Woods for the shelter construction of goats were procured and the trained beneficiaries agreed to contribute some woods. The trained beneficiaries were organized in two associations. One of the associations consists of 15 beneficiaries and the other association consists of 14 beneficiaries <u>October 2010</u> The construction of shelter for goats was not yet finalized where only excavation of the basement and other land preparations was done. Water tank was not yet procured because SME found unit price of proposed Roto water tank (2,500 liters) was very expensive unexpectedly contrary to the collected market information. Goat fattening training was not yet provided. Except for iron sheets, cement and nails, all other materials required for implementation of the project activity were not yet procured though SME made requisition. The targeted beneficiaries requested SME many times to provide them with goat fattening training and goats and thereby they would engage in goat fattening activity. However, because of long bureaucratic procurement procedures on the side of Finance Office, SME couldn't provide them goat fattening training and goats. Hence, the targeted beneficiaries complained about the delayed implementation of goat fattening training. SME requested the Finance Office to perform the procurement of all required materials needed for accomplishment of the project activities. Also they informed the Woreda Administration about the problems associated with delayed construction of shelter for goats and delayed implementation of goat fattening training and thereby they would make solution measures on their side so as to complete the project activity before 31 December 2010. Hence, SME modified the plan of procuring 2,500 liters of water tank by the iron sheet beam which is low cost and thereby a rise in unit price for woods which are required for construction of shelter for goats would be compensated. Also they decided to fill the budget gap from the SME government allocated budget if the project activity needs additional costs for accomplishment of the proposed activities of goat fattening training for jobless people. <u>November & December 2010</u> No remarkable progress of the activity was made because of long bureaucratic procurement procedures on the side of Finance Office.

Note: *: Activity Level Classification: Trial (T), Demonstration/Application (D/A), Extension (E)

2) Result of the Activity

Because of the poor communication and transportation conditions in Aregoba Woreda, goat fattening had not yet been implemented as of December 2010. Stagnation of activities was observed not only for this component but also for the many activities for Agricultural Promotion and Natural Resource Management Components. Therefore the poor activity implementation might result from the specific conditions in Aregoba Woreda.

3) Evaluation by the Study Team

Table 5.4.18 Evaluation by the Study Team: Goat Fattening Training for Jobless People (Aregoba)

Effectiveness: Not good	Although it has been passed more than 6 months since the activity plan was decided, training has not been provided to the 30 beneficiaries. There were various reasons for delay but it is unavoidable to evaluate as "not good".
Validity: Good	Aregoba Woreda has neither urban areas nor urban population. Because of this, non-agricultural income generation activities (commercial or industrial related ones) were almost impossible to introduce. It was proper to come up with goat fattening training from its specific background.

	However, the material procurement was very difficult in Medina, which made the activity suspended for a long time. It may be suitable to introduce a more simple method like the activity of ewe keeping training in Gidan Woreda.
Sustainability: Medium	For the better sustainability, inputs/materials from outside Woreda should be minimized because the transportation/supply was very limited under the present poor road conditions.

5.4.4 Education Related Activities

(1) Primary School Support for Construction (Kobo)

1) Summary of the Activity

In the following table, the primary school support for construction activity in Kobo is summarized.

Table 5.4.19 Summary of the Activity: Primary School Support for Construction (Kobo)

Location	Buhoro Kebele, Kobo Woreda
Objective	The activity aims to support construction of a primary school building.
Activity Level*	Demonstration/Application
Implementer	Woreda Education Office
Period	April 2010 – December 2010
Beneficiary	Primary school children in Buhoro Kebele
Activity Progress	<u>May 2010</u> The Education Office made an effort to convince the targeted community to make contribution in terms of providing sands, stones, woods and straws of teff which were required for the proposed construction of primary school. Preconditions for the procurement of the required irons sheet and nails were accomplished and the bid process was finalized. The construction of a primary school wasn't started yet because the farmers in the targeted area were found to be very busy by their farming activities by which they couldn't make contributions of materials. <u>June 2010</u> On June 9, discussions were held with community regarding their contribution and selection of site. 102 iron sheets were purchased at a unit price of Birr 136 (32 gauge), total in Birr 13,872. 17 quintals of cement were also purchased at a unit price of Birr 375, total in Birr 6,375. The site to the left side of the reconstructed primary school was selected for the construction of the proposed new class rooms of the primary school where it also incorporates some areas of the farmland. Those farmers who lost their farmland because of the construction of primary school agreed to receive alternative farmland as given by the local government. School under construction  The beneficiary community made available eucalyptus for the construction of the proposed new class rooms of the primary school. The Education Office purchased nails for the construction of the proposed primary school with its own budget. <u>July 2010</u> All necessary materials necessary to be prepared by the community for the construction of the primary school were provided. The contractor for the construction of the primary school was identified by the process of bidding rules and regulation under the government implementation procedures. However, the first identified contractor was replaced by the second identified local contractor because the first identified contractor demanded more contributions from the community. The second identified contractor signed a contract with Education Office on 19 July 2010 and made preconditions to start construction.

	November 2010 According to the Woreda Education Office, the community showed good commitment for the finalization of the reconstructed school. However, due to the shortage of community contribution, the office had discussions with the associations to make available credit to the community. The experts of the office were following up the progress of the school by the costs of the office and they were promoting the community for more contributions. It was planned to finalize the construction of the school before January 2010. The fact that the office has very limited financial capacity made it to make less financial contributions. December 2010 Roofing with iron sheets was finalized. Education Office planned to finalize plastering the wall by mud up to the end of December 2010.

Note: *: Activity Level Classification: Trial (T), Demonstration/Application (D/A), Extension (E)

2) Result of the Activity

Mainly due to shortage of materials from community contribution, school building construction was suspended for some months as of December 2010. Regardless of the work suspension, local people felt happy to see the school being constructed in their Kebele since it was their dream for long time.

3) Evaluation by the Study Team

Table 5.4.20 Evaluation by the Study Team: Primary School Support for Construction (Kobo)

Effectiveness: Not good	School construction works started but it delayed so much. Even though Education Office took initiatives for the construction in consultation with local people, it didn't go as planned.
Validity: Very good	Construction of the primary school was a community request for a long time. But it was not adopted by the local authorities. Since education is one of the most important subjects, it has a very good validity.
Sustainability: High	For this activity, the original plan didn't go well. If it goes well, it could be a model case for primary school construction in cooperation with a local community.

(2) Secondary School Support for Library and Hand Dug Well (Mekedela)

1) Summary of the Activity

In the following table, the secondary school support for library and hand dug well activity in Mekedela is summarized.

Table 5.4.21 Summary of the Activity: Secondary School Support for Library and Hand Dug Well (Mekedela)

Location	Mekedela Preparatory and Secondary School, Mekedela Woreda
Objective	The activity aims (1) to support school library because of shortage of reference books for both students and teachers, and (2) to provide water for drinking, irrigation within school site and laboratory experiments.
Activity Level*	Demonstration/Application
Implementer	Mekedela Preparatory and Secondary School and Water Resource Office
Period	April 2010 – December 2010
Beneficiary	School students and teachers
Activity Progress	April 2010 Design discussion for project implementation was done with Water Resource Office. May 2010 Discussions on withdrawal and management of the budget were done with the school finance and Woreda Finance Office. The draft list of reference books to be purchased was made by the teachers.

	June 2010 The draft list of reference books was revised with director, vice director and 4 other staff. In the middle of June, 2 teachers and 1 school finance staff went to Addis Ababa to purchase reference books. 232 reference books arrived at the school on 26 June 2010. The school had discussion on the hand-dug well construction with the Woreda Water Resource Office and got a conclusion. (The hand-dug well would be constructed by Water Resource Office while the school would procure 10,000 liters tank at Dessie and arrange to construct the tower to put the tank.) Site for the proposed hand dug well development was selected by the Woreda Water Resource Office. Activities of site clearing and excavation for the hand dug were started. July 2010 All the purchased reference books were marked with the JALIMPS stamp together with date by the JALIMPS team members. Students started to borrow these reference books for summer season reading.  Library of the school The process for procurement of water tank was finalized and procured in Dessie. Now a 10 m3 tank was transported to the school. Stones, sands, 10 quintals of cement, wire for tying iron bars were also procured. For the hand dug well development, different Woreda Offices made contributions in terms of providing reinforcement bar for the construction of tower. Water Office contributed 4 reinforcement bars of size 16 cm (Unit price of the bar: Birr 500), WAO contributed 10 reinforcement bars of size 12 cm (Unit price of the bar: Birr 200) and Education Office contributed 3 reinforcement bars of size 14 cm (Unit price of the bar: Birr 300). The length of all reinforcement bars is 14 meters. The hand dug well was excavated up to 6-meter depth. During excavation of the hand dug well, necessary technical support was provided by the Woreda Water Resource Office. September 2010 Excavation of the well couldn't be finished on the expected time because of heavy rain, which stagnated at the bottom of excavated well. After the water is dried up, it is planned to finalize the remaining works where all the required materials are available from the Water Office. December 2010 The accumulated water in the well was draining off by a generator. After that, wall of the well would be dried up so that construction would be resumed.

Note: *: Activity Level Classification: Trial (T), Demonstration/Application (D/A), Extension (E)

2) Result of the Activity

Due to good initiatives by the school teachers, many of the planned activities were implemented smoothly, and 232 reference books are now being utilized by both teachers and students. As for the hand dug well, the construction work by Woreda Water Office was suspended due to the stagnated water in the well caused by heavy rain as of December 2010. The construction work would restart soon.

3) Evaluation by the Study Team

Table 5.4.22 Evaluation by the Study Team: Secondary School Support for Library and Hand Dug Well (Mekedela)

Effectiveness: Good	All the activities were implemented according to the plan except for hand dug well development. Both teachers and students are making use of the reference books. In collaboration with Water Office, budget was utilized wisely.
Validity:	The school is only one secondary and preparatory school in Mekedela and students are so

Good	many so the support has very good validity. However, books provision was just an instant action, not a continuous development intervention. In the long run, the students will have better futures.
Sustainability: High	If record keeping and management of reference books are appropriate, both students and teachers use them for a long period. However, provision of reference books is generally regarded as one of government responsibilities.

5.4.5 Gender Related Activity

(1) Gender Mainstreaming (Kobo)

1) Summary of the Activity

In the following table, the gender mainstreaming activity in Kobo is summarized.

Table 5.4.23 Summary of the Activity: Gender Mainstreaming (Kobo)

Location	Gender mainstreaming
Objective	The activity aims (1) to promote gender equality, enhance women economically and (2) to contribute to the prevention of harmful traditional practices.
Activity Level*	Demonstration/Application
Implementer	Women Affairs Office
Period	April 2010 – June 2010
Beneficiary	People living in Golecha Kebele and Amaya Kebele, School teachers/students and administrative officers in Kobo Woreda, 8 target women
Activity Progress	<u>May 2010</u> Two Kebeles (Golecha and Amaya) were selected on the basis of the prevalence of gender inequality problem. Preconditions for training of gender analysis at the Kebele level were arranged and the training would be provided for five consecutive days. Through this training it was planned that the targeted beneficiaries were expected to identify the problems in their Kebele regarding gender inequality which would be expressed in terms of income, wealth, power, educational status, division of labor and asset ownership gaps. <u>June 2010</u> Gender analysis at Golecha Kebele level was done during 2 - 6 June 2010. The total numbers of participants were 26 people (13 households). The topics of the gender analysis training included household gender divisions on benefits, resource, power, labor and service/facility. During the analysis, various tools were practiced such as activity profile tool, decision profile tool, resource profile tool, service profile tool and benefit profile tool and the participants recognized activity shares, decision controls, resource shares, service/facility shares and benefits shares among men and women at the household level. The participants were able to establish consensus building on each result of the gender analysis in their Kebele. Gender analysis at Amaya Kebele level was conducted during 15 - 19 June 2010. The total numbers of participants were 23 people (11 households). Criteria for selection of beneficiaries for supporting women income generation activity (IGA) were established. The criteria were; (1) Vulnerability to the pandemic of HIV/AIDS, (2) Having day to day life through engaging in commercial sex, (3) Motivated to be organized and change their life through engaging in income generating activities other than prostituting, and (4) Having no alternative means of income. Based on the criteria, 8 targeted women beneficiaries were selected from Dur Lebese or Wacho Kebele. Training on business skill training for the 8 beneficiaries of Women IGA was conducted for 2 consecutive days from 25 June 2010 by experts from SME. The training topics included; (1) Basic business skills and Customer satisfaction, (2) Identification and screening of alternative business ventures, (3) Business planning, and (4) Saving. The 2-day training on gender mainstreaming at schools for teachers and students was conducted from 25 June 2010. The trainees were 15 people (7 males, 8 females) from five selected schools in five Kebeles. The name of schools and Kebeles were Robit Primary School (Robit Kebele), Gobiye Higher Secondary School (Gobiye), Gedemiye Primary School

	(Gedemiye), Afaf Primary School (Afaf), and Jarota Primary School (Jarota). The topics of the training include: Concepts of Gender and Sex, Gender mainstreaming for Gender equality, Gender division of labor, benefit, power, resources and service/facility, Gender Violence/Needs, Gender and Development/Poverty. After the gender mainstreaming training and discussions, teachers and students planned to strengthen the existing gender clubs or establish them in their school. The proposed training on gender mainstreaming for administrative experts was given for 31 staff for one day on 29 June 2010. The topics were almost same as the training for school teachers/students. The trainees were 31 people (17 males, 14 females) from 14 governmental offices in Kobo Woreda. After the gender mainstreaming discussions, leaders and experts planned to incorporate more the issues of gender equality in their efforts towards development. Those trained and organized beneficiaries planned to open a kiosk for selling of different commodities like spices, sugar, soap, powder, etc.  Kiosk operation is going well. <u>December 2010</u> Business of the kiosk was good because the demand was encouraging. Women Affairs Office tried to enable them to have credits from Amhara Credit and Saving Institution, Kobo Branch Office.

Note: *: Activity Level Classification: Trial (T), Demonstration/Application (D/A), Extension (E)

2) Result of the Activity

All the activities were swiftly executed by the initiatives of the Woreda Women Affairs Office. Gender analyses in the two rural Woredas resulted in better understanding of gender issues for local people. Gender mainstreaming activities for school teachers and students as well as administrative experts were successful. Although eight women were trained for IGA, only five of them joined to operate their kiosk as of December 2010.

3) Evaluation by the Study Team

Table 5.4.24 Evaluation by the Study Team: Gender Mainstreaming (Kobo)

Effectiveness: Very good	Woreda Women Affairs Office took initiatives for all the activities. Both gender mainstreaming and women IGA support activities were conducted very smoothly.
Validity: Very good	Although everyone understands that gender mainstreaming is important, it is not easy to incorporate it into daily activities. Also, other issues are often assumed to be more important than the gender issue. Therefore it is worthwhile to support the gender related activities since there are still many harmful traditional practices (HTPs) in the rural Ethiopian communities.
Sustainability: High	As compared to the activities completed, the budget scale was relatively small. To take root in the gender issues among the people, continuous support, hence budget allocation, is indispensable.

5.4.6 Water Related Activities

(1) Spring Development (Simada)

1) Project Selection

Woreda development plan was formulated during the period of October-December 2008 and January-March 2009. A development approach of infrastructure construction obtained the second position after following agriculture production in prioritization voting by Woreda officers. Road

construction was the top priority among the infrastructure construction development approach, and the second one was water supply improvement. The road construction requires huge budget for its implementation so that the JICA could not afford to assist its cost allocation. Then, an idea of water supply for portable and domestic purpose was raised up from WAO. In addition, there were eager demands for water supply facilities from villagers in Woiraye watershed, which was raised and confirmed through interview for inhabitants. Thus, a spring development was planned in Woiraye watershed by developing the existing spring, which is being utilized by the villagers.

2) Target Selection

DAs and farmers proposed 2 springs as targets for facility construction: however it was difficult to construct 2 numbers of spring development facilities within the allocated budget. Therefore, on 6th June 2010, the Study Team visited both springs with experts of WAO, DAs and farmers to select one of them. As a result of this joint inspection, it was cleared that one of the proposed springs does not have water during dry season, while another spring has water through the year. Thus, the Study Team recommended the joint inspection members the latter one for spring development and came to an agreement.

3) Activity Description

Preliminary plan for sprig development was formulated by an expert of WAO and it was sent to the Study Team Office in Bahir Dar. It was found that some issues should be clarified and confirmed before finalization of formulation so that the Study Team visited to the site with the expert. After the site visit, it required amendment of preliminary plan. The amended plan was sent to the Study Team in early March 2010, and cost estimation by the WAO expert followed it through active discussion and mutual understanding with the Study Team.

The Study Team allocated necessary budget as soon as the discussion finished: however, the bidding did not conducted because Woreda Water Resource Office demanded that spring development should be controlled by their Office. To identify the implementing office, WAO made a meeting with representatives from Woreda Water Resource Office, Woreda Financial Office and the Study Team at the end of June. During the meeting, WAO was identified as the implementing agency and Water Resource Office agreed to offer technical assistance.

Even though the role of each office was clarified, bidding was frequently postponed due to the turnover of the WAO head with long bureaucratic procedures before bidding. Finally, bidding was completed in late November. After bidding construction works started from mid December in cooperation with farmers.

Target spring was utilized for drinking.

Construction site clearing was conducted by farmers.

4) Result of Final Evaluation Workshops

The final evaluation workshops were held with following schedule.

- Watershed level workshop: 25th October 2010 at Woiraye watershed, Engdadar Kebele
- Woreda level workshop: 26th and 27th October 2010 at Wogeda
- Regional level workshop: 19th and 20th December 2010 at Bahir Dar

Since the construction didn't start at that time, effectiveness, validity and sustainability of spring development activity were not evaluated at each workshop.

5) Result of Evaluation (by the Study Team)

According to the water quality examination conducted by the Study Team, quality of spring water was better than the open wells along the stream and the spring water quality satisfied most WHO guideline standards for drinking water. Particularly, contents of nitrite and nitrate are lower than the standard figures (detail results are presented in Appendix F-3). It is probable that fertilizer applied to farmlands in the upper stream flows into the open wells by runoff of rainwater, which caused low water quality.

Spring for construction
(Used for drinking)

Open well-1
It is located beside the stream at 400m downstream from the target spring
(Utilized for drinking)

Open well-2
It is located halfway up the slope at 900m downstream point from target spring (Utilized for drinking)

While the data provided by Simada Woreda Health Office showed a trend that the number of patients of diarrhea with blood (dysentery) increased after rainy months. It is suspected that excrement on the slope surface in the stream catchment was washed out and polluted water in the

open well during rainy season. Drinking this polluted water is considered to be the cause of diarrhea diseases.

In consideration of the results of water quality examination and data analysis of diarrhea diseases, spring development facility with concrete covered structure can prevent the spring water from pollution and help improvement of the health condition of farmers.

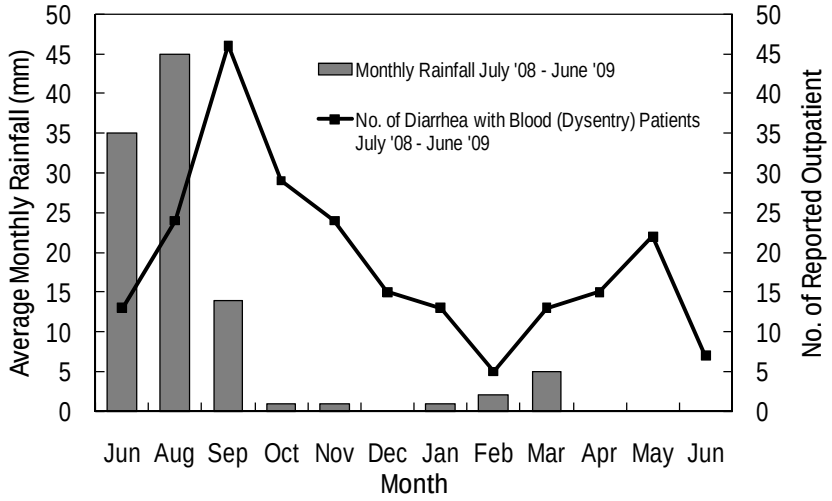


Figure 5.4.1 Monthly Number of Outpatients of Diarrhea with Blood and Rainfall in Simada Woreda

6) Probability of Extension to the Other Woredas

Among the farmers, there is a common image that spring water has better quality than the stream water and water in open well. The water quality examination shows that the image is correct. Hence, spring with concrete cover can keep water in good quality and farmers can collect safe water easier than uncovered case.

Spring development facility in Bugena Woreda

Since many springs are identified in Amhara Region, development works for springs can effectively contribute to improve domestic water supply condition. In addition, this type of facility can be seen all over the Amhara Region so it seems that contractors have enough experiences to construct. Furthermore this type of facility is easy to maintain. Therefore spring development facility has high probability for extension to the other Woredas.

(2) Roof Rainwater Harvesting Facilities (Bugena, Aregoba)

1) Bugena Woreda

(a) Project Selection

A lot of houses in Keyberet watershed have roofs with corrugated iron sheets but no households utilize rainwater from the roof. During the period of Woreda development plan formulation, October-December 2008 and January-March 2009, development approach of health status

improvement was the second priority by voting by Woreda officials, after agriculture production improvement approach. A member of the Study Team suggested installation of roof rainwater harvesting facility in several houses according to budget availability.

(b) Target Selection

The Study Team suggested idea of the facility to villagers, and they discussed and responded that they preferred to construct such kind of facilities at communal buildings such as a health center, a school and the FTC during midterm evaluation workshop on 9th March 2010. Since construction of health center was ongoing and FTC had another roof rainwater harvesting system, Burko Primary School was selected as a target for facility installation through discussion with experts of Woreda Water Resource Office.

(c) Activity Description

There were no references for roof rainwater harvesting facility in ANRS according to officers in FSCDPO so the design on the roof rainwater collection facility was done by the Study Team. Since facility installation was supposed to be done at the beginning of July: it was the beginning of rainy season, the facility should be constructed under a rainy condition. In consideration of this condition, water tanks made by fiber glass were selected among the alternatives examined. Following the selection of material, necessary cost was estimated.

On 13th July, water tanks were loaded on the trucks at the factory in Addis Ababa and on 16th July 2010, the water tanks were installed at Burko Primary School in Burko Kebele. The basement made by reinforced concrete should have been constructed at the same time: however, it was considered to be difficult to construct under a rainy condition. Then, the basement was made by small stones and soil for temporary basis. In the night of the day of installation, there was rain so DAs informed the Study Team that the rain water was harvested in the tanks.

Water tanks were loaded on the trucks in Addis Ababa.

Water tanks were installed at the side of school building of Burko Primary School.

At the end of October, 2 months after the last rainy day, the Study Team visited Burko Primary School to check the water storing situation. Unfortunately there were some cracks at the bottom of water tanks and almost all water was leaked out. In addition, some taps were broken and no maintenance works were done. According to the DAs, they noticed these situations and requested to the Woreda Water Resource Office to repair them. However Woreda Water Resource Office considered that Kebele Administration Office should repair, and then, they made discussions with

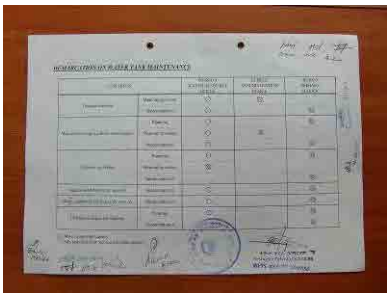
Kebele Administration Office. With that discussion, responsibility body for repairing could not be decided and cracks and broken taps were left behind.

Based on this information, the Study Team arranged a meeting on demarcation of water tank maintenance responsibility with administrative offices: Woreda Administration Office, Water Resource Office, Education Office, and Financial Office on 8th November 2010. By this meeting, the responsible agency for each issue concerning maintenance was confirmed and participants signed on the agreement.

The Study Team designed the permanent basement by reinforced concrete, and then, Woreda expert arranged the construction bidding at the end of November. At the same time, the Study Team provided repairing materials for Woreda Water Resource Office with a technical document for maintenance.

After bidding, construction started from mid December 2010.

Cracks were found at the bottom of water tanks.



Singed agreement on water tank maintenance.

Repairing materials were handed to Woreda Water Resource Office.

(d) Result of Final Evaluation Workshops

The results of final evaluation for roof rainwater harvesting facility during the evaluation workshops are shown in the table below.

Table 5.4.25 Results of Evaluation for Roof Rainwater Harvesting Facility (Bugena Woreda)

Level	Contents	Result of evaluation	Opinions from participants
Watershed	Effectiveness	Not so good	-Half of the part of the tank was filled by water during end September. -Birds entered in the tank and we don't know how to dispose them. -The upper tank has two damages i.e. on its surface and outer part. -The surface is being damaged because it doesn't have basement.
	Validity	Very good	
	Sustainability	Medium	
Woreda	Effectiveness	Not good	- Birds and other small animals i.e. insects entered in it. - Enough water couldn't be harvested. - The tanks shouldn't have been placed on a temporary basement. - Woreda Water Resource Office should be responsible.
	Validity	Very good	
	Sustainability	Very high	
Region	-	-	Q: Which agancy will provide chlorine ? A: Water Resource Office will provide according to the agreement

2) Aregoba Woreda

(a) Project Selection

Road condition from a junction of asphalt pavement trunk road (Harbu) to Aregoba Woreda center was improved in 2009 and that from Harbu to the model watershed was also renovated as

well. Infrastructure improvement of Aregoba Woreda was decided as the top priority of the Woreda development plan formulated in 2008-2009 during the workshops. Apart from infrastructure improvement, health status improvement was adopted as the third priority of development approach after agriculture production promotion approach. Among several numbers of strategies of the health status improvement approach, potable water supply development was the top priority probably because of insufficient precipitation in the area.

(b) Target Selection

Corrugated iron sheet roof is not popular in the Senbo watershed so installation of roof water harvesting facilities to individual houses is not considered as appropriate there. The Study Team discussed with villagers to install roof rainwater harvesting facilities at schools and it was basically agreed by them.

There are four schools in the Senbo watershed and among these schools Fetekoma Primary School at Fetekoma Kebele was selected as a target through the discussions with the Woreda Education Office experts. The road conditions to the other three schools were very bad and it was considered to be difficult to transport materials for facilities, and then, Fetekoma primary school was selected.

(c) Activity Description

In the same way as Bugena Woreda, water tanks made by fiber glass were selected for the facility and necessary cost was estimated.

On 9th July, water tanks were loaded on the trucks at the factory in Addis Ababa and were installed on 12th July 2010 at Fetekoma Primary School in Fetekoma Kebele. Temporary basement was constructed due to the same reason as Bugena Woreda. During the night of the day of installation, there was heavy rain. On the next day, the Study Team visited the Fetekoma Primary School and confirmed that the rain water was harvested in the water tanks satisfactorily.

Water tanks were transported from Addis Ababa.

Water tanks were installed at the back side of school building of Fetekoma primary school.

Water tanks harvested rainwater successfully.

At the beginning of October, 2 months after the last rainy day, the Study Team visited Fetekoma Primary School and checked the water storing situation. Unfortunately, the same as the Bugena Woreda case, there were some cracks at the bottom of water tanks and almost all water was leaked out. In addition, a few taps were also broken. According to the DAs, they tried to inform these situations to Woreda office: however they had no way to contact to Woreda Water Resource

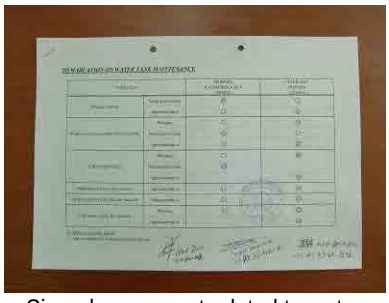
Office because mobile phone was not available in Fetekoma Kebele.

Based on this information, the Study Team arranged a meeting on demarcation of water tank maintenance responsibility with administrative offices: Woreda Administration Office, Water Resource Office, Education Office, and Financial Office on 27th October 2010. The responsible agency for each issue relating to maintenance was confirmed among them and participants signed on the agreement.

The Study Team designed the permanent basement by reinforced concrete, and then, Woreda expert arranged the construction bidding at the end of November 2010. At the same time, the Study Team provided repairing material for Fetekoma Primary School with a technical document for maintenance.

After bidding, Construction started from the end of January 2011.

Cracks occurred at the bottom of water tanks.



Singed agreement related to water tank maintenance.

Repairing materials were handed to Fetekoma primary school.

(d) Result of Final Evaluation Workshop

The results of final evaluation for roof rainwater harvesting facility during the evaluation workshops are shown in the table below.

Table 5.4.26 Results of Evaluation in Watershed Level Workshop (Aregoba Woreda)

Level	Contents	Result of evaluation	Opinions from participants
Watershed	Effectiveness	Good	- As planning levl, it was good. - The quality of the water tank should be improved by maintaining. - Budget shall be allocated for maintenance.
	Validity	Very Good	
	Sustainability	N/A	
Woreda	Effectiveness	very good (20votes) good (3votes)	- The basement was not made first and it leaked water. - The idea of establishing water tank was good for vegetable production and food preparation. - Over 800 students are in the school and it can serve a lot.
	Validity	Very good	
	Sustainability	Very high	
Region	-	-	Q: Since Aregoba is arid area and annual rain fall is low, spring development is considered to be more effective. Why didJALIMPS select water tank ? A: At the beginning of Study, farmers proposed spring development. But target spring is located about 5km from watershed and it was very difficult to constract 5km pipeline.

3) Result of Evaluation (by the Study Team)

From the results of watershed and Woreda level evaluation workshops, there are two problems on this activity, physical and maintenance problems.

The physical problem is cracks at the bottom of tanks: these cracks occurred due to the lack of strength of temporary basement for its weight of water tank filled with water. However the basement made by reinforced concrete is now under construction and the cracks will not occur again after construction. If there occur some cracks, experts of Woreda Water Resource office or primary school teachers have repairing materials and water leakage will be prevented.

Maintenance problem: The main problem was uncertainness of responsibilities for the maintenance. For this problem the Study Team arranged meeting at each Woreda and made clear the responsible demarcation for each matter related to water tank maintenance.

Regarding the quality of stored water, it was almost the same as springs and river which farmers usually utilize (detail results are present in Appendix F-3). Some bacteria are identified but with serving the chlorine, the number of bacteria will be reduced.

Therefore in the next rainy season, water tank will collect water satisfactorily and contribute for the improvement of water supplying condition in and around the school.

4) Probability of Extension to the Other Woredas

In ANRS, almost all areas have no experiences to use rainwater for drinking. They fetch drinking water from spring and river flow mainly. This task is mainly burdened by children and women. It takes long time and they have to fetch 3-4 times per day with 30litter jelly can (weight is 30kg). Sometime the water is dirty and polluted, and the poor health conditions of users are worried.

Through the water quality examination, it was proved that the quality of stored rainwater in the water tank is the same as spring water. Therefore by introducing the results of this roof water harvesting facility by a report, video movie, and study tour, it can interest Woreda officers to utilize rain water. Furthermore this facility will contribute not only for reducing the laborious work for fetching water but also to increase the production of agriculture through kitchen garden irrigation. Therefore roof water harvesting facility has high probability for extension.

A girl carries 30 litter jelly can with full water.
(Burko Kebele, Bugena Woreda)

A woman takes water from spring
(Fetekoma Kebele, Aregoba Woreda)

River flow utilized for drinking
(Aregoba Woreda)
*many algae were identified

When the water tank is installed, the following issues should be considered.

(a) Road condition approaching to the target areas

In Amhara Region, except for some trunk roads, roads are normally unpaved. In addition, there are some roads with bad conditions and with too narrow width to pass by cars. Sometimes water

harvesting facility size depends on road conditions: for example, if road condition is good enough, necessary materials for the facility can be easily transported and installed by using any size of trucks. But the poor road conditions will limit both car and material sizes.

(b) Communication

Communication is indispensable for maintenance works. If some problems happen, responsible person can inform the situation to responsible Office(s). However, if communication facilities or equipment are not available, quick maintenance and repair are difficult to conduct. In this case, it should be considered that repairing materials are handed over to users in advance.

5.4.7 Lessons Learned

Through the implementation of the livelihood improvement activities, the following lessons were learned.

- It was verified that many sector offices could take initiatives for planning and implementation of activities on their own responsibilities.
- In addition, many officers worked for the verification activities as a part of their own tasks. For the livelihood improvement activities, there were no discussions on allowance payment to Woreda officers. This is different from the experiences in Agricultural Promotion and Natural Resource Management components, in which DAs and Woreda experts requested to pay allowances in some Woredas. It may come from the fact that most activities are being implemented near the Woreda center, which means that the Woreda officers can access easily. (But in cases such as ewe keeping training in Gidan and vocational training in Kobo, the activity sites are far from the Woreda center and it was necessary to have a field visit to get information.)
- As the activities such as gender mainstreaming in Kobo and ewe keeping in Gidan demonstrated, it was possible to get good results with the relatively small budget amount. These activities imply that a huge amount of budget is not always necessary to improve livelihoods in rural areas. By adopting the suitable approaches/technologies and implementing the appropriate scale activities with a moderate budget, it is quite possible to have tangible and positive effects in livelihoods.
- Some offices contributed their own budget to promote the activities. For instance, WAO in Ebinate purchased cements for the improved heifer introduction for HIV/AIDS association support. This kind of self-help and voluntary action is useful to enhance ownership as well as sustainability.
- As the goat fattening training for jobless people in Aregoba indicated, good logistic and communication is very important for smooth implementation of activities. Because Aregoba was a newly established Woreda a few years ago, its infrastructure is still very poor; no telephone communication is available and road access is inconvenient. Under the circumstances, timely material procurement and its transportation are difficult, which in turn

hinders smooth implementation of following activities.

- Because of the allowance payment issue, the beneficiary group had to be replaced by another groups in the vocational training for brick production in Kobo. It is quite probable that the allowance to be paid to people could be a problem for the activity implementation in the future. To avoid the possible conflicts on allowance, it may need unified and/or standardized regulation in ANRS.
- It seems that there are still difficulties to implement activities in rural areas because of lack of transportation means. Under the situation that access to the rural areas won't be improved soon, it may be inevitable to start development interventions within accessible areas.
- If an off-farming income generation activity expects its customers within rural areas, it's a prerequisite that rural people have some purchasing powers. In other words, there should be people living in rural areas who have enough agricultural and/or livestock produce that is more than self-sufficiency and who earn incomes by selling the excess farm produce. Considering this point, existence of rural people who have enough and stable farm produce to earn cash incomes is one of the fundamental preconditions for successful off-farming income generation activities in the village.
- Transportation access to the rural villages is very bad in the Study Area except for the villages along the trunk roads. The bad transportation access brings many inconveniences and the followings are examples that hinder successful off-farming income generation activities.
  - ✧ The bad transportation access results in fewer touring and ordinary vehicles visiting the villages.
  - ✧ This causes fewer flows of people/goods/information coming and going to the villages.
  - ✧ Fewer flows of visitors mean fewer potential customers.
  - ✧ Fewer flows of goods mean that necessary materials for the activities often do not come on time.
  - ✧ Less flow of information means that necessary information on marketing and products often does not come on time.
  - ✧ Due to the difficulty of transportation of goods and people, it is not easy to sell the products out of the village even if people want to do so.
- In addition to the bad transportation access, low level of telecommunication facilities (ground line and cellular phone networks) also hinders successful off-farming income generation activities as follows.
  - ✧ Face to face dealing is the only available mode of business.
  - ✧ On time notices for purchasing orders of materials and/or delivery of goods are impossible to give business partners.

- When the Study started, it was supposed that farmers took water from stream for drinking. Therefore, the water quality and the health condition of farmers at the downstream become worse and worse because of pollution increase. However, results of field survey showed that no one used water of stream for drinking. Farmers wash clothes in the stream and this is why they do not use stream water for drinking. Then, water stored inside of open wells was considered as the causes of diarrhea diseases. Without covering well surface, pollution can affect inside and phytoplankton increased much with direct sunshine. Furthermore accessibility for livestock was considered as the cause of further pollution.

Livestock can access circled well easily.
(Open well-1)

- In the target 8 Woredas, farmers usually use rainwater for irrigation. They made ponds by digging ground and covered it with a water-proof geo-membrane. However these ponds have no covers, dust can enter inside easily and phytoplankton increase under direct sunshine. Due to this situation, the water quality of the ponds is not suitable for drinking. During the time of explanation on rainwater harvesting facility to the Woreda officials and teachers of primary schools, they mentioned that they would not use water stored in the water tank for drinking without chemical treatment or boiling. They had a preconception that the quality of running water is clean but quality of stored water is dirty. The low quality water in the ponds mentioned above is considered to make them have this bias. However, after rain water was harvested in the water tanks, teachers and villagers observed the water stored inside and they surprisingly told that they have never had such clean stored water until seeing the fact. In addition, results of water quality examination made them change the perception of stored water. After that, teachers said that this time they recognized that quality of rainwater stored in the water tank is the same or better than the spring water.

Pond for irrigation in Bugena Woreda

5.5 Good Practices Introduction

Scope of the Works for this Study between JICA and ANRS did not include the good practices introduction. The idea came out in July 2008 after the steering committee meeting for the explanation of the Progress Report (1). After series of discussions among concerned officials and villagers, it was

found that there were no specific projects which were recognized as good practices by Woredas. Then, during the planning workshops for Woreda development plans held in October and November 2008, ideas on good practices were suggested and enumerated as a long list.

5.5.1 Planning of the Activities

Candidates of activities in the long list were screened through the discussions among DAs, Woreda experts, and the Study Team: the candidates should be able to commence from January 2009. The screened candidates were summarized in a short list based on the following view points;

- Expected implementation period was in dry season so activities which needed rainfall were not suitable. Activities; such as agriculture, apiculture, and forestation, were considered to be verification projects which would start from April 2009.
- Good practices should not be technically complicated because of the limited preparation period and budget.
- Each Woreda office should consider some kinds of cost sharing with the Study Team by utilizing budget of safety net program and others if implementation budget was not enough.

The short-listed activities; selected with Woreda and Kebele staff, focal person, and experts of the Study Team, were presented at the end of the workshop by the Study Team during period from December 2008 to January 2009. Some Woredas proposed four (4) activities: however, only one or two activities were implemented due to budget shortage of Woreda and some other reasons. Finally, the following activities were implemented.

Table 5.5.1 Implemented Good Practices and their Objectives

Components	Woredas	Objectives
Fuel-saving Stove Extension	Ebinate Simada Bugena Gidan Kobo Aregoba Legambo Mekedela	· To minimize cooking fuel consumption, especially for firewood. · To reduce expenditure for fuel cost, or time for fuel collection. · To reduce health problem by smoke mainly for eyes, nose, and throat · To reduce cooking time and the stove can be kept in hot condition for long time. · To protect from hair and skin burn caused by flame · To encourage income generating activities through selling stove products. · To contribute stopping forest deterioration through reducing forest tree cutting in the watershed area.
Basic Meteorological Survey	Ditto	· To strengthen basic scientific observation skill of DAs on rainfall, temperature, and humidity. · To strengthen DAs' understanding on area meteorological condition · To help for selection of suitable crops in the area around FTC
Vegetable Farming in Irrigable Area in Dry Season	Legambo	· To decrease food shortage period in annum through introducing new crops to the area · To increase agricultural production in the food insecure area. · To encourage income generating activities through selling cash crops. · To improve rural dietary life by introducing different variety of vegetables. · To research crop adaptive ability of vegetables

All Woredas had run out the budget for good practices within 2009, however, some activities have been continuing with repetition of interruption and resumption.

5.5.2 Fuel-saving Stove Extension

Fuel-saving stove can reduce amount of fuel about 50 – 60 % comparing with three-stone open type stove. It is not popular in ANRS even in urban area so majority of cooking stove in ANRS is three-stone open type stove. It is reported that wood demand for fuel shares about 95% of total wood

demand in ANRS[25], however, the most of villagers in the study area can not use wood for cooking because it is quite difficult to collect wood in and around a village due to heavy deforestation. They have to use cow dung in stead of fuel wood nowadays.

(1) Summary of the Activity

1) Objectives: The activity aims to reduce fuel consumption in the area.

2) Implementer: People living in the watersheds, DAs and Woreda experts

3) Beneficiaries: People living in the watersheds

4) Activity Description

In southern part of Ethiopia, closed type cooking stove was invented and named "Gonze". It is earthenware and materials for production are very simple and easily available in rural area: clay, water, and fire wood for burning. The activity encourages village peoples to change their cooking stoves from open type; three-stone stove to closed type; Gonze and/or other stoves in order to reduce fuel consumption. Molds for Gonze production were provided to each watershed from Study team.

5) Period: January 2009 – December 2010

(2) Results of the Activity

Gonze and other closed type cooking stoves were manufactured and used in the target watersheds. The number of stoves being used by villagers is shown in the following table.

Table 5.5.2 Result of Achievement of Fuel-saving Stove Extension

Woreda	Kebele	20 40 60 80 100	Rate	Achievement	Targeted HH
Bugena	Keyberet		92.0%	115	125
Gidan	Tenjo		25.2%	114	452
Kobo	Amid		100.0%	201	201
Ebinate	Michena		98.3%	116	118
Simada	Woiraye		84.3%	140	166
Aregoba	Senbo		72.7%	178	245
Legambo	Assayo		N/A	N/A	225
Mekedela	Tebi		51.4%	348	677

Bugena, Ebinate, and Simada Woreda are very close to 100% of fuel-saving stove extension. DAs of these Woredas said that they have confidence to achieve 100% extension near future. Other Woredas also have good progress on extension because extension packages are under implementation by some Woreda agriculture offices.

[25] Source: ANRS Forestry Action Program (1999), ANRS, Bureau of Agriculture

Gonze is produced and used in Keyberet watershed, Bugena Woreda

Cooking demonstration on stove efficiency comparison is done in Amid watershed, Kobo Woreda

(3) Evaluation of the Activities

It is notable that awareness of local people on the fuel-saving stove has increased during 2 years since the activity was commenced. In the final evaluation workshops held in October and November 2010 there was no complain about smoke from the fuel-saving stove: it is contrast that there were many complains from the local people about smoke from the fuel-saving stove during workshops of the mid term evaluation held in February and March 2010. Two reasons are considered for this change: one is that local people could adjust fuel amount for cooking through their daily trials, the other is some users stopped use of fuel-saving stove. The latter case seemed not so much according to information form DAs and Woreda Experts. Result of final evaluation is summarized in the following table.

Table 5.5.3 Results of Final Evaluation on Fuel-saving Stove Extension

Items	Level	Ebinate	Simada	Bugena	Gidan	Kobo	Mekedela	Legambo	Aregoba
Effectiveness	Watershed	good	good	very good	good	very good	very good	not good	good / very good
	Woreda	very good	very good	very good	good	very good	very good	very good	good
	Zone	very good		very good			very good		
Validity	Watershed	very good	very good	very good	very good	very good	very good	very good	very good
	Woreda	good	very good	very good	very good	very good	very good	very good	very good
	Zone	very good		very good			very good		
Sustainability	Watershed	very high	very high	very high	very high	very high	very high	high	very high
	Woreda	high	very high	very high	high	high / very high	very high	very high	very high
	Zone	very high		very high			very high		

Awareness on fuel-saving stove is increasing in the targeted watershed but it is only for “injera” cooking. “injera” cooking usually has some intervals between every day and 3 days. This cooking interval is mainly due to hotness of area and condition of food preservation.

Table 5.5.4 Fuel Type and Cooking Interval for Injera Baking

Woreda	Kebele	Wood (%)	Cow Dung (%)	Others (%)	Total (%)	Avg of cooking interval (day)	No. of injera sheet by a cooking
Aregoba	Senbo	90.0	10.0	0.0	100.0	1.6	10.8
Mekedela	Tebi	67.7	25.7	6.6	100.0	2.2	13.9
Bugena	Keyberet	57.0	43.0	0.0	100.0	2.1	31.7
Kobo	Amid	33.7	40.2	26.1	100.0	3.0	27.8
Simada	Woiraye	28.5	71.5	0.0	100.0	N/A	36.1

On the other hand, drinks and supplementary foods are cooked every day which its fuel consumption is about one-third of total household fuel consumption. Open type: three-stone stove is usually used for this purpose. All households in Tebi Kebele of Mekedela Woreda use closed type fuel-saving stove for drinks and supplementary foods cooking. Thus, extension potential is high and the Study team considers that these activities shall continue and extend to other areas.

5.5.3 Basic Meteorological Survey

There were no meteorological data in each watershed but information requirement for suitable crop and vegetable in the watershed was very high from DAs: it was confirmed at the beginning of the Study. In order to grasp basic meteorological condition in the watershed, the Study team provided rain gauge and thermometer to FTCs; and then, lectured how to measure and record rainfall, temperature and humidity.

(1) Summary of the Activity

1) Objectives: The activity aims to obtain basic meteorological information.

2) Implementer: DAs

3) Beneficiaries

Direct; DAs, Woreda experts, Regional project program officers, and researchers, Indirect; farmers

4) Activity Description

Rain gauges, thermometers, and hygrometers were delivered to FTCs. Meteorological information requires daily record of measurement and it needs at least 10 years data to examine average value. All DAs did not know how to measure rain fall and how to read a thermometer and measuring cylinder because there was no practical training program in school. Then, the Study team explained and demonstrated how to do them in January 2009. The recorded data were summarized by the Study team.

5) Period: January 2009 – December 2010

(2) Results of the Activity

Continuous data are obtained from some FTCs. However, there are places without data due to frequent turn-over and transfer/change of DAs. Processed result of the survey is summarized in the following tables. Data were summarized in monthly basis. The month having data less than half is described N/A in the tables. Measurement was not carried out in Kobo and Gidan Woredas in 2009 but it was improved in 2010. On the other hand, no measurement was done in Aregoba Woreda in 2010.

It requires more than 10 years data for preparing average figures of meteorological measurement but some important information is obtained through this activity. Heavy rain in 2010 rainy season is reported from some areas. Gidan has heavy rain in the end of July 2010; 30th July had 143mm of rainfall and 191mm was on 31st July so there was heavy rainfall of 330mm within two days. Due to this heavy rainfall, disaster was reported in final evaluation workshop and some local people were affected.

Table 5.5.5 Meteorological Data (2009) obtained from FTC of the 8 Woredas

Woreda	Month (2009)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total/Avg
Bugena	Rainfall	N/A	N/A	N/A	N/A	N/A	87.6	231.6	101.2	N/A	N/A	N/A	N/A	420.4
	Temperature	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	Humidity	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Gidan	Rainfall	N/A	25.5	105.7	39.1	0.0	16.3	403.9	244.9	107.2	102.2	35.0	19.0	1,098.8
	Temperature	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	Humidity	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Kobo	Rainfall	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	Temperature	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	Humidity	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Ebinate	Rainfall	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	Temperature	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	Humidity	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Simada	Rainfall	N/A	0.0	0.0	0.0	0.0	93.8	174.8	113.5	N/A	0.0	0.0	0.0	382.1
	Temperature	N/A	20.1	20.5	22.3	21.2	20.0	17.0	N/A	N/A	28.8	29	30.5	23.3
	Humidity	N/A	39.4	42.1	38.3	53.9	68.8	85.4	N/A	N/A	66.7	63.1	60.0	57.5
Aregoba	Rainfall	N/A	0.0	1.1	19.6	2.6	10.4	130.9	282.0	28.1	N/A	N/A	N/A	474.7
	Temperature	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	Humidity	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Legambo	Rainfall	0.0	0.0	53.8	62.2	0.0	N/A	387.7	244.3	11.0	7.7	0.0	59.5	826.2
	Temperature	13.3	13.5	13.5	15.4	15.3	N/A	15.4	14.7	14.1	13.8	14	12.2	14.1
	Humidity	48.7	50	45.3	48.7	48.1	N/A	53.7	56.8	57.3	59.8	27.8	54.4	50.1
Mekedela	Rainfall	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	Temperature	N/A	20.1	25.6	26.1	30.6	22.6	18.4	20.0	20.4	19.8	20.5	20.9	22.3
	Humidity	N/A	38.1	N/A	N/A	N/A	36.1	64.8	61.6	53.4	39.4	16.0	39.7	43.6

Table 5.5.6 Meteorological Data (2010) obtained from FTC of the 8 Woredas

Woreda	Month (2010)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total/Avg
Bugena	Rainfall	0.0	N/A	N/A	N/A	N/A	N/A	249.4	184.2	66.2	N/A	N/A	N/A	499.8
	Temperature	30.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	Humidity	30.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Gidan	Rainfall	1.6	0.0	25.2	131.4	83.7	0.0	706.5	191.2	N/A	N/A	N/A	N/A	1,139.6
	Temperature	12.9	14.5	10.5	14.2	21.7	14.5	N/A	N/A	N/A	N/A	N/A	N/A	14.7
	Humidity	55.0	45.5	56.6	52.3	47.7	61.2	N/A	N/A	N/A	N/A	N/A	N/A	53.1
Kobo	Rainfall	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	Temperature	N/A	N/A	17.1	21.6	24.1	25.4	23.9	23.1	22.1	N/A	N/A	N/A	22.5
	Humidity	N/A	N/A	64.7	58.5	49.7	32.0	46.3	57.9	54.7	N/A	N/A	N/A	52.0
Ebinate	Rainfall	N/A	N/A	7.7	45.5	60.6	98.5	559.3	493.4	99.8	19.8	N/A	N/A	1,384.6
	Temperature	N/A	N/A	25.6	26.4	24.3	22.6	19.5	19.1	19.8	24.0	N/A	N/A	22.7
	Humidity	N/A	N/A	32.5	33.8	42.2	63.3	71.7	73.2	64.1	57.4	N/A	N/A	54.8
Simada	Rainfall	4.2	0.0	N/A	95.3	37.8	53.5	358.8	240.8	125.7	4.5	N/A	N/A	920.6
	Temperature	33.8	N/A	N/A	23.2	22.6	22.1	19.6	20.0	23.0	20.0	N/A	N/A	23.0
	Humidity	56.7	N/A	N/A	53.6	52.3	49.4	62.1	61.6	65.0	55.0	N/A	N/A	57.0
Aregoba	Rainfall	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	Temperature	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	Humidity	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Legambo	Rainfall	23.3	17.7	49.4	205.2	79.5	0.0	173.7	132.8	1.6	0.0	6.5	N/A	689.7
	Temperature	12.9	13.8	17.3	15.5	13.2	15.5	20.5	17.6	16.4	14.1	12.8	N/A	15.4
	Humidity	55.5	54.2	53.3	55.2	54.5	58.3	60.3	69.8	60.8	58.6	55	N/A	57.8
Mekedela	Rainfall	N/A	0.0	0.0	22.8	0.0	0.0	331.1	640.2	106.6	5.9	N/A	N/A	1,106.6
	Temperature	21.3	19.8	22.5	21.8	29.1	22.8	21.1	20.5	23.7	23.5	N/A	N/A	22.6
	Humidity	52.7	37.0	19.7	33.4	N/A	33.8	61.3	88.1	72.1	61.7	N/A	N/A	51.1

Mekedela has 46 days continuous rainfall from the later July to early September 2010 with 20mm more or less a day. This continuous rainfall brought crops good production in general. It was not erratic condition like Gidan case. It was nearly the same condition in Ebinate in 2010. One year average temperature can be also comparable between Woredas: Gidan and Legambo were cooler than Ebinate and Mekedela. Everybody in Amhara Region knows this kind of information by feeling but this activity could make it clear by figures.

Rain gauge installation in FTC compound in Gidan Woreda

A DA measures rain fall amount by using measuring cylinder in FTC, Bugena Woreda

(3) Evaluation of the Activities

Frequent change of DAs resulted interruption of measurement and there was no technical transfer before and after change of DAs. Even though data shortage, data measured last two years can help DAs and Woreda expert to understand the area, and to select suitable crops and animals for the area. In the evaluation workshop, evaluation on this activity was not done: however, there is no basic meteorological information in the area except measurement by good practice so the Study Team recommends to ANRS to continue this activity and extend to other areas.

5.5.4 Vegetable Farming in Irrigable Area

Some cash crops were selected to plant in irrigable area in Assoye watershed of Legambo in late 2008, and seeds were delivered in early 2009.

(1) Summary of the Activity

1) Objectives

The activity aims to plant cash crops in the irrigable area for income generation and self-consumption.

2) Implementer: Selected farmers in Assoye watershed, DAs, Woreda experts

3) Beneficiaries: Selected farmers in Assoye watershed

4) Activity Description

Potato can produce much carbohydrate and have about 4-5 times yield by weight of wheat. Assoye watershed locates hilly and cool place and potato is one of suitable crops in the area: potato is considered to be able to mitigate food insecure condition by its product. Garlic is one of exportable cash crop in ANRS: garlic from Mekedela is exported to Sudan through western border of Ethiopia so demand of it is always high. Farmers, DAs, and Woreda experts in Legambo know this information but there is no certified seed in the area. Thus, the Study team purchased quality seeds from the markets around Bahir Dar, Mekedela, and others and provided to Woreda agriculture office early 2009. Then, participants were selected in the irrigable area, and seeds were distributed to them.

5) Period

January 2009 – (end is not sure because the activity is merged into agriculture promotion activities)

(2) Results of the Activity

The numbers of the beneficiaries of this activity is total 58 farmers: some farmers obtained two or more varieties of vegetable seeds. Number of Participants and distributed seed quantity are summarized as follows.

Table 5.5.7 Summary of Number of Participants and Distributed Seed Quantity

No.	Variety of Vegetable	Unit	Distributed quantity	Participants		
				M	F	Total
1	Garlic	kg	621	41	2	43
2	Onion	gm	5	7	3	20
3	Potato	kg	778	34	3	37
4	Cabbage	gm	4,625	29	3	31

Production of vegetables was reported in good condition from DAs. It was also reported that one of farmers obtained good harvest of potato, sold it and purchased lentil seed. And then, the farmer sold lentil and obtained good profit and purchased two heads of oxen by 950 birr. Even though water shortage was reported, performance and harvest can be evaluated well in general.

(3) Evaluation of the Activity

This activity is carried out in the irrigable area so result is expected as promising. One farmer obtained good income and could purchase two heads of oxen through this activity. This activity proves that crop production in irrigable area is promising but it also proves that quality seeds are insufficient in rural area and farmers can not purchase it even though they have willingness and irrigable farm land. The Study team considers that this activity is good: however, recommendation is different from this activity; it is recommended to enhance quality seed production and to establish effective seed delivery system in ANRS.

One of beneficiaries of the activity and her farm land with potato plantation, Legambo

A family of beneficiaries of the activity and their harvested potato, Legambo

5.5.5 Lessons Learned

During the first half of fuel-saving stove extension activity, the Study team emphasized on extension of stove itself: however, some claims came out from beneficiaries about smoke from stove. After visit

to beneficiary's house, it was found that burning procedure and method were not properly done. Then, necessity of trainer for fuel burning was raised up. It was asked beneficiaries: whether a farmer can train other farmers or not, and whether there is a good user of fuel-saving stove or not. The answer was quite simple and the same in several watersheds "No".

According to them, farmers or people in a watershed are the same level and equal. There will not be a trainer in the watershed. Someone said that she does not want to participate to training if a neighbor is a trainer. They think that a trainer should be educated but it is usually quite difficult to find like that person in a watershed. They can accept DAs, Woreda experts, and Regional experts. In addition, highly educated person is favorable for them according to interview to them. It is common in Ethiopia that educated persons will not cook themselves so their skill of cooking practice is expected not so good.

Farmer to farmer or villager to villager is appropriate procedure for extension works but it is difficult to apply in ANRS at this moment. Consequently, some government staff should be trained for use of fuel-saving stove, and then, other activities are also taken into account aforementioned facts.

5.6 Participatory Final Evaluation

5.6.1 Methodology

The final participatory evaluation workshops of the verification projects on the ground started at Silasiemesk Watershed, Ebinate Woreda, South Gondar Zone on 20 October 2010 and completed at Aregoba Woreda, South Wollo Zone on 26 and 27 November. Then the region-level final evaluation workshop was held on 19-20 December with 90 participants. The number of participants at nine watershed level workshops totaled 448, and that at eight Woreda level workshops totaled 251.

Table 5.6.1 Participants of Watershed Level Final Participatory Evaluation Workshops

	South Gondar Zone		North Wollo Zone			South Wollo Zone				
	Ebinate Woreda	Simada Woreda	Bugena Woreda	Gidan Woreda	Kobo Woreda	Mekedela Woreda	Legambo Woreda	Aregoba Woreda		
	Silasiemesk Watershed	Woiraye Watershed	Keberet Watershd	Tejno Watershed	Amid Watershed	Tebi Watershed	Assoye Watershed	Lower Senbo Watershed	Upper Asenbo Watershed	Total
Total Participants	**64**	**52**	**55**	**73**	**26**	**33**	**46**	**22**	**77**	**448**
Female Participants	13	10	44	21	0	3	19	8	15	133
Male Participants	51	42	11	52	26	30	27	14	62	315
Development Agents	2	1	1	2	2	4	3	1	2	18
Woreda Experts	0	2	0	1	1	0	0	0	0	4
Zonal Officers	1	1	1	1	1	1	1	1	1	9
Regional Officers	2	2	2	2	2	2	2	2	2	18

The main objective of the final participatory evaluation is not classical output-oriented evaluation which is done only by the experts and sometimes by the outsiders who are called the third party, but learning-oriented evaluation by all the stakeholders involved in the verification project.

In the final participatory evaluation workshops, the participants were asked to describe the activities of the verification project implemented and the issues arose. Then they were asked to evaluate the achievement of the verification activity in terms of (1) Effectiveness and why. After discussion, they were asked to evaluate also (2) Validity and (3) Sustainability of the verification activity.

Table 5.6.2 Participants of Woreda Level Final Participatory Evaluation Workshops

	South Gondar Zone		North Wollo Zone			South Wollo Zone			Sub-total by Office
	Ebinate Woreda	Simada Woreda	Bugena Woreda	Gidan Woreda	Kobo Woreda	Mekedela Woreda	Legambo Woreda	Aregoba Woreda	
Regional DPFSPCO	1	1	1	1	1	1	1	1	8
Regional BOARD	1	1	1	1	1	1	1	1	8
Zonal DPFSPCO	1	1	1	1	1	1	1	1	8
Woreda Agriculture and Rural Development Office	21	19	16	15	13	17	14	14	129
Woreda DPFSPCO	1	1	0	0	1	2	1	1	7
Woreda Administration	2	1	2	2	1	1	1	0	10
Woreda Finance and Economic Development Office	2	2	0	2	1	1	1	2	11
Woreda Women Affiars Office	0	0	2	2	2	2	2	2	12
Woreda Small & Micro Enterprises	0	2	2	2	2	1	1	2	12
Woreda Education Office	1	0	1	2	2	2	0	3	11
Woreda Environment & Land Administration Office	1	1	2	3	2	0	0	1	10
Woreda Water Resource Office	1	2	2	2	0	0	0	2	9
Woreda Communication Affiars Office	1	1	1	1	1	1	1	2	9
Woreda Health Office	1	0	0	2	0	2	1	0	6
Woreda HIV/Aids Prevention and Control Office (HAPCO)	0	0	0	1	0	0	0	0	1
Woreda Sub-total	34	32	31	37	28	32	25	32	251

(1) Effectiveness means how much expected results they have achieved. Since the indicators for the output or outcome were not pre-set quantitatively, the participants were asked to evaluate qualitatively by four levels: Very Good-4, Good-3, Not So Good-2 and Not Good-1.

(2) Validity means whether the verification activity is still valid or not. It was a priority at the designing stage but is it still a priority? Government policies might have changed, the environment might have changed, and also their appraisal might have changed through the implementation of the verification activity. An actual question used to explain validity was “Suppose you did not meet your spouse and you did not get married yet. Will you marry the same person if you meet the person today?” It was also by four levels: Very Good-4, Good-3, Not So Good-2, and Not Good-1.

(3) Sustainability means that the verification activity can be disseminated in the community and neighboring communities. The question for the farmers was “Will you recommend the same verification activity to your brothers and sisters, relatives, and neighbors? The question for the development agents/officers was “Will you extend the same verification activity to other watersheds and Kebeles?” It was also evaluated by four levels: Very High-4, High-3, Medium-2, and Low-1.

5.6.2 Ebinate Woreda, South Gondar Zone

(1) Final Participatory Evaluation at Silasiemesk Watershed

Final participatory evaluation at Silasiemesk Watershed, Ebinate Woreda, was held under a big tree shed in the field, from 10:15AM to 0:15PM on 20 October (Wed) 2010. The participants were 64

(Female: 13, Male: 51) including 2 Development Agents (Female: 1, Male: 1), 2 Regional Officers and 1 Woreda Expert. (Male: 3).

Effectiveness of the Beekeeping (Modern beehive package) and Sheep Breed Improvement activities were evaluated Not So Good. Farmers said provision of the beehive package was not timely, wax was not enough and the price of the beehive package was too high. For sheep breed, they said it was a highland breed and not suitable for the watershed. Sustainability of beekeeping was evaluated Not So High because of the price, but that of sheep breed was Very High. Improved Stove and Seed Planting (Teff and barley) also got Very Good and Very High in validity and sustainability.

Table 5.6.3 Final Participatory Evaluation at Silasiemesk Watershed, Ebinate Woreda

Sub-component	Participants	Expected outputs	Midterm-evaluation	Why?	Effectiveness	Why?	How can we improve?	For future	In general	Validity	Sustainability
Improved Stove	Total: 22 Present: 20 (F:4, M:16)	Time, health, human power, and fuel woods saved.	Good result.	It saves wood and reduces smoke.	Good		It does not serve long. Let it be cement.		The project should be for the kebele in general, not only for one watershed. (Projects may cover the whole kebele. (DA) / Beneficiaries are limited. / Turnover of DAs are too much. We don't know much about JALIMPS activities because we are new. (DA) / Poultry production is also good for the area. / The project activities are yours. (Zone) We need poultry./ We need seeds for horticulture.	Very Good	Very High
Beekeeping (Modern Beehive Package)	Total: 6 Present: 2 (F:0, M:2)	To earn money and home consumption.	Good result.	Modern beehive protects pest/ant.	Not So Good	It was not provided timely. Wax was not enough. The price of bee hives were high.	More training on beekeeping.	Beekeeping is more productive if there is change on productivity.		Good (The honey produced is of better quality.)	Not So High (Price of bee hive is high)
Sheep Breed Improvement	Total: 10 (F:3, M:7) Present: 4	Fast growth and additional income.	Sheep got thinner and thinner, then died.	Highland variety is not good for this area.	Not So Good	They are highland sheep.	Lowland breed is required.	Sheep breeding is not good ecologically. / This area is convenient for sheep rearing. (DA)		Very Good	Very High
Gully Control	Total: 30 Present: 24 (F:4, M:20)	Livestock feed and saving soil.	In good condition.	Due to plantation of different trees. Conservation of water and soil.	Very Good	Check dam and gabion constructed.	Plant more seedlings.			Very Good	High
Fruits Trees (Fruit Production Campaign)	Total unknown Present: 22 (F:3, M:19)	Supportive food.	Only flowering without having seeds.	No training for the new fruit trees. (Mango)	Good		Training is necessary.	Nursery for fruits trees is necessary.		Good (Moisture shortage; low water availability.)	Very High
Tree Plating (Hillside Forage Development)	Total: 30 Present: 24 (F:12, M:12)	To preserve soil fertility.	It is good and should continue.	Prevent flooding. Rehabilitate the land/area.	Good		Plants should be supplied on time.	Seed supply is good.		Good (Guards should be given salary)	High
Horticulture	Total: 13 (F:13, M:0) Present: 7	Income source by selling.	Not much effective.	Water shortage.	Very Good	There was enough rain during plantation time. It was planted on the right time.	Motor pump is required.			Good (Not much irrigable land)	High
Seed Planting (Teff, Barley)		More production.	Teff is good. Barley is not good.	Weeding in time for teff. Water logged area for barley.	Very Good	Row planting was used. Fertilizer applied. Follow up done by DAs.	Timely sowing.	Add maize and wheat.		Very Good	Very High
Inset Processing and Production Training		We use it as additional food item. (for kita-local bread, porridge and kocho.)	N/A		Good	It is a new idea. It is additional food item other than Enjera.	We should expand to other farmers and kebeles.	We got training for 5 days.		Good	High

All the tables in this section are attached in Appendix F-5 without reducing the size.

2) Final Participatory Evaluation at Ebinate Woreda

Final participatory evaluation at Ebinate Woreda was held at Ebinate Woreda Administration Hall from 9AM to 5PM on 21 October (Thu) and 10AM to 3PM on 22 October (Fri) 2010. The participants were 35 (Female: 2, Male: 33) including 2 Regional and 1 Zonal Officers (Male: 3).

Overall evaluation was pretty good, and Sheep Breed Improvement and Horticulture got Very Good and Very High in validity and sustainability. The evaluation of Improved Fuel Saving Stove was rather lower than that of watershed and was Good in validity and High in Sustainability.

Table 5.6.4 Final Participatory Evaluation at Ebinate Woreda

Sub-component	Major activities	Expected outputs	Midterm-evaluation	Why?	Effectiveness	Why?	How can we improve?	Other issues / For future	Validity	Sustainability
Improved Fuel Saving Stove	Four experts (supervisor, woreda expert and 2 DAs) trained in Bahir Dar and they give training for farmers at household level.	Increases forest coverage.	It's a good start and effective.	Mother's health condition improved and the stove saves time, energy, and fuel wood.	Good	Farmers started constructing by themselves. (105 farmers out of 119HHs./ They shifted the need from the cemented ones to the mud.	Close follow up of DAs and awareness creation works.	Scaling up	Very Good: 2 Good: 17 Not So Good: 2	High
Beehive Development	Farmers organized in groups and 10 kg. wax given by WAO. / 10 colonies, modern bee hives purchased and distributed to 10 farmers by WAO.	Increases income.	It's very good.	Farmers can sell it for a good price. / It has better quality.	Good	Necessary materials for bee keeping not fulfilled./ There was shortage of wax./ No proper follow up and care by JALIMPS, woreda, DAs and farmers.	Close follow up of DAs and awareness creation works.	Farmers' awareness regarding bee keeping is low compared to other activities. (IGA) / There should be flower development for the bees. (Zone)	Very Good	Very High: 8 High: 14
Sheep Breed Improvement	20 farmers trained by WAO. / 20 rams bought from Adet and distributed.	Farmers get improved breeds. / Income increases.	8/20 died, the rest are in good condition (It's not so good).	Not enough follow up of DAs and less awareness creation works and training. / Lack of consistency in taking care of rams by farmers.	Very Good	More than half of them survived./ The sheep could give 76 cross breeds so far.	Close follow up of DAs and awareness creation works.	Over fat was just one of the causes for death.	Very Good	Very High
Gully Control	Check dam constructed and tree seedling planted. / There was discussion among farmers.	Soil fertility improved. / Ground water level increases. / Agro ecological conditions improve.	It's very effective.	It was 6-10 m wide, now it decreases by half. / It's becoming a habitat for wild animals such as impala.	Very Good		Strengthening nursery. / Conducting biological treatment. / area closure.	Doing other activities of check dam - using sack, same, stone, gabion. / Experience sharing.	Very Good	High
Fruits Trees (Fruit Production Campaign)	30 farmers received 279 fruit seedlings from ORDA and WAO. / 5 CRGs organized (each has 5 members).	Production and productivity improve. / Cash income and home consumption increase.	201/279 survived (72%). It's in a good condition (effective).	Farmers are interested in planting fruits. / It's compatible with the agro ecology.	Good		Close follow up of DAs and awareness creation works.	Grafted fruit varieties is better than the local one.	Good	Very High
Tree Plating (Hillside Forage Development)	Cut-off drain constructed and 30,200 seedlings planted. / 25 check dams constructed.	Soil fertility and biomass developed. / Ground water level increases and agro ecological status improves.	It's very good.	Better awareness by farmers. / Area enclosed by farmers.	Very Good		Providing maintenance service and planting annual forage plants egg. Alfalfa, cow pea and lablab. / Fulfilling the necessary equipments like hammer, hoe & spade.		Very Good	High
Horticulture	10 women organized in groups and they planted lettuce, salad, tomato, onion, green pepper. / Pedal pump provided by WAO.	Cash income and home consumption increase. / Production and productivity in small plot of land improves.	It's very good.	It fills their food gap. / Women's group sell at a good price.	Very Good		Women's group mainly expect inputs from WAO and FTC. Therefore awareness creation should be done to do activities by themselves.		Very Good	Very High
Seed Planting (teff and barley)	4 CRGs organized (4 members each). / Teff and barley planted by farmers for demonstration.	Production increases. / Enough bi-product.	Barley not good. Teff very good.	The seeds of barley didn't come on time, the land was not fertile. The variety of teff was conducive for the environment. / There was close follow up by DAs and farmers. / It was planted on the right time.	Very Good Very Good	Seed delivery was on time.	Integrated work among the stakeholders (DAs, ORDAs,JALIMPS and farmers. / We should work hard more.		Very Good	High
Inset Processing and Production training	Training given for five farmers and two DAs for five days on Inset processing./ 109 seedlings distributed.	Farmers get additional food item./ Farmers use Enset for bread and mix with other food./ It fills food gap.	N/A		Very Good	We got good result with this short training.	We should expand this good practice to other kebeles./ Doing market assessment./ Doing capacity building for experts, DAs and farmers.		Good	Very High
Improved Heifer Introduction	5 hybrid heifers purchased./ Forage planted./ Shed constructed./ Orientation and awareness creation activities done.	Introducing farmers the skill of milk production./ Quality production and productivity./ Income source to association./ Starting milk supply to the town./ To compare local breeds and hybrids in terms of productivity.	N/A		Good	Not profitable within short period of time./ The start is good./ There is a skill gap to manage.	Hybrids should be selected from certified company and we should know breed potential./ Collaborating with other programs in forage, health and NGOs./ Using of bull(hybriding) 100%./ Fulfilling of water, feeder and filling gaps.		Very Good	Very High: 6 High: 14

5.6.3 Simada Woreda, South Gondar Zone

(1) Final Participatory Evaluation at Woiraye Watershed

Final participatory evaluation at Woiraye Watershed, Simada Woreda, was held at Woiraye Kebele Primary School classroom from 9:45 to 11:45 AM on 25 October (Mon) 2010. The participants were 52 (Female: 10, Male 42) including 1 Development Agent (Male: 1), 2 Woreda Experts (Male: 2), 2 Regional and 1 Zonal Officers (Male: 3).

Final evaluation was not bad except peas, rice and groundnut of Crop Production Component and Mango of Fruits Trees, which were evaluated Not Good. Teff and barley of Crop Production, Orange of Fruits Trees, Improved Fuel Saving Stove, Vegetable Production, Sheep Breed Improvement, Hillside Forage Development and Gully Rehabilitation got Very Good and Very High in validity and sustainability.

The participants said there were problems of farmers' selection, area selection and also foreman's behavior.

Table 5.6.5 Final Participatory Evaluation at Woiraye Watershed, Simada Woreda

Sub-component	Participants	Major Activities	Expected benefits	Midterm-evaluation	Why?	Effectiveness	Why	Other issues	Validity	Sustainability	General
Crop Production	Total: 20 Present: 20 (F:0, M:20)	Adaptive trial on pea, bean, potato, rice, ground nut, haricot bean, barley and sorghum. / 1CRG having 5 members formed. / 3 CRGs formed having 5 members. / Different varieties of teff and wheat planted for demonstration.	Basically for home consumption. If there is excess harvest, for market purpose. / Increased production and productivity.	Except potato and barley, others didn't grow very well.	The land was muddy during plantation except for teff and barley.	Very Good (Barley and Wheat)		Ploughing fields on time. / Farmers should work together.	Very Good (Barley, Wheat Beans, Potatoes and Peas)	Very High (Beans and Potato)	Selection of farmers were not done properly. (Farmers)/ JALIMPS is helping us in keeping our land from danger. The activities undertaken are very important not only to us but also to our children. (Farmer)/ Materials for the nursery site came late. (DA)/ Administrative problems will be solved by WARDO, DAs and Woreda Administration offices. (Woreda)/ We should focus on the effectiveness of the activities. How can you improve the quality of these small activities. (Zone) Farmers should know that we live as long as our environment is protected. So, it is farmers who should be responsible and take the necessary care for our environment. (Woreda)/ This area has been given aid for 25 years and no change yet. But if we could change our attitude and work hard, we could be developed within 5 years. (Woreda)
						Good (Potato)				Medium (Peas)	
						Not good (Peas, Rice and Ground nut)			Not So Good (Ground nut and Rice)	Low (Rice and Ground nut)	
				Teff and barley are very good.	There was enough rain before and after plantation for teff and barley.	Very Good			Very Good	Very High	
Fruits Trees (Fruit Production Campaign)	Total: 6 Present: 2 (F:0, M:2)	Farmers planted seedlings. / 29 farmers received 5 mangoes and 5 oranges each.	Home consumption. / Increased income.	Orange is good.	The soil type was suitable for the orange.	Good		Preparing the land for planting beforehand.	Very Good	Very High	
				Mango is not good.	The soil type was not suitable for the mango.	Not Good			Not So Good	Medium	
Beekeeping (Modern beehive package)	Total: 10 (F:3, M:7) Present: 4	Only training provided.	Farmers use honey basically for market purpose but as a medicine as well.	Not implemented.	Farmers haven't received hives.	Good	We purchased bee colony. Bee hive given by WARDO. The price of bee colony is high now. We were trained in 2008.	Making the area free from small ants.	Good	Very High	
Improved Fuel Saving Stove	Total: 30 Present: 24 (F:4, M:20)	Farmers took training for the improved fuel saving stove. / Farmers constructed improved fuel saving stove.	It saves fuel wood, time and energy. / It has less smoke and good for health.	It is very good.	Farmers made the training practical. / They constructed stoves.	Very Good		We should continue using improved fuel saving stoves.	Very Good	Very High	
Drainage of Vertisol	Total: 24 Present: 3 (F:1, M:2)	Two groups containing 12 members each formed. / Two ponds constructed.	To get harvest twice a year. / Increasing productivity.	It is not good.	After digging the pond there was little rain.	Not JALIMPS'					
Forage Development	Total: 176 Present: 52 (F:21, M:31)	8,000 holes dug. / Sesbania, lucinia and tree lucern planted.	There will be healthy animals. / The bi-product will serve as a fuel wood.	It is effective.	Milk production increased. / Goat and sheep get fat. / Sick animals recover. / The soil type is suitable for forage development. / Farmers follow up its growth closely.	Good		Follow up their growth more closely.	Good	Very High	
Vegetable Production		We planted onion and pepper (10 farmers). We got the seeds from WARDO.	To try and expand for other farmers.	N/A	Doing follow up properly.	Very Good			Very Good	Very High	
Sheep Breed Improvement		8 farmers took one sheep each by credit. We prepared forage and feed.	To expand improved breed for other farmers.	N/A		Very Good			Very Good	Very High	
Forage Development		We planted tree lucern and sesbania.	We get feed for our cattle. It conserves the soil.	N/A	The plants are growing well but there is no proper management by farmers. The area is not closed.	Good		It is better to plant around farmers' house and the church yard.	Very Good (Hillside)	Very High (Hillside)	
									Not So Good (Farm Land) (because of free grazing)	Medium (Farm Land)	
Gully Rehabilitation		We planted eucalyptus, acacia and other local trees on the gullies. We constructed with gabion and check dam. Seedling production	To rehabilitate the land. Soil will not be taken by erosion.	N/A	The problem is wrong area selection and the foreman. The physical status of the gully is good.	Good			Very Good	Very High	

(2) Final Participatory Evaluation at Simada Woreda

Final participatory evaluation at Simada Woreda was held at Agriculture Office Hall from 10AM to 4:30PM on 26 October (Tue) and from 9AM to 0PM on 27 October (Wed) 2010. The participants were 32 (Female: 4, Male: 28) including 2 Regional and 1 Zonal Officers (Male: 3).

Table 5.6.6 Final Participatory Evaluation at Simada Woreda

Sub-component	Major Activities	Midterm-evaluation of farmers' activities	Why	Midtern-evaluation of our" activities	Why?	Effectiveness	Why?	How can we improve?	Other Issues	Validity	Sustainability
Crop Production	Site selection. / orientation for farmers.	Good.	Farmers accepted and implemented DAs advice.	Not Good	Not enough orientation from woreda. / Seeds were not supplied on time. / The existing DAs are all new.	Good (Maize, Triticale, Wheat, Teff & Potato)	Rice and groundnut are not adaptable to the area.	Selecting model farmers and organizing other farmers under them. / Conducting timely monitoring. / Treating land by fertilizer.	Hillside development is not done as one part. / Component of the activities of verification. (Region) / Bee hives were purchased; not sure where they are. (Zone) There was no responsible person to facilitate payment for farmers in the woreda. We were in the field. (Woreda) / We asked farmers to bring an ID to be paid for what they have worked through JALIMPS activities. We didn't know who is who. All the farmers were not paid at once. Some of them come independently. (Woreda) / The implementer of Hand-dug-well was not clearly identified. There was a dispute between Water Resource Office and Woreda Agriculture Office.	Very Good (Others)	Very High (Maize, Triticale, Wheat & Potato)
						Not Good (Groundnut and Rice)				Not Good (Rice and Groundnut)	
Fruits Trees (Fruit Production Campaign)	Inventory survey conducted.	Very good.	70 trees survived and they are in a very good condition.	Good	Monitoring done.	Good (Orange)	Mango hasn't grown very well.	More awareness creation activities are required for farmers. / Only mango and orange are not enough. It's good to try apple, guava, sugar cane, avocado and coffee as well.		Very Good (Orange and Mango)	Very High
						Not So Good (Mango)					
Beehive Development	Training given to farmers.			Not Good	No other activity other than training.	Good	Farmers purchased bee colony and materials.	Supply of materials should be on time. / Close monitoring.		Very Good	Very High
Improved Fuel Saving Stove	Training given to farmers.	Very good.	Most farmers who made stove are using the stoves now.	Good	Necessary equipments for making stove were supplied on time. / Close follow up were done	Very Good	Out of 166 households, 40 females trained./ Except about 20 households, others are using improved stove. (July)	Scaling up the activities. / Demonstrating the good stoves to those who are not make use of them. / Making the mold ready and provide when farmers need.		Very Good	Very High
Drainage of Vertisoils	N/A	N/A				Not JALIMPS'					
Forage Development	Inventory survey conducted.	Forage development around farm land is not good.	Farmers do free grazing around farm yard.	Not So Good	Enough awareness creation activities were not done by Das.	Good (Hillside)		Organizing farmers in groups and making them look after the planted forage by turn. / Increasing farmers awareness on management, how to use forage and the effect of free grazing. / Bring the practices of other woredas.		Very Good	Very High
		Forage development around homestead is good.	The soil type around homestead is suitable for forage development.			Not So Good (Farmland)				Very Good	Very High
Sheep Breed Improvement	8 sheep breeds provided to the farmers/ orientation and training given/ follow up done	Very Good	Farmers are doing the necessary follow up	N/A		Good	Breed of the sheep in the watershed will be improved.	Doing close follow up.		Very Good	Very High
Natural Resource Management	Gully rehabilitation/ hillside forage development/ eye brow basin/ trench/ nursery site development	Good	Farmers actively involved in the activities.	N/A.		Very Good	Farmers accepted the NR activities./ Nursery established.	Administrative problems should be solved as soon as possible.		Very Good	Very High

Sustainability was Very High in all the verification activities and validity was Very Good except rice and groundnut of Crop Production, which were Not Good. Effectiveness was rather bad except Improved Fuel Saving Stove and Natural Resource Management however. Groundnut and rice of Crop Production were evaluated Not Good, and mango of Fruits Trees and Farmland Forage Development were evaluated Not So Good. Rice and groundnut were considered not adaptable to the area.

There was a problem between WAO and Water Resource Office about who should be responsible for the hand-dug-well construction. This activity was not yet implemented.

5.6.4 Bugena Woreda, North Wollo Zone

(1) Final Participatory Evaluation at Keyberet Watershed

Final participatory evaluation at Keyberet Watershed, Bugena Woreda, was held at Keyberet FTC from 10:30AM to 0PM on 1 November (Mon) 2010. The participants were 55 (Female: 44, Male: 11) including 1 Development Agent (Male: 1), 2 Regional and 1 Zonal Officers (Male: 3).

Evaluation was good except Water Tank, which was Not So Good because birds entered the tank and there were damages to the tank. Effectiveness was Very Good only for Beekeeping, but validity was Very Good for all the verification activities. That meant their priority was still very high, but the way of training and extension practiced in the verification project needed improvement.

Improved Fuel Saving Stove was evaluated Very Good at the Midterm, but the effectiveness at the Final was Good because they could not sell the stoves they made. 63 stoves were produced but unsold up to now.

Table 5.6.7 Final Participatory Evaluation at Keyberet Watershed, Bugena Woreda

Sub-component	Participants	Major Activities	Expected benefits	Midterm-evaluation	Why?	Effectiveness	Why	How Can We Improve?	Issues / For future	Validity	Sustainability
Bee Keeping	Total: 6 (F:4, M:2)	We planted fodder for bees. We shifted the bees to modern bee hives. We organized in groups.	It needs less labor. We get more income from the sale of honey. We get quality honey.	Good	We got quality honey. / We got better production. (The local one was attacked by a disease.)	Very Good	The selling price of bee colony (traditional) was 30 birr. Now the bee colony for modern bee hive is 300 birr.	We have to change our training fully in to practice. We should add and use more modern hives. / We should plant fodder trees for beehives.	There is demand of bee hives. There should be more expansion of bee hives.	Very Good	Very High
Crop Production	Total: 24 (F:12, M:12)	We used tie ridger. We organized in group. We used byproducts. We are using the experiences we got from FTC (demo farm) to our own land.	We get more production from small land.	Good	Even though there was shortage of rain fall, there was relatively better production. (From one timad, locally, we get 3-4 quintal. Now, 6 quintal)	Good	The new breeds need more carethan the local ones. When they get sick, there is no adequate treatment.	Borderless and repeated ploughing to protect pest. (Degeza) / We have to fully implement the skills we got from the training.		Very Good	Very High
Improved Fuel Saving Stove	Total: 20 (F:10, M:10)	We constructed stoves. We are using it now. We are organized as a group. We prepare a new lid.	It saves fire wood and has no much smoke. It has less fire exposure.	Very Good	It saved our time significantly. It reduced fire exposure and wood consumption.	Good	Improved stove is very important to the watershed but we couldn't sell what we produced.	There should be more expansion of using improved fuel saving stoves to others.	We produced but not sold 63 stoves./ Place for production is not enough.	Very Good	Very High
Sheep Rearing	Total: 10 (F:5, M:5)	We took one ram and one ewe. The male changed to female. The fattening was changed to production. We planted fodder and we are using it.	We get better price by rearing and selling.	Very Good	We managed around our house (less labor). We got more income.	Good	The new breeds need more carethan the local ones. When they get sick, there is no adequate treatment.	We should take care on their health and add more sheep. We should prepare fodder.		Very Good	Very High
Natural Resource Development	Total: 72 (F:39, M:33)	We implemented half crescent and hillside terracing. We planted seedlings of eucalyptus, gravilia, juniperous, omedla and pigeon pea.	We know that mountains are economic sources. Therefore, we expected to keep the area fertile; to balance the weather condition forest. (We have seen other areas which have good forest are advantageous.)	Good	Now, forest trees are growing. Soil erosion highly decreased.	Good		JALIMPS should not mix its activities with ORDA's. It has to have one mountain in the watershed and develop.	Planting forage hasn't been practicedby farmers from history. We should expand this practice around farmland and hillsides./ There is land shortage to plant enough forage but many need to plant. There should be control of free grazing.	Very Good	High
Fruit Production									They should be planted in areas where there is water.	Very Good	Very High
Water Tank						Not So Good			Half of the part of the tank was filled by water during end September. Birds entered in the tank and we don't know how to dispose them./ The upper tank has two damages i.e. on its surface and outer part. The surface is being damaged because it doesn't have basement.	Very Good	Medium

Evaluation of Beehive Development went up from Good at the Midterm to Very Good at the Final. The reason was the selling price and bee colony from the modern beehive was 300 Birr where that

from the traditional beehive was only 30 Birr.

(2) Final Participatory Evaluation at Bugena Woreda

Final participatory evaluation at Bugena Woreda was held at Bugena Youth Center from 9AM to 4:30PM on 7 November (Sun) and 8:40AM to 0:30PM on 8 November (Mon) 2010. The participants were 31 (Female: 3, Male: 28) including 2 Regional and 1 Zonal Officers (Male: 3).

Validity was very good and sustainability was very high across the board. To clarify the priority, the participants were asked to choose the best ones and they are Beekeeping, Crop Production, Improved Fuel Saving Stove and Natural Resource Management which are underlined in the table.

Effectiveness was Not Good for alfalfa and *desmodium* of Hillside Forage Development planted at FTC because they were not suitable for the agro-ecology of the area, and also Water Tank because not enough water could be harvested and birds and insects entered in it. The vote for the effectiveness of Fruit and Vegetable Production was a split: 9 for Very Good and 15 for Good. They were growing well, but there was a management problem and allocated budget did not come on time.

Table 5.6.8 Final Participatory Evaluation at Bugena Woreda

Sub-component	Major activities	Midterm-evaluation	Why?	Effectiveness	Why?	How can we improve?	Issues / For future	Validity	Sustainability
Beekeeping	Training given for 4 days to 12 farmers and 4 DAs. Technical guidance on the field provided. Bee hive and wax for the trainees provided. / 10 farmers provided with modern bee hives. Training given for 5 days for the ten farmers and Kebele DAs.	Very Good	Farmers are interested in this activity very much. They are getting 35 kg honey from 1bee hive.	Very Good	Bee flower is available. Farmers are transferring from the traditional to modern bee keeping.	Budget allocation should be on time.	Watersheds have their own byawsand committees. Committees are composed of priest, women, rich farmer, poor farmer, model farmer, Natural Resource DA, representative from neighboring village (to settle arising disputes) and kebele administrator./ Since there is high turn over in the woreda, we didn't want to give veterinary service training for experts. The trainees are giving service service now. (done out of watershed)	Very Good	Very High
Crop Production	Training given for 5 days to 8 farmers. We provided crop seeds (wheat, harricott bean, lentil, rice and barley to DAs.) Chemicals provided to farmers to protect crop damage by Cricket (Degeza or Wollo Bush) / Wheat, barley, beans and maize planted on a trial farm at FTC. Teff, wheat, barley and beans planted on farmers' plot.	Very Good	The farm land was prepared on the right time. Weeding and harvesting were also done on the right time.	Very good except maize (Trial) Very Good except beans (Demo)	Maize was sowed late. Beans were damaged by a disease. We call it "Sir abesbis" or "Chafer"	Budget allocation should be on time. We should protect the crops before they become damaged by insects.		Very Good	Very High
Improved Fuel Saving Stove	Training given for 20 farmers and 4 DAs for 10 days. / Training given for 3 experts for 5 days in Bahir Dar. Training given for 60 youth who are organizing in groups. Gonze, fetenech and mud type closed stove constructed.	Good	Farmers got training before starting to make stoves.	Very Good	We organized Enjera party to sensitize farmers to use improved stoves. Farmers clearly see the difference of using the three stones and improved ones. Farmers travel more than 4 hours to collect fire wood so they want to save.	Farmers prefers another type of stove (Mirt) than Gonze. So, we should try to bring Mirt in addition to Gonze.		Very Good	Very High
Sheep Breed Improvement	Training given for 12 farmers and 4 DAs for 5 days. Sheep distributed to farmers. / Four washera improved breeds and 6 local breeds provided for 5 farmers.	Good	Farmers got training on how to manage the sheep and how to feed them.	Very Good	The sheep were physically well. (Their growth and weight)	Enough feed for the sheep should be prepared.	It was planned to do sheep fattening but changd in to breed improvement.	Very Good	Very High
Natural Resource Management	Training given for Gabiyon tying for 8 woreda experts, 4 DAs and 3 farmers for 7 days. (Both pratical and theoretical) We asked a trainer from ORDA to give training on Gabiyon tying. Field guidance given. Training for 15 farmers for 5 days on Mobile Nursery Establishment. / Nursery site establishment, afforestation, gully rehabilitation and soil and water conservation done.	Not Good	Shortage of rain, budget, transportation and poor management. There was no close assistant.	Very Good	It is contributing to the natural resource management conservation activities of the woreda. The nursery is serving as a model nursery site in addition to other nurseries.	We should do close follow up. The estimated budget should be enough to implement the plan.	Wardo doesn't give enough atttention to the JALIMPS activities because the most of the experts don't understand the scope of the work.	Very Good	Very High
Fruit and Vegetable Production	Training given to more than 20 farmers and 3 DAs. Provision of fruit seedlings done. (apple, mangoe, papaya, orange, guava and lemon) / Apple, orange and mango planted. We provided to 46 farmers. (2women and 44 men) The fruits are planted in the FTC and farmers' land.	Good	Fruit seedlings are well growing because they are near to the pond that helps to water them on time. We educated the farmers on how to manage the seedlings.	Very Good: 9 Good: 15	Their germination rate is 90%. They are growing well. There was problem of management. (All the necessary follow up was not done.)	The allocated budget should come on time. We should water the plants continuously.	Farmers used to consider that fruits are not adaptive to the area.	Very Good	Very High
Hillside Forage Development	Pigeon pea, treelucern, sesbania planted on hillside and sesbania and vetch planted on farmers' land; Alfalfa and dismodium planted in FTC			Very good Not Good	Forage plants at FTC and hillside became very good even without proper management. (They are suitable for the agro ecology.) Alfalfa and dismodium need fertile land. The agro ecology is not suitable for them.			Very Good	Very High
Water Tank Construction				Not Good	Birds and other small animals i.e. insects entered in it. Enough water couldn't be harvested. It was installed hurriedly.		The tanks shouldn't have been placed on a temporary basement. No proper attention was given. For the future, permanent basement should be done. Woreda Water Resource Office should be responsible.	Very Good	Very High

5.6.5 Gidan Woreda, North Wollo Zone

(1) Final Participatory Evaluation at Tejno Watershed

Final participatory evaluation at Tejno Watershed, Gidan Woreda, was held at Mewat FTC from 10AM to 0PM on 4 November (Thu) 2010. The participants were 73 (Female: 21, Male: 52) including 2 Development Agents (Male: 2), 1 Woreda Expert (Male: 1), 2 Regional and 1 Zonal Officers (Male: 3).

Out of the nine verification activities, effectiveness was Very Good for four verification activities, and Good for the other five verification activities. Validity was Very Good and sustainability was Very

High for four verification activities, which were Sheep Fattening, Gully Rehabilitation, Forage Development and Hillside Terracing.

Evaluation of Beehive Development improved from Not Good at Midterm to Very Good of effectiveness at Final because blossoms came after the Midterm. Validity was only Good, however, because the price of modern beehive, which was already high for the farmers, increased from 250 Birr to 400 Birr recently.

Table 5.6.9 Final Participatory Evaluation at Tejno Watershed, Gidan Woreda

Sub-component	Participants	Major Activities	Expected benefits	Midterm-evaluation	Why?	Effectiveness	Why?	How can we improve?	Other Issues	Validity	Sustainability
Beehive Development	Total: 12 (F:0, M:10)	We got training for 5 days. / Bee colony purchased from other farmers by the money received.	Farmers use the honey for market purpose.	Not Good	Bees couldn't get adequate nectar from vetch, acacia, asta, kosheshila, kelawa, ashendiya, adey abeba because of a disease called 'wag'.	Very Good	Now there is flower for the bee.	Follow DAs advice. / Follow up closely.	Farmers are seeing changes with the activities being undertaken. / Since the activities are yours, you (farmers) should continue doing by yourselves. You should consult DAs as well as to make your activities effective. (Zone) / More awareness creation works have to be done with respect to the importance of those activities to the farmers. / Farmers should improve their follow up. / Particularly, sheep fattening is good for our watershed. The improved varieties have big difference from the local breeds. / We feel as if we are in 'Raya' and 'Yeju' when we see trees are growing well. / Planting wheat in our watershed is a new idea. We could find about 2.5q from 0.1ha. / We should follow modern systems of planting by working with DAs.	Good	Very High
Sheep Fattening	Total: 10 (F:0, M:10)	We fatten the sheep provided by ARDO and sold them with a better price.	We get additional income.	Good	Disease prevalence decreased and the sheep got enough forage.	Good		Planting enough forage and taking the animals to agriculture office when they get sick.		Very Good	Very High
Crop Production	Total: 10 (F:0, M:10)	We planted wheat and barley at FTC. / 4 farmers planted on their own farms (bean, lentil, wheat and barley).	Increase product and productivity. / We keep the harvest as a seed for next plantation.	Good	Farmers did close follow up. / There was adequate rain.	Very Good	The varieties were resistant to sun shine.	Better to plant in May than in July. / Consult DAs.		Good	Very High
Tree Planting	Total: 50-60 (F:25-30)	We planted eucalyptus at enclosed areas. / We dug holes for more than 20 days.	The trees serve for construction purpose. / We get additional income.	Good	There was adequate rain. / The area was enclosed and was free from contact.	Good		We should keep enclosing the area. / We should plant on the right time of plantation.		Good	High
Gully Rehabilitation	Total: 50-60 (F:25-30)	We planted eucalyptus and forage seeds on gullies.	Keeps the soil from erosion.	Very Good	Several varieties of plants planted such as sesbania, vetch sinar and eucalyptus. / No much damage because there was no heavy rain.	Very Good	It reduced wide gully.	We should plant more elephant grass.		Very Good	Very High
Forage Development	Total: 50-60 (F:25-30) 5 at FTC	We planted sesbania, treelucern, chebha and alfalfa and sinar at FTC. / We planted forage seeds around farm land.	We sell the product for cooperatives.	Good	There was adequate rain. / The area was enclosed and was free from contact. / Farmers did close follow up.	Good		Follow DAs advice. / Follow up closely.		Very Good	Very High
Improved Fuel Saving Stove	Total: 20 (F:18, M: 2)	Farmers took training in to rounds. / They constructed stoves.	The smoke of the improved stove will not affect women's eye. / It saves fuel wood.	Good	Farmers organized in groups and discuss about its importance.	Good	The soil of the are is not appropriate to produce stoves.	We should keep using the stoves.		Very Good	High
Fruit Production		More than 50 farmers planted apple. We have been given guidance by DAs.	We expected the apple to give fruits after 4 years. We expect to sell it.	N/A		Good	Its good from its stand.			Good	High
Hillside Terracing		Cut off drain, half moon and terrace constructed.	It conserves soil and water.	N/A		Very Good	We cut the grass and feed to our cattle. It controlled erosion. It used as a model to train other farmers			Very Good	Very High

(2) Final Participatory Evaluation at Gidan Woreda

Final evaluation at Gidan Woreda was held at the Muja Town Youth Center Hall from 8:50AM to 4PM on 5 November (Fri) and from 9AM to 0PM on 6 November (Sat) 2010. The participants were 37 (Female: 2, Male: 35) including 2 Regional and 1 Zonal Officers (Male: 3).

Validity was Very Good for all the 11 verification activities except Fruit Production, which was good, but sustainability was Very High firmly for Sheep Fattening, Crop Production at Farmer's Land, Tree Planting, Improved Fuel Saving Stove and Ewe Keeping Training for Women only. There were 14 vote for Very High, while 12 votes for High in Beehive Development, 2 votes for Very High vs. 12 votes for High in Crop Production at FTC, and 3 votes for Very High vs. 24 votes for High in Business Skill Training for PLWHAs. Sustainability was evaluated High for Gully Rehabilitation, Forage Development, Fruit Production and Vocational Training for Carpentry.

Fruit production was not a planned activity and no training on fruit was provided to the farmers. Since the activities planed for Natural Resource Management were already done by the Productive Safety Net Program, the budget was applied to Fruit Production in 2008. In 2010, however, they integrated the

Productive Safety Net Program with Natural Resource Management Component.

In general discussion, participants pointed out several important issues: Budget allocation and activities should follow the government procedure. / Provision of money and input should revolve among the farmers. / We should consider JALIMPS as part of our regular activities. Experts also said that planting wheat in Tejno Watershed was a new idea and it became successful.

Table 5.6.10 Final Participatory Evaluation at Gidan Woreda

Sub-component	Major Activities	Midterm-evaluation	Why?	Effectiveness	Why?	How can we improve?	Other Issues	In general	Validity	Sustainability
Beehive Development (Total = 12, M=10)	Selection of target groups. / Hive, wax and other materials were bought. / Training given to farmers for 5 days.	Not Good	It was too late.	Good	The strength increased through time. Now there is flower for the bee. A package of materials supplied.	Supply of materials should be on time. / There should be close follow up.		Budget allocation and activities should follow government procedure. / The provision of money and input should revolve around farmers. If not, it is against the regulation of the law. / We should consider JALIMPS as part of our regular activities. / DAs and Woreda experts should report officially to each respective body respective body consistently. (There should be monitoring system) (Zone) /	Very Good	Very High: 14 High: 12
Sheep Fattening	Selection of target groups - 10 farmers. / Training given for 3 days. / Forage seed distributed. / 3 sheep delivered for each farmer.	Good	Sheep were bought by experts. / The breed fits to the environment. / Provision of forage.	Very Good	The money we are getting from the improved breeds sale is 4 times higher than local breeds.	Bringing other improved breeds from other areas. / Currently only oat and vetch available so we should also plant other forage seeds.	What was the exact activity done? Sheep fattening or sheep breed improvement? (Region)		Very Good	Very High
Crop Production	Demonstration done at FTC (wheat, barley carrot and onion)	FTC: Very Good	There was close follow up and it was local variety.	Very Good (FTC)	The follow up in the farmers' land was not as good as in the FTC because DAs have much burden.	We should do the activities on the proposed time. / Training on pest control.	Wheat for Mewat Kebele is a new finding. It was not planted by farmers previously. This is s good result. (Region)		Very Good	Very High: 2 High: 12
	Adaptive trial done on farmers' farm land (barley, lentil, bean and wheat).	Farmers' land: During germination:Good Farmers' land: After growth: Not Good	It was damaged by rats and birds.	Not Good (Farmers' land)		Follow up should be done closely and consistently.			Very Good	Very High
Tree Planting	N/A / Discussion made with farmers. 2500 eucalyptus seedlings planted. Terracing done.			Very Good	It was managed properly. It is enclosed area. Farmers have nursery.	We heard informally that 20,000 birr allocated lately. No activities done by JALIMPS under NR management component. (woreda) / In the plan, the cost for digging holes was calculated but the holes at the watershed were already dug by Safety net.			Very Good	Very High
Gully Rehabilitation	N/A / Terracing, gabion checkdam, half moon trench, I brow basin and cut off drain constructed.			Very Good	Farmers didn't use to practice planting on gullies. Now they understood the importance and are interested in planting seedlings on gullies.	Therefore we shifted the budget to buy apple under discussion with the NR management expert of JALIMPS. / JALIMPS is undertaking different components namely, Agricultural Promotion, Livelihood Improvement and NR management. What is the progress of NR management activities?			Very Good	High
Forage Development	Forage seed distributed for 20 farmers.	Good	Farmers did ploughing and weeding repeatedly. / Forage seeds are suitable to the agroecology.	Good (Treelucern, Vetch and Sinar) Not Good (Rhodes and Falaris)	Rhodes is not suitable to the area. Falaris was washed away by the heavy rain.	Other forage seeds should also be incorporated.			Very Good	High
Improved Fuel Saving Stove	Selection of target groups. / Training given for 15 days (all of them constructed stoves.	Not Good	The produced stoves got crack. / The soil type is not to make stoves and awareness of trainees is limited.	Good	Guidance and orientation given repeatedely. Mothers are using it in the watershed.It gets cracked during transportation from the FTC to Woreda.	The soil type should be studied. / Awareness creation tasks for farmers should be done. / There should be enough facility at the FTC.	JALIMPS compared the effectiveness of improved stoves and three stone stoves at Bahir Dar. (Region)		Very Good	Very High
Fruit Production	187 apple seedlings distributed for 27 farmers	Good	Most of the beneficiaries have irrigable land.	Good: 18 Not Good: 8	Hail damaged the leaves of the apple. It could have recovered had there been proper management by farmers and DAs. Das and woreda experts don't have enough awareness about apple. Though budget allocated, no training had been given.	We should provide training on fruit management for farmers. / Farmers should prepare the land beforehand.	Fruit production was not a planned activity. Hence we couldn't give training for farmers and follow up.		Good	High
Ewe Keeping Training for Women	Training given for one day for 10 women on ewe keeping. Each woman received 4 sheep. (Package: 1: 3)	N/A.		Very Good					Very Good	Very High
Vocational Training on Carpentry	Five unemployed youths recruited. Training given for 25 days in carpentry. Materials provided.	N/A.		Good	Creates job opportunity. There is shortage of capital. They are going to be organized as association. It provides additional capital.				Very Good	High
Business Skill Training for PLWHAs.	Business skill training given for 5 days. Starting Capital provided to 10 PLWHAs.	N.A.		Very Good	Previously it was difficult for them to get their daily food. Now they can sustain themselves.		The money given should not be credit, but free for PLWHAs.		Very Good	Very High: 3 High: 24

5.6.6 Kobo Woreda, North Wollo Zone

(1) Final Participatory Evaluation at Amid Watershed

Final participatory evaluation at Amid Watershed, Kobo Woreda was held at a vacant land under three shed along the national road between Weldia to Mekele from 7:30AM to 9AM on 9 November (Tue) 2010. The participants were 26 (Female: 0, Male: 26) including 2 Development Agents (Male: 2), 1 Woreda Expert (Male: 1), 2 Regional and 1 Zonal Officers (Male: 3).

Effectiveness was Not Good for Beehive Development, because it was only training and beehives were not given, and Poultry Production, because chickens came during cold season and most of them died.

Most of the nine verification activities got Very Good for validity and Very High for sustainability, but those for Beehive Development were Good and High only. Validity for Crop Production was also Good because effectiveness of groundnut and sorghum was Not Good while teff was Very Good. Sustainability for Tree Planting and Poultry was also High only.

Table 5.6.11 Final Participatory Evaluation at Amid Watershed, Kobo Woreda

Sub-component	Participants	Major Activities	Expected benefits	Midterm-evaluation	Why?	Effectiveness	Why?	How can we improve?	Other Issues	Validity	Sustainability
Beehive Development	Total: 5 (F:0, M:5) Present: 4	We got training for three days.	We get additional income.	Not Good	Even though the training helped us in understanding improved methods of bee keeping, we couldn't practice what we have learned.	Not Good		We have to work hard and show to others how we become successful. / We should plant flowering trees.	We shouldn't forward all the problems to JALIMPS, DAs or WAO. We should also see our own problems/ Much work has to be done on our part. Even though there is draught, what has been done by us is not satisfactory/ we want to use ground water/ JALIMPS is studying in this area for the betterment of the livelihood of the people through small verification projects implementation. (Zone)/ We should not expect payment for every thing because primarily all activities being done are for the improvement of your livelihood. The activities are yours. (Region) We thought improved stove is not that effective but now we see a big difference between the improved and traditional one./ We are happy about the school construction project./ Due to lack of clean water, diseases are spreading./ Fertilizer in a dry land is not good.	Good	High
Sheep Rearing	Total: 9 (F:0, M:9) Present: 2	We got training for one day.	We get hybrid sheep - productive sheep. / We sell the sheep for a better price.	Not Good	Theoretically, there are improved varieties that can be productive within short time; practically, we didn't see one. But we know how to rear and fatten sheep.	Very Good	Now, we have new breed sheep. We have hope.	If one ram comes, we can improve the productivity of our sheep through insemination		Very Good	Very High
Improved Fuel Saving Stove	Total: 20 (F:15, M:5) Present: 10 (F:2, M:8)	We got training for 9 days. / Each of us constructed stoves. / 60 to 70 farmers constructed stoves after we showed them how to make at the FTC together with DAs. / We compared the efficiency of three stone stove and the improved one at the FTC.	It saves fuel wood. / It doesn't have much smoke and less exposure to fire.	Very Good	We can make coffee and wat sideways/ at the same time.	Very Good	It is protecting us from flame.	We should continue using improved stoves and other farmers should also construct.		Very Good	Very High
Crop Production	Total: 3 (F:0, M:3) Present: 2	We planted teff, sorghum and teff on demo farm. / We planted rice, ground nut and chickpea on trial farm.	Relatively better harvest. / We will continue plantation if rice and ground nut are adaptable.	Not Good	There was not enough rain during germination.	Good	Teff is very good. (Groundnut and sorghum not good)	We have to be careful when to apply fertilizer. (It should be when it rains).		Good	Very High
Tree Planting	Total: about 200 (F:80 -100) Present: 62 (F:18, M:44)	We planted about 3600 indigenous tree seedlings and eucalyptus on hills.	Keeps the soil from erosion.	Not So Good	Majority of the seedlings not survived. / The ones which are survived have fast growth.	Good		There should be consistent follow up from farmers and DAs.		Very Good	High
Forage Development		We planted cow pea, sesbania, lucinia around farm land and hills.	We get enough feed for our cattle.	Good	We cut the forage plants and give to our cattle. / We are also using the longer logs for construction of houses.	Very Good		We should do follow up and plant forage seeds on time.		Very Good	Very High
Gully Rehabilitation		We planted Jatropha on gullies.	The area will be enclosed and free from animal contact.	Good	The land is rehabilitating to its previous condition.	Very Good		We should use gabion to withstand heavy rain. We can use sack as an alternative.		Very Good	Very High
Primary School Construction		Committee formed. Materials collected. (wood, stone) Construction started.	Our children can access education near by. They will not be exposed to car accident. They don't have to go further up to Gobiye.	N/A	Even though the school is under construction, children are learning.	Very Good				Very Good	Very High
Poultry Production		We purchased chicken with 500 birr. Shed constructed.	We get additional income.	N/A	The chicken came during cold season and most of them died.	Not Good				Very Good	High

(2) Final Participatory Evaluation at Kobo Woreda

Final participatory evaluation at Kobo Woreda was held at Kobo Catholic Church Hall from 9AM to 4PM on 10 November (Wed) and from 8:40AM to 0:30PM on 11 November (Thu) 2010. The participants were 28 (Female: 2, Male: 26) including 2 Regional and 1 Zonal Officers (Male: 3).

There were splits in voting for the effectiveness of Beehive Development (Good: 8 vs. Not Good: 12) and Gully Rehabilitation (Good: 7 vs. Not Good: 7). As described in the evaluation at Amid Watershed farmers felt they got only training of Beehive Development. The beehives were planned to be given for fee but Woreda / Government Regulation does not allow free provision and farmers were reluctant to take hives by credit. Woreda Officers also thought they should use organized groups rather than individual farmers. Artificial Insemination activity was postponed and still pending.

Evaluation on sustainability was quite strict in Kobo Woreda and only sewing of Vocational Training and Primary School Construction Support of 11 activities got Very High. There were splits for Beehive Development (High: 13, Low: 5) and Improved Fuel Saving Stove (Very High: 9, High: 9 and Low: 2).

For Crop Production and Forage Management, the participants commented that (1) using rented land for demonstration was not recommended, and (2) the Study Team should contact Woreda Agricultural Officer (WAO) before contacting farmers and Development Agents (DAs) directly.

Table 5.6.12 Final Participatory Evaluation at Kobo Woreda

Sub-component	Major Activities	Midterm-evaluation	Effectiveness	Why?	How can we improve?	Other Issues	Validity	Sustainability
Beehive Development	Training for 3 days for 9 farmers given. / We searched for colonies and hives-we found. / 10 farmers organized n groups newly and site selection done to continue bee keeping.	Not Good	Good: 8 Not good: 12	The hives were planned to be given for free. Woreda/ government regulation doesn't allow free provision. Then farmers became reluctant to take hives by credit. (9 hives through cooperatives, 1 hive :540 birr) / They want to do individually not in group / association./ We couldn't find bee colony so far. Shed constructed.	It is better to use organized groups for implementing activities, not individual farmers. (eg. Youth group)	Washera breed was not compatible for the agroecology of Kobo/ budget transfer should be on time (We organized youth group for poultry production and sheep production) / Do farmers have capacity to buy cemented improved stoves? We better try to extend the cheaper ones. (Zone) / We should convince farmers that they should work hard and take the harvest for themselves; using rented land for demonstration is not recommended. It should be on farmers' land- they take the harvest.(we didn't try to convince farmers. / Before contacting farmers and DAs directly, 1ALIMPS should contact WAO./ The Technical Committee should be active, do monitoring frequently and report to respective bodies. (zone)	Very Good	High:13 Low: 5
Sheep Production	Training was given to 5 farmers for one day. / We made discussion with ORDA and agreed to change the breeds (that fits to the agroecology).	Implementation not good (but the training was good in filling the management gap of farmers.	Good	The money transfer didn't come until now. / Woreda administration agreed to give the sheep with subsidy. (15-30%) / 5 sheep provided to 5 farmers. Their adaptibility is good.	We are waiting the budget. (we are now ready to purchase from Sirinka Research Center.		Very Good	High
Improved Fuel Saving Stove	8 days training was given to 65 farmers (theory + practice) at FTC by woreda experts. / During the training farmers constructed stoves (more than 150 stoves). / 26 of them organized as one group and they are constructing to sell to other farmers. (They do not start selling yet).	Very Good	Very Good	Conserves vegetation. / Reduces smoke. / There was sufficient practical training. / Used as IGA.	Gonze is movable so that the plate of the stove is being broken. (farmers told to DAs and woreda experts) / Follow up should be done closely and consistently. / Gonze is made from clay soil; the soil type is not available easily. / Much fire wood is requi		Very Good	Very High: 9 High: 9 Low: 2
Crop Production	We planted ground nut, maize and rice in trial farm (row planting and broadcasting). / Fertilizer and improved seed provided. We also planted sorghum and maize on demo farm with farmers.	Not Good	Good	There was no enough rain (it was good during germination period). / Except ground nut, the rest crops are adaptible. / There was too heavy rain and early ceasation./ Farmers are comapring and contrasting different varieties of crops.	We should do water harvesting. / Demonstration should be done where there is irrigable land.		Good	Medium
Tree Plantation	About 3,000 saligna, 30 kg jatropha provided for farmers. / Training given to about 250 farmers (all people of the community) on NR ,management and agricultural production for 1 day.	Not Good as Expected	Very Good	There was no enough rain after they were planted. / Jatropha: 20-25% survived; Acacia saligna: 40% survived. / The seedlings are growing well. There is relatively high survival rate. The watershed community ha its own bylaws.	We should use proper. / Recommended plantation pit. (Zay or improved pit). / We should be careful in selecting the appropriate area for plantation.		Very Good	Medium
Forage Development	12 kg rhodes grass and 40 kg vetch provided (some pigeon pea also).	Good for Pigeon Pea, Rhodes Grass Vetch are not good as expected.	Very Good	Pigeon pea needs less moisture. / Rhodes grass affected by drought. / Farmers understood the importance of forage development. They are interested in planting both in farm land and hillside.	We should prepare the land beforehand and plant forage seeds during rainy season.		Very Good	High
Gully Rehabilitation	We provided cow pea from FTC to farmers to plant on gullies. / Check dam constructed on the gully. / Discussion made with farmers and site selected.	Very Good	Good: 7 Not good: 7	Pigeon pea and check dam contributed good. / The area was closed and it is in a very good stage of development. / Gully rehabilitation activities decrease in terms of both quality and quantity. Amid watershed is a model watershed and gabions were purchased but not implemented.	We have to reshape the gully by doing structures. (eg. checkdams) After that we have to plant fruit like banana o gully.		Very Good	High
Artificial Insemination	Market assessment conducted. / Training on AI service provided for about 250 people for 1 day.	For the next stage.	Still Pending				N/A	N/A
Women IGA	Gender Anaysis/ Gender training on IGA/ Gender mainstreaming	N/A	Very Good	Husbands didn't know the role of their wives in decision making. Trainees atleast could identify the distinction between gender and sex.			Very Good	N/A
Vocational Training on Brick Production and Sewing	Training given./ Group association formed. Sewing machine purcased./ Brick production started.	N/A	Very Good				Very Good	Very High (Sewing) High (Brick)
Primary School Construction Support	Corrugated iron sheet provided./ Committee formed to collect construction wood.	N/A	Very Good	Children are attending school nearby.			Very Good	Very High

5.6.7 Mekedela Woreda, South Wollo Zone

(1) Final Participatory Evaluation at Tebi Watershed

Final participatory evaluation at Tebi Watershed of Mekedela Woreda was held at the FTC from 9:30AM to 11AM on 17 November (Wed) 2010. The participants were 33 (Female: 3, Male: 30) including 4 Development Agents (Female: 1, Male: 3), 2 Regional and 1 Zonal Officers (Male: 3).

Effectiveness of Fruit Production was evaluated Not So Good, because (1) it took long time to give fruits, and (2) there was another variety which was more productive. In Crop Production, wheat was good but rice was Not Good.

Validity and sustainability were Very Good and Very High across the board except the sustainability of Beekeeping and Fruit Production, where the participants said it was too early to evaluate sustainability of these verification activities so that N/A. The priorities among them were No1: Improved Fuel Saving Stove, No.2: Poultry Production, and No.3: Hillside Forage Development as underlined in the table.

In general discussion, DA pointed out that farmers damaged *jatropha* because they thought it killed their cattle. One DA also added that he also thought *jatropha* was not good for cattle.

Table 5.6.13 Final Participatory Evaluation at Tebi Watershed, Mekedela Woreda

Sub-component	Participants	Major Activities	Expected benefits	Midterm-evaluation	Why?	Effectiveness	Why?	How Can We Improve?	Issues / For future	General	Validity	Sustainability
Improved Fuel Saving Stove	Total: 50 (F:2, M:29) Present: 13 (F:6, M:7)	Training was given for 50 people. We produced and sold to market. 50 of them are utilizing. We formed an association. Other 15 farmers produced stoves with 15 birr each. We sold 18 stoves for 30 birr each. 31 stoves are ready for sale. There are other 35 stoves not yet fermented.	It saves forest from cut down. We get additional income as a group. It reduces firewood consumption by half.	Very Good	We are using cow dung as a compost instead of using it for fire wood. We are earning income birr 10 per fuel stove. We use the mold in schedule. We can cook wat and coffee at the same time. It prevents us from smoke.	Very Good		Promotion by woreda shall be done. Place for production should be prepared. Shortage of mold should be resolved. Farmers should do the activities by commitment.	Generally, to improve the sale of fuel stoves, it is better to breed with local varieties. / The cost of improved stove became 30 birr from 10 birr - The association decided. But no demand from the people bcause the cemented one used to be sold 50 birr and not easily broken. the clayone is 30 birr and easily broken. Quality should be improved.	We all should be benefited out of the components because if one is successful, we will balance the unsuccessful ones. There should be frequent visit by JALIMPS to the watershed or woreda monthly or once in two months. (WAO) You did good regarding improved stove. We will find a way how to promote and mobilize the people with WAO. You have to continue all the mentioned activities by yourselves. WAO will continue working together with you. (Zone)/ The finance procedure is an obstacle for our work. We couldn't buy some of onion and potato seeds on due time. (DA)/ We didn't do capacity building because of shortsge of budget. Forage development was not so effective. (WAO)/ Some farmers thought JAtropha kills their cattle. So they damaged it. Activities should be done on the right time. I also think Jatropha is not good for cattle. (DA)	Very Good	Very High
Poultry Production	Total: 30 Present: 11 (F:4, M:7)	We got two days training on poultry for 30 people. Chicken distributed to 5:1 ratio. We prepared poultry house and started to produce. We prepared poultry feed.	We get egg for sale, to reproduce and for home consumption. It helps us in improving our livelihood.	Good	It benefits us by producing one egg per day. / We sell for 2 birr per egg.	Very Good	The price of egg is getting high. (now 2 birr) We are selling eggs consistently. (My hen lays eggs every day for two years without interruption.)	They are out of home and taken by birds. We should construct shelter for the chicken.	Poultry is good for the area. / Medical treatment should be improved. We shouldn't expect from woreda and other donors every time. We can do poultry by ourselves because.		Very Good	Very High
Crop Production	Total: 10 (only at FTC)	We prepared compost. We used fertilizer to plant wheat, teff, bean, chickpea, lentil, maize and rice at the FTC on demo and trial farm. We did preparation of land, weeding, and harvesting. We got fertilizer and improved stove. We compared the harvest.	It generates income for FTC. To reproduce seeds and to be supplied for other farmers. Production increases.	Teff was Good. / Wheat was Good. / Maize, if panted early, it was Good. / DZ variety increases by 50%. / Rice was Not Good. / Lentil, chickpea and bean were Not Good because they were late.	In general, rain didn't come on time.	Good	Teff is improved variety and we got advice from DAs. Wheat was not good. (I could get 13 quna of lentil from 10 by 15 m land.)	Payment was not given to us. Supply of improved seeds and fertilizer should be on time. We should prepare our land on time.	Teff variety is very good. Woreda should supply more.		Very Good	Very High
Sheep Rearing	Total: 10 Present: 6 (F:0, M:6)	We got 1 ram each for 10 farmers. We did breeding and prepared forage for the rams. (We sold our own local varetes.)	Income increases by selling them to marke for a better price. We breed with our sheep.	Very Good	They are breeding. Their size is bigger. Forage feed becomes very helpful to their development.	Very Good		Female breeds are better. We should expand to others through breeding.	The sheep are disease resistant. They are adaptive to the environment. Awasi breed are very good.		Very Good	Very High
Hill side Development/ Forage Development	All farmers in the watershed	We planted jatropha, saligna, tree lucern at model hill. Seedling given to us.	To conserve soil and to percolate water. To prevent from flood and use as a firewood.	Good	It serves as feed for cattle and for sheep. It conserves soil. After cuting it regenerates. Saligna is used for bees.	Good		We should manage (watering and cultivation) properly. We should continue expanding.	Forage development has multi-purpose. (for cattle, bees and land) We should keep planting widely. We should plant more forage plants which can reach within short period of time.		Very Good	Very High
Bee Keeping	Total: 10 (F:1, M:10)	Training was given to 10 farmers.	We get high and quality honey. Our income increases.	The training was Good. / Production was Not So Good.	Farmers are practicing of modern bee hive by themselves. Modern bee hive is more productive than the traditional one. Insecticide kills bees.	N/A		Insecticide to the weeds on planting of bees. Smoking tool and other inputs should be supplied according to the plan. Planting of forage plants; saligna in particular in our homestead in addition to hillsides.	Bee keeping changed to sheep breed improvement.		Very Good	N/A
Fruit Production		We planted 300 apple seedlings. Each farmer received 12 to 16 seedlings.				Not So Good	It takes long time to give fruit. There are other varieties which give fruit in a short time. It requires much water.	There is another variety which is more productive. We call it ground apple.			Very Good	High

(2) Final Participatory Evaluation at Mekedela Woreda

Final participatory evaluation at Mekedela Woreda was held at the Mekedela Woreda Administration Hall from 9:20AM to 4:40PM on 18 November (Thu) and from 8:45AM to 0:15PM 19 November (Fri) 2010. The participants were 32 (Female: 4, Male 28) including 2 Regional and 1 Zonal Officers (Male: 3).

Beekeeping was changed to Sheep Rearing because JALIMPS could not purchase beehives from Woreda Agricultural Office. Since the verification project budget was in Government Finance Office, WAO was the seller and the purchaser at the same time.

Though effectiveness of FTC Farm Improvement, Agroforestry (Tree Planting) and Fishpond Construction was Not Good, validity of all the verification activities was Very Good just like the watershed. For the final participatory evaluation of watershed-level activities, the evaluation on effectiveness and validity at Woreda-level and at watershed-level was exactly the same. The only deference was the sustainability of Hillside Forage Development and Woreda-level evaluation was High, where watershed-level evaluation was Very High with No.3 priority.

There was a heated discussion on diversion and duplication of the execution of the verification project budget. In FTC Farm Improvement activity, they purchased a camera even though they already had one purchased by Rural Capacity Building Project. Also sleeping bags were purchased by the verification project budget. Experts emphasized that inserting fish into the fishpond had been tried but not effective.

In general discussion, the participants said that the technical committee for the verification project should know the objectives of the Study clearly. Also since the Woreda needed to know what activities

were being done in the watershed, the Study Team should not had contacted DAs directly.

Table 5.6.14 Final Participatory Evaluation at Mekedela Woreda

Sub-component	Major activities	Midterm-evaluation	Why?	Effectiveness	Why?	How can we improve?	Issues / For future	General	Validity	Sustainability
Improved Fuel Saving Stove	Training for 50 farmers in 3 round. Mould supplied to farmers. (M:21, F:29)	Good.	It saves fuel wood/ forest trees. It reduces smoke. It generates additional income for farmers. It uses only local resource. It is not very good because there is a problm of working place.	Very Good	Mainly our mothers and sisters are using improved stoves. It saves their time and protect them from health related problems.	Felenech improved stove thickness should be reduced. It requires much mud. (The mud farmers use to make one stove is equivalent with the mud they use for miking three big pots(gan) reduce atleast to 1. / We should improve the quality of the stoves. The association should be given a working place. (They borrowed FTC's store room temporarily.) The produced stoves should be kept in a proper place. Promotion activities should be done.	The mold became deformed after much use. Additional mold is necessary. Promotion for the improved stove is needed.	There is less monitoring from JALIMPS. We should improve the activities we are supposed to do as a technical committee. We have to improve the budget flow and transfer up to watershed. (WAO) We have to connect JALIMPS activities and our own activities. JALIMPS watershed (Tebi) is better off, why is that watershed selected? Food Security expert as a Focal Perso is better. (Zone)/ We wanted to make the watershed model watershed. Since there is a dam there, we thought we would get technical support from JALIMPS. We expected some maintenance activities too. (WAO) Activities should be done on the due time./ Activities of Agricultural Promotion are good, because the experts frequently come and give technical support unlike NR management activities. Regarding NR activities, the budget was released. No technical support and enough monitoring. (WAO)/ Incentive should be consistent for all DAs in all components. (DA)/ Purchasing process is long and needs manual. (WAO)/	Very Good	Very High
Poultry Production	Training for 30 farmers. (M:25, F:5) 45 male and 135 female poltry distributed purchased from Gerado. (1:5 ratio)	Not as expected	Poultry feed and management was low.	Very Good	Farmers are getting additional income. Poultry requires small cost and less labor. (Women and children are taking care of them.) There is high demand of improved varieties. There is some management problem though from the side of the farmers.	We should do close monitoring. Training given for farmers on the management and care of poultry. We should take care during purchasing. (their health and variety) / Farmers should do all the necessary management activities by themselves. (instead of wire, local fence) Farmers should be organized in a form of association. (need assessment)	There should be close relationship among implementing stakeholders. Variety selection should be emphasized. Inserting fish in to the dam were tried once but not effective.		Very Good	Very High
Crop Production	10 farmers organized as one group. (5 farmers at demo farm - teff and wheat planted; 5 farmers did adaptive trial on teff, rice, lentil, faba bean, field pea and maize.)	Teff was very good. Lentil was medium. Maize was not good.	Teff variety was disease resistant and good for the environment. There was late sowing for maize. There was water lodging for the lentil.	Good	We found 25q. Per hectare. Teff and wheat are very good. Farmers are learning modern agronomic practices starting from land preparation to harvesting time. 300 farmers bought improved seed variety of teff from FTC.	Adaptive trial should be done on farmers' field. Crop variety and soil type should match and also the variety to the environment. We should consult Sirinka Research Center. We have to expand the trial.	DAs in the FTC don't know much about the varieties. (on demo and trial farm) The same kind of field guidance is necessary. (There was a joint field guidance at Kobo last year.)		Very Good	Very High
Sheep Rearing	Orientation was given. No training. We provided 10 rams.	Good.	The varieties have rapid growth and bigger physical appearance than the local ones. Not very good because price was expensive for sheep. (1000 birr) The environment is conducive to sheep.	Very Good	Other 72 sheep distributed to farmers. They easily get fat during fattening. The sheep got vaccination before they come here. The selling price of sheep is high.	Since *Awasi* breed is expensive, *Washera* breed has better price. (500 birr) Training and experience sharing for farmers needed.	Female breeds are required.		Very Good	Very High
Hillside Development/ Forage Development	We provided saligna, accacia dikerence, elephant grass and vetch. Plantaton done with farmers on hills and farmers' field.	Not good.	After plantation, damaged by cattle./ Awareness of farmers is low. Jatropha was planted on degraded areas. Forage plants on farmers' field dissappeared. No enough monitoring by DAs and WAO.	Good	Farmers planted forage seedlings willingly. All forage plants aren't damaged; some survived. Some farmers are planting forage by themselves.	Supply of tree seed should be on time. Seedlings should be produced in the local area, not seed distribuion to farmers.	We should give training/ orientation for farmers regarding tree grazing and jatropha. Participatory action planning for NR manageent activities is needed. Technical Committee should be active in NR activities too. Hillside forage development requires close follow up.		Very Good	High
Beekeeping	Training given for three days for 10 farmers. Implementation not started yet. We shifted some money (about 1/4) to poultry and forage seed procurement. The remaining money not utilized.	Good for training Not good implementation	Farmers understood modern bee keeping mechanisms. JALIMPS couldn't buy hives from WAO. (JALIMPS budget is in government Finance Office. WAO becomes the seller and purchaser.)	It was changed to Sheep Rearing.		JALIMPS/ WAO should consult BoARD on how to get the hives from Kombolcha Agricultural Mechanization.		All activities are being carried out under the umbrella of Food Security Program. So basically, food insecured farmers should be the main actors of any agricultural activity. (Region)/ The Chairperson of the committee should be active.	Very Good	N/A
FTC Farm Improvement	Puchasing of farm tools done. (Measuring tape, watering can, honey extractor, shovel, spade, vegetable seeds and stationery)	Very good.	Farmers are using them at FTC and nursery sites.	Not Good	Improved bull purchased. It is giving crossing service. Shed constructed to water harvesting well at the FTC. Sleeping bag was purchased but not given to FTC. The planned activities were not done accordingly.		One camera was provided by SIDA to FTC bought at 6000 birr. So we didn't buy one. The budget for the purchase of camera is not utilized yet. (2000 birr) Stationary was not included in the action plan.	The Focal Person and the Chair Person should communicate frequently. / The committee should know the objective of the Study clearly. JALIMPS contact DAs directly. However, the woreda has to know what activities are being done in the watershed basically. There is a camera purchased by Rural Capacity Building project; No need to purchase another camera.	Very Good	N/A
Agroforestry (Tree Planting)	Olive, acacia albenda and dikerence, wanza, zigba and gravilia were purchased from Dessie. We established nursery site. Seeds distributed.	Not yet.		Not Good	We didn't integrate agricultural production and forestry. The seeds were not compatible to the agro ecology.				Very Good	High
Fish Pond Construction	Fish pond dug by farmers (10 farmers). Compost added to produce algae.			Not Good	We saw some fishes died. No preparation done. No body from woreda and kebele was there when the fishes wetre inserted in to the pond.				Very Good	N/A
School Support (Library Support)	We purchased reference books from Addis Ababa. Well dug in June. We purchased 10,000 litre water tank. Necessary materials for hand dug well construction purchased.			Very Good	Most of the books in the library were fiction books. Our library moved one level up. It contributed greatly to the quality of education.				Very Good	Very High

5.6.8 Legambo Woreda, South Wollo Zone

(1) Final Participatory Evaluation at Assoye Watershed

Final participatory evaluation at Assoye Watershed, Legambo Woreda was held at FTC from 9:30AM to 11:30AM on 21 November (Sun) 2010. The participants were 46 (Female: 19, Male: 27) including 3 Development Agents (Female: 1, Male: 2), 2 Regional and 1 Zonal Officers (Male: 3).

Effectiveness of Improved Fuel Saving Stove was evaluated Not Good, and that of Crop Production was evaluated Good, but other five verification activities were Very Good. Validity was evaluated Very Good across the board and Sustainability was Very High only except Improved Fuel Saving Stove, which was evaluated only High.

As a matter of fact, this was the only participatory workshop where the effectiveness of Improved Fuel Saving Stove was evaluated Not Good and it was because those who were involved in the association for improved fuel saving stove were not benefiting from it. Their expectation for additional income was quite high.

Beekeeping was included in the verification activities at the midterm, but it was found later that not one of the verification project activities.

In general discussion, many farmers expressed their disappointment because they were not paid for their work as other neighboring villages. The Study Team explained the difference of policies between technical cooperation and other schemes like the Red Cross which was active in neighboring villages.

Table 5.6.15 Final Participatory Evaluation at Assoye Watershed, Legambo Woreda

Sub-component	Participants	Major Activities	Expected benefits	Midterm-evaluation	Why?	Effectiveness	Why	How can we improve	Issues / For future	Validity	Sustainability
Improved Fuel Saving Stove	Total: 27 (F:24, M:3) Present: 10 (F:8, M:2)	Training was given to 27 farmers for five days and other 40 farmers for two days. We constructed more than 50 stoves and took them most of them to Akesta for sale.	We get additional income. It saves time and fire wood. It minimizes exposure to fire.	Good (Stoves made in October were damaged though.)	It reduces fire wood by 2/3. / Exposure to fire reduced.	Not Good	Those who are involved in the group (association) of improved stove are not benefiting from it rather it is consuming much of their time. It is very useful that it doesn't consume much time. No much demand from other farmers. We took the stoves at a bazaa	We should improve the quality of the stove. / Farmers should disseminate the skills of making stoves to other farmers. / Promotion activites should be done by woreda.	The main aim of improved stove extension is to use the improved stove by all farmers and ultimately conserve the forest coverage. (Woreda) / The soil type farmers using is not so good to make stove. / The area is potentially good for bee keeping so it should be given more attention.	Very Good	High
Gully Rehabilitation	Total: 173 (All farmers in the watershed)	We practiced using wood and nail purchased by Woreda Agriculture Office. We planted grass and conserve the soil.	To protect land from soil erosion (protect us from flood) To produce forage grass; To make the area green and good for bee keeping	Very good.	We saw a big change. There was a big gorge - Now the gorge is rehabilitating and we and our cattle can pass through the gorge easily. / The power of water below the gorge is increasing. The fertility of soil improved.	Very Good	Our land is rehabilitating. Soil is not being washed away. Our cattle are drinking water nearby after we planted many trees on the hillside.	Rehabilitated gully is like a 'sponge'. It absorbs water and holds it. So, we should continue doing gully treatment.	After planting onion, we couldn't plant onion the coming year because of the damage by a disease called 'Jibo'./ Farmers should develop by themselves and they should discuss on how to disseminate the skills/ exchange skills. (Region)	Very Good	Very High
Bee Keeping	Total: 173 Present: 2 (F:0, M:2)	Training was given to 173 farmers for three days. We compared traditional and modern bee keeping in the training. There was no supply of bee colonies and hives. Four farmers are doing modern bee keeping by themselves after the training.	By applying modern bee keeping, quality honey for sale and for home consumption. To get promising income by planting flowering plants for the bees and keeping gullies.	Good.	We understood modern bee keeping mechanisms.	Not JALIMPS'		We have to plant flowering plants. We should conserve hilly areas.		Very Good	N/A
Forage Development	Total: 173 (Majority are males.) Present: 36 (F:10, M:26)	173 farmers trained on forage development for three days. We planted more than 10,000 seedlings of tree lucern and elephant grass at homestead, farm land and gullies.	We get feed for our cattle and sheep so that we get better beef and milk. Soil erosion stopped; environment balanced; water conserved.	Good.	Our cattle and sheep are getting enough feed. It becomes good for honey development.	Very Good		We should continue planting forage seeds every where. (homestead, farm land and hilly areas) We should stop overgrazing and free grazing.		Very Good	Very High
Vegetable Production	Total: 173 (Majority are males.) Present: 5 (F:1, M:4)	We received seeds of onion, garlic, cabbage and tomato. Training was given for three days to 173 farmers.	For home consumption; For market purpose, it generates income.	Cabbage was very good. Carrot and Garlic are good, not affected by insect. Germination of onion was good. After growth, Germination of onion was not good.	Onion was damaged by an insect called 'Jibo'. Cabbage generated about 1000 birr.	Very Good	We are getting cash income. I sold 1,100 birr from 20g of carrot. (a farmer)	Agriculture Office should find disease controlling mechanism.		Very Good	Very High
Crop Production	Total: 2 (F:0, M:2) Present: 1 (F:0, M:1)	Training was given on crop production for three days. Wheat, bean, fenugreek, and barley planted on demo and trial farm in rows and broadcasting. We planted barley and lentil on our farm land after seeing the barley at demo farm.	To fill the food gap and contribute to ensuring of food security	Not good.	It was not sowed on time but the variety was good.	Good		We should plant crops on time. We should give due attention for the crops. (using fertilizer, improved method)		Very Good	Very High
Fruit Production		Each farmer planted from 10 to 12 seedlingds on average in homeyard or irrigable land. (30 farmers took.) 400 apple seedlings planted.				Very Good	The seedlings are growing well.		Other nearby village is getting aid from Red Cross. JICA is not doing like Red Cross.	Very Good	Very High
Sheep Breed Improvement		Seven farmers took one Awasi breed each.	Improved local breeds, we expect.			Very Good	All are in a very good condition. They are not old enough to make offsprings.			Very Good	Very High

(2) Final Participatory Evaluation at Legambo Woreda

Final participatory evaluation at Legambo Woreda was held at the Legambo Woreda Administration Hall from 9:20AM to 5PM on 22 November (Mon) and from 9AM to 11:50AM on 23 November (Tue) 2010. The participants were 25 (Female: 3, Male: 22) including 2 Regional and 1 Zonal Officers (Male: 3).

Final participatory evaluation at Legambo Woreda was quite positive. Though effectiveness of Vegetable Production and Fruit Production was only Good, all the other six verification activities got Very Good. And furthermore, all the verification activities got Very Good in validity and Very High in sustainability. Among them, the participants chose three best verification activities and they were Forage Development, Vegetable Production and Crop Production.

Table 5.6.16 Final Participatory Evaluation at Legambo Woreda

Sub-component	Major activities	Midterm-evaluaton	Why?	Effectiveness	Why?	How can we improve?	Issues / For future	Validity	Sustainability
Improved Fuel Saving Stove	We provided training for 27 farmers for five days on how to construct, use and manage improved stoves. We provided two days training for other 42 farmers. Other 8 people including School Director, Kebele Administrator and DAs were trained for 1 day. Promotion and distribution of improved stove done.	Good	Other than the trainees are using improved stoves. JALIMPS is the only organization inthis woreda doing activities of improved stove extension. The outputs are gradually being sold for 50 birr each even in Dessie.	Very Good	Of course some stoves damaged during transportation, their quality is not so good and there is no proper storage of stoves. But it is a very good start for the kebele. Farmers understood the importance. Promotion done by the woreda.	Improving the quality of the stove. Elongating part of the improved stove. Skill transfer to neighbours. We have to arrange working place for farmers.	We should not stick to one type of fuel saving stove. We should try to employ other fuel saving mechanisms like solar energy and bio gas.	Very Good	Very High
Gully Rehabilitation	Nail and wood purchased by 11,000 birr. Grasses planted. 156 people trained for three days on Gully Rehabilitation. About 30 ha. Area closure done. Fodder crops planted on gullies.	Very Good	The area was highly degraded, but now it is rehabilitating.	Very Good	Other biological activities like forage development are done. We are harmonizing JALIMPS activities in to our own activities.	Some cemented check dams and gabion should be constructed in areas which are severely damaged.	We have to harmonize JALIMPS activities with other activities of the Woreda Agriculture Office. In one way or another, the Study focuses on ensuring of food security of farmers. It is not a project yet. (Region)	Very Good	Very High
Beekeeping	Training given for 53 people on bee keeping for three days. Two farmers are doing traditional, other two farmers modern bee keeping.	Good	Farmers were not interested in bee keeping before. However now, the demeand of farmers to conduct bee keeping is increasing.	N/A		We have to make arrangement for farmers to purchase local bees each other. Arranging credit through revolving mechanism.	How are we measuring the results of our activities? What are the indicators?	N/A	N/A
Forage Development	Vetch, alfalfa, cow pea and dismodium seeds distributed to farmers. Training provided for 53 farmers for 2 days.	Alfalfa, vetch and cow pea: Good Dismodium and lablab: Not Good	Most of the seeds arrived at WAO on 29 July. They were supposed to be planted the first week of June though. Farmers reserved vetch seeds for next plantation. They use it for their cattle. Vetch is used also as a flowering plant for honey development.	Very Good		The seeds should be quality seeds and adaptible to the area. (highland) Seed supply should be on the expected time. There should be additional technical training on how to grow fodder seeds effectively. / Some forage seeds/ plants are not eaten/ eatable by cattle but very productive and nutritious. We have to fmiliarize these plants/ grass to the cattle through recurrent practice.	Since we are encurring additional resource, there should be a difference among JALIMPS watershed (Assoye) and other watersheds in the woreda.	Very Good	Very High
Vegetable Production	Carrot, onion, cabbage, lettuce, potato, tomato and garlic provided for 56 farmers.	Onion & Garlic: Very Good Potato: Good Cabbage & Tomato: Not Good	The potato is being damaged by porcupine, however the production is good. Cabbage is not good because of water shortage. Onion and garlic are needed for market. Tomato doesn't fit to the environment.	Good	JICA/ JALIMPS brought new technology regarding potato plantation. 95% of th seed survived.	The quality of onion seed should be improved. Meher season and belg season seeds should be separated. For belg season, seed should come in September; for meher season, in June. (through irrigation)	Guards are not paid. They don't do safety net activities but are beneficiaries.	Very Good	Very High
Crop Production	Adaptive trial on wheat, barley, lentil and bean varieties done at FTC. 50kg fertilizer was bought and distributed to farmers.	Not Good	It rained before the land was prepared. The trial farm holds too much water. Seeds didn't arrive on the due time. Farmers didn't like the barley variety because local ones have 6 branches but this one only 2.	Very Good	There is crop pest epidemic in the woreda this time. However, the varieties tried are disease resistant. Especially one of the wheat varieties didn't damage by the disease occurred.	Seed type of barley should be good for the area. We should work together with Research Centers. There should be timely provision of seed.		Very Good	Very High
Fruit Production				Good	Germination rate of apple is high.		The seedlings may be in a dormancy period. We cannot evaluate their sustainability at this time.	Very Good	N/A
Sheep Breed Improvement				Very Good	Awasi breeds are disease resistant. They are in a good condition. We have record sheet to follow up their growth. Enough training given to the seven farmers.		Farmers prefer Awasi breeds than other improved breeds such as Washera. The breeds came to give crossing service to the watershed. Seven farmers are selected by the community and are just hosting the sheep. Committee established to follow up the service properly.	Very Good	Very High
Business Shed Construction for Youth				Very Good	Youth are participating such as in barbery, food preparation, tea/ coffee selling. It contributes a lot to reduce the wide unemployment problem.			Very Good	Very High

5.6.9 Aregoba Woreda, South Wollo Zone

(1) Final Participatory Evaluation at Lower Senbo Watershed

Final participatory evaluation of Lower Senbo Watershed at Aregoba Woreda was held at Fetekoma FTC 10AM to 11AM on 24 November (Wed) 2010. The participants were 22 (Female: 8, Male: 14) including 1 Development Agent (Female: 1), 2 Regional and 1 Zonal Officers (Male: 3).

Effectiveness of all the four verification activities was evaluated Good, validity of Improved Fuel Saving Stove and Water Tank out of four verification activities was evaluated Very Good, and only Improved Fuel Saving stove was evaluated Very High for sustainability. The quality of the Water Tank needs improvement.

Since there was only one mold of an improved fuel saving stove for both lower and upper Senbo Watersheds, the farmers said the mold was not available yet.

Table 5.6.17 Final Participatory Evaluation at Lower Senbo Watershed, Aregoba Woreda

Sub-component	Participants	Major Activities	Expected benefits	Midterm-evaluation	Why?	Effectiveness	Why?	How can we improve?	Other Issues	Validity	Sustainability
Improved Fuel Saving Stove	Total: 20 (F:19, M:1) Present: 14 (F:14, M:0)	5 days training for 20 people given. / We were organized in two groups. / Each group constructed one stove. / No other activitites done after training.	It saves our time and fuel wood. / Reduces smoke. / Fire doesn't burn our legs and hands.	Not Good	DAs took the mold to Dibie(upper watershed). So, each of us didn't construct.	Good	We have done closed stove by mud. Some women are doing them. It simplified the work of women. Gonzeare not used widely. To do gonze we took training but the community is using widely mud made to save firewood. The mould is not available yet.Soil to make gonze is available in the area widely. Gonze is sold in market. It saves women from fire and smoke.	Keeping the mold at the FTC. / We should share skills to one another.	There are other farmers who constructed improved stove in the watershed. But they didn't get training from JALIMPS. So, if they involve in JALIMPS activities, it's easier to extend./ farmers should continue planting the successful crop varieties on their own farm land (woreda) / Since firewood is not available, we have to expand with the support of experts. For future, the land is getting eroded and giving attention to conserve the soil must be done.	Very Good	Very High
Crop Production	Total: 1 (F:0, M:1)	One farmer demonstrated four crops, teff, masho(sorghum), harricott bean and maize. / After growth, we visited the demo farm. / We identify varieties that can be harvested within short time.	We use the seed for the next plantation. / We get better production.	Good	After visiting the demo farm, farmers are encouraged to plant the demonstrated crop varieties.	Good	There are farmers who planted sorghum, teff and maize. Maize and sorghum are practically seen. Sorghum has change.They are short season crops that can be suitable for short rainy season. They are drought resistant. They can be harvested with in to months. They hold good fruits. There was a trial in a small farm; 10m by 20m, each crop on farmers' land. Masho is growing by the farmers themselves privately. 50 kg of Masho is being sold up to birr 1000. There is no grazing land in the area and sorghum leaves are used as a forage. The stems are not much to use as a forge. Seeds were not supplied on time.	We should discuss with the demo farm owner how to get the seeds and implement. / We should work together with DAs.	Farmers should discuss their problems and successes regarding the crops they are planting. (eg. Which varieties are more productive?)/ Water Action planned to construct water point. The kebele stopped them because the Kebele Administration was not sure what JALIMPS planned to do/ JALIMPS promised us to construct small scale irrigation scheme(river diversion) what is the progress? / Farmers have interest to use the varieties. Four farmers participated in the trial. The seeds should be supplied on time. We have been trained on crop production, bee hive development, fruit production, vegetable production and animal husbandry. On crop, pest and disease control, forage trining for 21 farmers provided. The training was not put in to application. There was budget at the woreda but no many activities.	Good	High
Fruit Production	Total: 10-20 Present: 0	20 apple seedlings planted. / 1-2 seedligs distributed to each farmer.	We sell the fruit at the market.	N/A		Good	Their leaves are at good condition. They haven't started giving fruit yet. The growing stage is good. Planted near by water. This year apple seedlings were not distributed. Farmer not yet recognized the use. Appropriate for woina dega. Mango and avocado were introduced and other farmers can also try apple.			Good	N/A
Water Tank Construction			We cook food to students by water harvested from the water tank.			Good	As planning levl, it was good. We planned to use them for vegetable production.	The quality of the water tank should be improved by maintaining. Budget shall be allocated for maintenance if not changing of the tanker.	This year there is a flood and the land is forming gullies but there is no activities on NR. An associationis established to do NR. A mechanism of supporting this shall be arranged by JICA. We heard there is budget at woreda.	Very Good	N/A
Natural Resource Development		N/A (There was only a study to identify the watershed for JALIMPS activities.								N/A	N/A

(2) Final Participatory Evaluation at Upper Senbo Watershed

Final participatory evaluation of Upper Senbo Watershed at Aregoba Woreda, South Wollo Zone was held at Dibea Primary School classroom from 10AM to 11:30AM on 25 November (Thu) 2010. The participants were 77 (Female: 15, Male: 62) including 2 Development Agents (Male: 2), 2 Regional and 1 Zonal Officers. (Male: 3).

There were only three verification activities which were implemented. Crop Production and Fruit Production were evaluated Good, and Improved Fuel Saving Stove was evaluated Very Good for effectiveness. For Improved Fuel Saving Stove, the mold was not for the small sized stove and they said they wanted to try a small one.

Table 5.6.18 Final Participatory Evaluation at Upper Senbo Watershed, Aregoba Woreda

Sub-component	Participants	Major Activities	Expected benefits	Midterm-evaluation	Why?	Effectiveness	Why?	How can we improve?	Other Issues	In General	Validity	Sustainability
Crop Production	Total: 5 (F:0, M:5) Present: 2	We prepared compost. / We planted teff, maize and wheat on demo farm / Six farmers (in the WS) participated in crop production. We sowed wheat new variety. Weeding done three times. We planted sorghum this year.	More production and productivity.	It is good but not as expected.	Short life span, 29 days. / Late sowing and shortage of rain.	Good	Maize tried and it reaches within short period of time and good at its standing. Lentil, oat, field pea and bean's production decreased but by half wheat and sorghum. The local varieties were also not much productive. (Not because of the varieties.)	Planting seeds on time. / The seeds should be multiplied and distributed to other farmers. Training shall be expanded to other farmers.	We need new varieties of teff and lentil. The wheat variety has fruits but it was harmed by the rain. As we compare with last year, the product is lower due to heavy rain but the varieties are good. They are adaptable to the environment (lentil and field	The time for implementing the activities was too short. / If you work harder, the zone will continue working closely with you. (Zone)/ You should work closely with DAs; consult them on how to protect disease, increase productivity of our land and so on. (Region)	Very Good	Very High
Fruit Production	Total: 10 (F:0, M:10)	15 farmers planted 5 seedlings each.	We use it as income source.	Good at its seeding stage, it takes time to give produce.	Farmers water the seedlings daily.	Good	We haven't seen the benefit of apple. There are farmers who took 2-3 seedlings. Some of the planted apples that are planted in watery areas and managed properly, started giving fruits.	Applying the advices of DAs.	We would like to try other fruit trees like mango, orange and coffee.		Good	N/A
Forage Development	Total: 45 (F:10, M:35) Present: 10 (F:2, M:8)	We got training for 5 days on forage production, tree planting and poultry production.		Good.	Elephant grass is a new idea.	N/A		Implementing the ideas and techniques we found from the training by ourselves.			N/A	N/A
Tree Planting	Total: 45 (F:10, M:35) Present: 9 (F:6, M:3)			Good.		N/A					N/A	N/A
Poultry Production	Total: 45 (F:10, M:35) Present: 6 (F:4, M:2)			Not good.	No supply of chicken. / We already know how to raise chicken.	N/A		We want to know which breed is better and how to treat them when they get sick.			N/A	N/A
Improved Fuel Saving Stove	Total 20 (F:16, M:4) Present: 8 (F:5, M:3)	20 farmers trained for 5 days. / All of us constructed stoves. / Other farmers are constructing stoves after we showed then at FTC.	It save time and fuel wood. / It reduces smoke.	Good.	Protect children from fire. / Saves time and labour.	Very Good	Using small amount of firewood, we can cook food. Stves cannot be broken easily. It prevents children from fire. We can cook in short period of time. Trained farmers showed other farmers. We use the mold and women are doing.	The mold is not for the small sized stove; we want to try the small one too.			Very Good	Very High

Validity and Sustainability of Crop Production and Improved Fuel Saving Stove were Very Good and Very High. Those of Fruit Production were Good and N/A because farmers had not seen the benefit yet. They also said they wanted to try other fruit trees like mango, orange and coffee.

(3) Final Participatory Evaluation at Aregoba Woreda

Final participatory evaluation at Aregoba Woreda, South Wollo Zone was held at Aregoba Woreda Administration Hall from 9:30AM to 3:30PM on 26 November (Fri) and from 9AM to 0:30PM on 27 November (Sat) 2010. The participants were 32 (Female: 2, Male: 30) including 2 Regional and 1 Zonal Officers (Male: 3).

Table 5.6.19 Final Participatory Evaluation at Aregoba Woreda

Sub-component	Major activities	Midterm-evaluation	Why?	Effectiveness	Why?	How can we improve?	Issues / For future	Validity	Sustainability
Improved Fuel Saving Stove	Training provided for five days for both lower and upper watersheds for 40 people. (20 each) We gave one mold for lower FTC. FTCs use the mold by turn.	Very Good	Each trained farmer constructed one. Some other farmers (seven farmers out of the trainees) are producing stoves by themselves.	Good	There were gaps in support and follow-up. The majority of farmers are not using improved fuel saving stoves. the training was not continuous. The start is good. there is an expertise gap. There is no an expert of energy at woreda level. There is no enough mould.	If possible, it would be good to use cement; the current one is broken frequently. (One farmer repaired 6 times.) Until farmers understand the advantages of using improved stove, cement is better. Modifying the mold to make the smoke in only one direction is preferable. / Monitoring and technical support is needed.	This kind of workshop should be at Harbu. Otherwise, it is 4 hours journey from Dibie and 5 hours from Fetekoma on foot to come to Senkele. (DAs)/ The woreda center is not Harbu. It is Senkele; The woreda administration decided to conduct this kind of workshop at Senkele basically. (WAO)/ Farmers consider JALIMPS as one of the donor organizations. We should make farmers understand that it is a Study. Administrators and office heads should also understand this clearly. (WAO)/ No close monitoring done by JALIMPS in all activities. WAO)/ For communication problem, if possible, well working radio communication is an alternative solution. (WAO)/ I don't see much work done in this woreda. As an example, farmers in Mekdela woreda are organized as an association by themselves. You should have done better. Don't expect everything from JALIMPS. (Zone)/ You should harmonize JALIMPS' activities with WAO on going activities. (Region) Veterinary service training was done.	Very Good	Very High
Crop Production	We give training on ICM for 30 farmers for the two watersheds. (15 each) We did adaptive trial at farmers' field. (Sorghum, maize, teff, ground nut, haricot bean on 0.23 ha land)	Very Good	0.23 ha land planted. Row planting exercised. Crop varieties that are drought and pest/ disease resistant planted. (Short life span crop varieties were also planted.)	Very Good: 3 Good: 14	Sorghum variety named abshir was adaptable to the area. Teff was also adaptable to the area. Format and gobiye variety of sorghum were next effective varieties of sorghum. Teff showed good result. Wheat at upper watershed was good. follow-up of woreda to kebele development workers was not good. these varieties can reach within 90 to 120 days. Seeds were supplied but guidance was not good.	Expansion of adaptive trial in wider area and using on other farmers' land. There should be timely preparation of trial. Experience sharing. / Last year, the adaptive trials were effective. 28 per hectare from abshir variety of sorghum was obtained. Format variety was effective at lower watershed. 51uintal per hectare of maize obtained last year. This year, sirinka agricultural research center took the responsibility but not supported the woreda. This year, land rent for trial of crops was not there because farmers were let to develop dependency syndrome due to land renting.		Very Good	Very High
Fruit Production	About 500 apple seedlings distributed. Orientation given to farmers.	Not Good	No training given. No follow up and monitoring.	Very Good	Apple is reaching at flowering and fruiting stage especially at upper watershed (dibea). Apple is at good condition in place of dega weather and watery area. Last year, 80 seedlings of apple were planted at lower watershed and 20 seedlings at upper watershed. At dibea only few of the seedlings planted at FTC did not survive due to the change of development agents and close management was not there but at farmers level they were effective. Out of 20, sixteen of them survived at dibea watershed the majority of the survived were plants at watery area. At fetekoma 61 seedlings survived from the planted 80 seedlings. Those planted at kolla weather were not much successful.	Train farmers properly. Apple is new for the area therefore, training for DAs is necessary. There should be timely and sufficient provision of seed. Fruit nursery should be established. Since fruit takes much time to give production, it is good to focus on vegetables. There should be continuous follow up. / Training should be given on time.		Very Good	Very High
FTC Farm Improvement	Farm tools (shovel, spade, weighting balance, rain gauge, tie ridger) provided for lower watershed. Farm tools (shovel, spade and weighting balance provided to upper watershed.	Not Good	There was late provision of equipments. Very small quantity provided. Equipments not centrally situated. No camera and GPS.	Not Good	This year, there are materials to be supplied by ORDA but the procurement was not done. There was no detailed know how on the issue. It was not implemented. There was a purchase of digging hoe, shovel last year. On the other hand purchase of tray, shovel, meter, rope, pick-axe materials from NR budget.	FTC equipments and other preconditions for training should be fulfilled. There should be enough monitoring and follow up by JALMPS. (budget also) / Auditing and follow-up shall be made by JALIMPS. There is no FTC at Dibea. There is FTC at fetekoma. Strengthening of these FTCs with materials and equipments is necessary. At Dibea, FTC is not in a position of working.	On the other hand natural resource management activities were done by the regular agriculture office regular program. But material procurement to FTC was done from the budget of Natural resource management.	Very Good	Very High
Goat Fattening Training for Jobless Youth	Ironsheet, wood, nail were requested for purchase but it is in the process of bidding to construct shed. 30 youth were trained on goat fattening. The non-functioning of the road contributed for delay of procurement of materials. Discussion with the technical committee to purchase wood and barrel was done. Shed is not yet constructed.			Good: 15 Not Good: 5	The budget is small from the side of JALIMPS (60,000). The process of purchasing and procurement was not fast. The training was done at the right time. Finance couldn't make purchasing. The person won the bidding was not volunteer to transport the materials. A total request for procurement of materials was not done and changing of the material request was there. This led inability to fit the allocated budget with the cost of materials.		There are jobless youth in the woreda. The expected benefit was that the youth can raise goats and sell them and generate income. Veterinary service training was done. On the other hand natural resource management activities were done by the regular agriculture office regular program. But material procurement to FTC was done from the budget of Natural resource management.	Very Good	Very High
Water Tank Construction	The water tank was transported to the school by JAIMPS.			Very Good: 20 Good: 3	The basement was not made first and it leaked water. The idea of establishing water tank was good for vegetable production and food preparation. Over 800 students are in the school and it can serve a lot.			Very Good	Very High

For effectiveness, Fruit Production and Water Tank Construction (Very Good: 20, Good: 3) were Very Good, Improved Fuel Saving Stove, Crop Production (Very Good: 3, Good: 14) and Goat Fattening Training for Jobless Youth (Good: 15, Not Good: 5) were Good, and FTC Farm Improvement was Not Good.

For validity and sustainability, all the six verification activities got Very Good and Very High across the board, and priorities were given to No.1 Crop Production, No.2 Water Tank Construction and No.3 Goat Fattening Training for Jobless Youth.

The participants said the budget of 60,000 Birr for Goat Fattening Training for Jobless Youth was too small and the process of purchasing and procurement was not fast.

5.6.10 Summary of Final Participatory Evaluation

For the purpose of summarizing and comparing the results of the final participatory evaluation workshops, simple quantification was used: (1) Effectiveness: Very Good-4, Good-3, Not So Good-2 and Not Good-1, (2) Validity: Very Good-4, Good-3, Not So Good-2 and Not Good-1, and (3) Sustainability: Very High-4, High-3, Medium-2 and Low-1.

The scores and the average of the final participatory evaluation workshops at nine watersheds are shown in Table 5.6.20 and those of the final participatory evaluation workshops at eight Woredas are shown in Table 5.6.21.

Table 5.6.20 Summary of Final Participatory Evaluation at Nine Watersheds

Component	Sub-component	Effectiveness									Validity									Sustainability									Region Average
		South Gondar Zone		North Wollo Zone			South Wollo Zone				South Gondar Zone		North Wollo Zone			South Wollo Zone				South Gondar Zone		North Wollo Zone			South Wollo Zone				
		Ebinate watershed	Simada watershed	Bugena watershed	Gidan watershed	Kobo watershed	Mekedela watershed	Legambo watershed	Aregoba watershed (lower)	Aregoba watershed (upper)	Ebinate watershed	Simada watershed	Bugena watershed	Gidan watershed	Kobo watershed	Mekedela watershed	Legambo watershed	Aregoba watershed (lower)	Aregoba watershed (upper)	Ebinate watershed	Simada watershed	Bugena watershed	Gidan watershed	Kobo watershed	Mekedela watershed	Legambo watershed	Aregoba watershed (lower)	Aregoba watershed (upper)	
Agricultural Promotion	Crop Production	4	2.5	3	4	3	3	3	3	3	4	3	4	3	3	4	4	3	4	4	2.5	4	4	4	4	4	3	4	3.5
	Fruits Trees (Fruit production Campaign)	3	2.5		3		2	4	3	3	3	3		3		4	4	3	3	4	3		3		3	4	N/A	N/A	3.2
	Horticulture (Vegetable Production)	4	4					4			3	4					4			3	4					4			3.8
	Forage Development (Farmland)		3		3	4		4		N/A		2		4	4		4		N/A		2		4	4		4		N/A	3.5
	Forage Development (Hillside)	3	3			4	3	4		N/A	3	3			4	4	4		N/A	3	4			4	4	4		N/A	3.6
	Modern Beehive Development	2	3	4	4	1	N/A	Not JALIMPS			3	3	4	3	3	4	4			2	4	4	4	3	N/A	Not JALIMPS			3.2
	Sheep Breed Improvement / Fattening	2	4	3	3	4	4	4			4	4	4	4	4	4	4			4	4	4	4	4	4	4			3.8
	FTC Farm Improvement																												-
	Artificial Insemination																												-
Natural Resource Management	Improved Fuel Saving Stove	3	4	3	3	4	4	1	3	4	4	4	4	4	4	4	4	4	4	4	4	4	3	4	4	3	4	4	3.7
	Gully Rehabilitation / Terracing	4	3	3	4	4		4	N/A		4	4	4	4	4		4	N/A		3	4	3	4	4		4	N/A		3.8
	Tree Planting	3			3	3				N/A	3			3	4				N/A	3			3	3				N/A	3.1
Livelihood Improvement	Inset Processing and Production Training	3									3									3									3.0
	Improved Heifer Introduction																												-
	Water Tank Construction			2		1			3				4		4			4				2		3			N/A		2.9
	Ewe Keeping Training for Women																												-
	Vocational Training on Carpentry																												-
	Business Skill Training for PLWHAs																												-
	Primary School Construction Support					4									4									4					4.0
	Poultry Production					1	4								4	4								3	4				3.3
	Women IGA																												-
	Vocational Training on Brick Production and Sewing																												-
	Business Shed Construction for Youth																												-
	Fish Pond Construction																												-
	School (Library) Support																												-
	Goat Fattening Training for Jobless Youth																												-

1 Not Good 1 to 2 Not so good 2 to 3 Good 3 to 4 Very good — 1 Not Good 1 to 2 Not so good 2 to 3 Good 3 to 4 Very good — 1 Low 1 to 2 Medium 2 to 3 High 3 to 4 Very high

Item which has some evaluation

Table 5.6.21 Summary of Final Participatory Evaluation at Eight Woredas

Component	Sub-component	Effectiveness								Validity								Sustainability								Region Average
		South Gondar Zone		North Wollo Zone			South Wollo Zone			South Gondar Zone		North Wollo Zone			South Wollo Zone			South Gondar Zone		North Wollo Zone			South Wollo Zone			
		Ebinate Woreda	Simada Woreda	Bugena Woreda	Gidan Woreda	Kobo Woreda	Mekedela Woreda	Legambo Woreda	Aregoba Woreda	Ebinate Woreda	Simada Woreda	Bugena Woreda	Gidan Woreda	Kobo Woreda	Mekedela Woreda	Legambo Woreda	Aregoba Woreda	Ebinate Woreda	Simada Woreda	Bugena Woreda	Gidan Woreda	Kobo Woreda	Mekedela Woreda	Legambo Woreda	Aregoba Woreda	
Agricultural Promotion	Crop Production	4	2	4	2.5	3	3	4	3	4	3	4	4	3	4	4	4	3	4	4	3.5	2	4	4	4	3.5
	Fruits Trees (Fruit production Campaign)	3	2.5	3	2.5			3	4	3	4	4	3			4	4	4	4	4	3			N/A	4	3.5
	Horticulture (Vegetable Production)	4						3		4						4		4						4		3.8
	Forage Development (Farmland)		2	2.5	2	4	3	4			4	4	4	4	4	4			4	4	3	3	3	4		3.5
	Forage Development (Hillside)	4	3			4	3	4		4	4			4	4	4		4	4			3	3	4		3.7
	Modern Beehive Development	3	3	4	3	2	Changed to Sheep	N/A		4	4	4	4	4	4	N/A		3	4	4	3.5	3	N/A	N/A		3.5
	Sheep Breed Improvement / Fattening	4	3	4	4	3	4	4		4	4	4	4	4	4	4		4	4	4	4	3	4	4		3.9
	FTC Farm Improvement						1		1						4		4						N/A		4	2.8
	Artificial Insemination					Still Pending								N/A								N/A				-
Natural Resource Management	Improved Fuel Saving Stove	3	4	4	3	4	4	4	3	3	4	4	4	4	4	4	4	3	4	4	4	3.5	4	4	4	3.8
	Natural Resource Management (Gully Rehabilitation / Terracing)	4	4	4	4	2		4		4	4	4	4	4		4		3	4	4	3	3		4		3.7
	Tree Planting	4			4	4	1			4			4	4	4			3			4	2	3			3.4
Livelihood Improvement	Inset Processing and Production Training	4								3								4								3.7
	Improved Heifer Introduction	3								4								3								3.3
	Water Tank Construction			1					4			4					4			4				4	3.5
	Ewe Keeping Training for Women				4								4								4					4.0
	Vocational Training on Carpentry				3								4								3					3.3
	Business Skill Training for PLWHAs				4								4								3					3.7
	Primary School Construction Support					4								4								4				4.0
	Poultry Production						4								4								4			4.0
	Women IGA					4								4								N/A				-
	Vocational Training on Brick Production and Sewing					4								4								3.5				3.8
	Business Shed Construction for Youth							4								4								4		4.0
	Fish Pond Construction						1								4								N/A			-
	School (Library) Support						4								4								4			4.0
	Goat Fattening Training for Jobless Youth								3								4								4	3.7

1 Not Good 1 to 2 Not so good 2 to 3 Good 3 to 4 Very good — 1 Not Good 1 to 2 Not so good 2 to 3 Good 3 to 4 Very good — 1 Low 1 to 2 Medium 2 to 3 High 3 to 4 Very high

Item which has some evaluation

The results were quite consistent and (1) **Sheep Breeding Improvement / Fattening**, (2) **Horticulture (Vegetable Production)**, and (3) **Forage Development (Hillside)** of Agricultural Promotion Component and (1) **Natural Resource Management (Gully Rehabilitation and Terracing)**, and (2) **Improved Fuel Saving Stove** of Natural Resource Management Component had higher scores.

Since the verification activities of Livelihood Improvement were varied and also many of them were implemented outside of the watersheds, it was difficult to compare in the same manner. At watershed-level workshops, **Primary School Construction Support** had higher scores. And at Woreda-level workshops, Training in **Inset Processing and Production, Ewe Keeping for Women, Business Skill for PLWHAs, Poultry Production, Brick Production and Sewing**, and Construction Support in **Primary School**, **Library** and **Business Shed** had higher scores.

Table 5.6.22 Summary of Final Participatory Evaluation by Zone

Component	Sub-component	Evaluation	South Gondar Zone Average	North Wollo Zone Average	South Wollo Zone Average	South Gondar Zone: Ebinate watershed	Ebinate Woreda	Simada watershed	Simada Woreda	North Wollo Zone: Bugena watershed	Bugena Woreda	Gidan watershed	Gidan Woreda	Kobo watershed	Kobo Woreda	South Wollo Zone: Mekedela watershed	Mekedela Woreda	Legambo watershed	Legambo Woreda	Aregoba watershed (lower)	Aregoba watershed (upper)	Aregoba Woreda
Agricultural Promotion	Crop Production	Effectiveness	3.1	3.3	3.1	4	4	2.5	2	3	4	4	2.5	3	3	3	3	3	4	3	3	3
		Validity	3.5	3.5	3.9	4	4	3	3	4	4	3	4	3	3	4	4	4	4	3	4	4
		Sustainability	3.4	3.6	3.9	4	3	2.5	4	4	4	4	3.5	4	2	4	4	4	4	3	4	4
	Fruits Trees (Fruit production Campaign)	Effectiveness	2.8	2.8	3.2	3	3	2.5	2.5		3	3	2.5			2		4	3	3	3	4
		Validity	3.3	3.3	3.7	3	3	3	4		4	3	3			4		4	4	3	3	4
		Sustainability	3.8	3.3	3.7	4	4	3	4		4	3	3			3		4	N/A	N/A	N/A	4
	Horticulture (Vegetable Production)	Effectiveness	4.0		3.5	4	4	4										4	3			
		Validity	3.7		4.0	3	4	4										4	4			
		Sustainability	3.7		4.0	3	4	4										4	4			
	Forage Development (Farmland)	Effectiveness	2.5	3.1	3.7			3	2		2.5	3	2	4	4		3	4	4		N/A	
		Validity	3.0	4.0	4.0			2	4		4	4	4	4	4		4	4	4		N/A	
		Sustainability	3.0	3.6	3.7			2	4		4	4	3	4	3		3	4	4		N/A	
	Forage Development (Hillside)	Effectiveness	3.3	4.0	3.5	3	4	3	3					4	4	3	3	4	4		N/A	
		Validity	3.5	4.0	4.0	3	4	3	4					4	4	4	4	4	4		N/A	
		Sustainability	3.5	3.5	3.8	3	3	4	4					4	3	4	3	4	4		N/A	
	Modern Beehive Development	Effectiveness	2.8	3.0		2	3	3	3	4	4	4	3	1	2	N/A	Changed to Sheep	Not JALIMPS	N/A			
		Validity	3.5	3.7	4.0	3	4	3	4	4	4	3	4	3	4	4	4	4	N/A			
		Sustainability	3.3	3.6		2	3	4	4	4	4	4	3.5	3	3	N/A	N/A	Not JALIMPS	N/A			
	Sheep Breed Improvement / Fattening	Effectiveness	3.3	3.5	4.0	2	4	4	3	3	4	3	4	4	3	4	4	4	4			
		Validity	4.0	4.0	4.0	4	4	4	4	4	4	4	4	4	4	4	4	4	4			
		Sustainability	4.0	3.8	4.0	4	4	4	4	4	4	4	4	4	3	4	4	4	4			
	FTC Farm Improvement	Effectiveness			1.0												1					1
		Validity			4.0												4					4
		Sustainability			4.0												N/A					4
	Artificial Insemination	Effectiveness													Still Pending							
		Validity													N/A							
		Sustainability													N/A							
Natural Resource Management	Improved Fuel Saving Stove	Effectiveness	3.5	3.5	3.3	3	3	4	4	3	4	3	3	4	4	4	4	1	4	3	4	3
		Validity	3.8	4.0	4.0	4	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
		Sustainability	3.8	3.8	3.9	4	3	4	4	4	4	3	4	4	3.5	4	4	3	4	4	4	4
	Natural Resource Management (Gully Rehabilitation / Terracing)	Effectiveness	3.8	3.5	4.0	4	4	3	4	3	4	4	4	4	2			4	4	N/A		
		Validity	4.0	4.0	4.0	4	4	4	4	4	4	4	4	4	4			4	4	N/A		
		Sustainability	3.5	3.5	4.0	3	3	4	4	3	4	4	3	4	3			4	4	N/A		
	Tree Planting	Effectiveness	3.5	3.5	1.0	3	4					3	4	3	4		1				N/A	
		Validity	3.5	3.8	4.0	3	4					3	4	4	4		4				N/A	
		Sustainability	3.0	3.0	3.0	3	3					3	4	3	2		3				N/A	

: Item which has some evaluation

Effectiveness: 1 :Not Good; 1 to 2 :Not so good; 2 to 3 :Good; 3 to 4 :Very good

Validity: 1 :Not Good; 1 to 2 :Not so good; 2 to 3 :Good; 3 to 4 :Very good

Sustainability: 1 :Low; 1 to 2 :Medium; 2 to 3 :High; 3 to 4 :Very high

Table 5.6.22 shows the comparison of final participatory evaluation for Agricultural Promotion and Natural Resource Management Components by zones. Validity and sustainability of **Sheep Breed Improvement / Fattening**, **Improved Fuel Saving Stove** and validity of **Natural Resource Management** were Very Good / Very High across the three zones. Validity & sustainability of **Crop Production** and **Horticulture** were Very Good / Very High in South Wollo Zone, and sustainability of **Fruits Trees**, and validity of **Modern Beehive Development** were Very Good / Very High in South Gonder Zone. Validity of **Forage Development (Farmland)**, **Forage Development (Hillside)** and **Tree Planting** was Very Good in North and South Wollo Zones.

CHAPTER 6 TECHNICAL TRANSFER

6.1 Plan of Technical Transfer

In April 2008, the Study Team prepared the plan of technical transfer. The plan was basically agreed upon with the FSCDPO in May 2008, and its contents are as follows.

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1. Basic Approach

JALIMPS (JICA/Amhara Livelihood Improvement Study, the formal study name is "The Development Study on the Improvement of Livelihood through Integrated Watershed Management in Amhara Region".) basically adopts a participatory approach for the formulation of development plans of the eight Woredas (Ebinate, Simada, Bugena, Gidan, Kobo, Aregoba, Mekedela and Legambo) designated in the Scope of Works agreed upon between the Government of Amhara National Regional State and JICA on 20 March 2007.

Important parts of technical transfer will be carried out through on-the-job training during a series of workshops, and, consequently, continuous participation of the counterpart personnel in these workshops is indispensable for effective technical transfer.

2. Major Roles of Counterparts by Level

Contents and methods of technical transfer should be different depending on the levels and roles of the target counterparts (C/P) – Regional, Woreda and Kebele offices. The roles by levels of counterpart personnel are briefly described as below.

(1) Regional Level:
It is assumed that the administrative services at regional level include watershed management, planning and prioritization of services for agriculture/rural development, monitoring and evaluation on the implementation of plans, and general management of these official services.

(2) Woreda Level:
Senior staff of Woreda offices are supposed to play roles of formulating plans and allocating resources of the whole Woreda and supervision of project implementation. Whereas, in the case of junior staff, they have major services more similar to extension activities since they are considered to regularly contact development agents positioned at Kebeles.

(3) Kebele Level:
Development agents stationed at Kebeles provide services and information to local people as frontline agents.

Taking these major roles into account, the methods and techniques to be transferred to these staffs through the Study are planned as indicated in the next section.

3. Technical Transfer for Regional Level Staff

As of March 2008, there is only one focal person at the regional level, namely Mr. Zewdu Awoke,

Food Security Coordination & Disaster Prevention Office. Together with application opportunities, the contents of techniques to be transferred and the methods are proposed as shown below.

Technical Transfer for Regional Level Staff

Contents of Technical Transfer	Methods (corresponding to the left number)	Opportunities for Application
1. Concept of formulating Woreda development plan 2. Method of prioritization for resource allocation 3. Analysis of satellite imageries and GIS utilization 4. Concept of watershed management	1 & 2. On-the-job training at analysis & planning workshops in 4 Woredas directly held by the Study team 3. On-the-job training at Regional office 4. Joint provision of guideline in technical manual	1&2. Analysis and planning workshops in the rest of 4 Woredas, 3. At the presentation in planning workshops in the rest of 4 Woredas, 4. At the explanation of verification studies

4. Technical Transfer for Woreda Level Staff

At the Woreda level, there are no counterpart personnel nominated since the selection of Woredas where the Study Team mainly manages workshops. After selecting four Woredas where the Study Team manages analysis and planning workshops, counterpart personnel shall be nominated. Together with application opportunities, the contents of techniques to be transferred and the methods are proposed as shown below.

Technical Transfer for Woreda Level Staff

Contents of Technical Transfer	Methods (corresponding to the left number)	Opportunities for Application
1. Method of formulation of Woreda development plan 2. Program/project formulation, prioritization for resource allocation 3. Project management, evaluation (ME) 4. Concept on watershed management & concrete work contents 5. Planning method of livelihood improvement projects	1&2. Through participation in Woreda analysis & planning workshops facilitated by the C/P or Study team, 3. Through management of verification studies (on-the job training during direct management by the Study team) 4. By referring to technical manual and by implementing verification studies 5. ditto	1&2. Since workshops are held in participatory way, the staff can themselves apply, 3. In the mid/late stages of verification studies, they lead the project. 4&5. Through implementing verification studies which the Study team directly manages, the staff of 4 Woredas receive technical transfer, and they work as trainers for development agents.

5. Technical Transfer for Kebele Level Staff

At the Kebele level, there are no development agents (DAs) nominated as counterpart personnel since the selection of Kebeles and Woredas where the Study Team mainly manages workshops. After selecting Kebeles and Woredas where the Study Team manages analysis and planning workshops, counterpart personnel shall be nominated. Together with application opportunities, the contents of techniques to be transferred and the methods are proposed as shown below.

Technical Transfer for Kebele Level Staff

Contents of Technical Transfer	Methods (corresponding to the left number)	Opportunities for Application
1. Planning method of works for watershed management 2. Planning method of livelihood improvement projects 3. Tools for PRA & problem analysis	1&2. By referring to technical manual and by implementing verification studies 3. On-the-job training through community workshops	1&2. Because they take charge of the implementation of verification studies, they can try transferred techniques. 3. Extension services after verification studies

6.2 An Issue Related to Technical Transfer: Frequent Staff Turnover

In the progress report (2) submitted in July 2009, high turnover rate of the Woreda experts was mentioned as a serious problem for the smooth implementation of verification project. In many Woredas, focal persons were changed because some focal persons got new job in other Woredas and, in many cases, they didn't do any handing over to the new focal persons. In the progress report (3) presented in March 2010, it was also reported that many DAs in the model watersheds were changed and/or transferred. Because there was no handover process to the new Woreda experts/DAs, many activities were often obstructed. The high turnover of the Woreda experts/DAs brought serious confusion for the implementation of verification activities, which in turn, resulted in delay of project implementation in many activities.

To improve the confusion caused by the frequent personnel changes, the Technical Committee (TC) was organized at each Woreda based on the discussions with the regional FSCDPO after the submission of progress report (2). The TC was supposed to be headed by the head of the WAO and other Woreda level experts (crop, livestock, irrigation and natural resource) were the members of the TC. However, even the TC didn't properly function in some Woredas as the midterm evaluation pointed out. Because the JICA's basic approach is based on technical cooperation to the governmental counterpart organization(s), the frequent turnover of staff interrupted on-the-job training during the Study period.

6.3 Progress of Technical Transfer

Followings are the major activities for technical transfer implemented during the study period.

6.3.1 Training in the Course of Verification Project

(1) Agriculture Subsector

During the period from September 2009 to March 2010, technology transfer activities for the field of agriculture were done for the following subjects: 1) training of Woreda staff and development agents, and 2) on-the-job training of development agents, Woreda experts and local people.

The technology transfer activities of the former were technology transfer on the formulation of verification activities for 2009/10 belg & 2010 meher season through the Technical Committee (TC) Meetings held in the entire target WAOs. The technology transfer activities of the latter were through the field guidance on land preparation & planting in belg season demonstration & trial plots (introduction of furrow irrigation) carried out in the Mekedela and Legambo target watersheds and technology transfer through field monitoring activities by the Study Team. The descriptions of such activities are as follows.

Table 6.3.1 Summary of Training Sessions for Agriculture

Activity	Target Group	Target Woreda & Timing
Formulation of verification activities for: - 2009 meher season activities - 2009/10 belg season activities - 2010 meher Season activities	DAs, TC members	In all target woredas 2009 meher activities: Feb./March, 2009 2009/10 belg activities: Oct., Nov., 2009 2010 meher activities: Jan/Feb, 2010
Joint Field Guidance by JICA/Sirinka ARC on row planting & field designing of verification/ demonstration & simple trial plots	DAs, woreda experts,	22 participants (Woreda experts and DAs from 5 Woredas); 27-28 Jun. 2009
Integrated Crop Management (ICM) Training by Sirinka ARC	DAs, woreda experts,	18 participants (Woreda experts from 5 Woredas); 30 Jun – 2 Jul 2009
Field guidance on land preparation & planting in demonstration & trial Plots	DAs, woreda experts, CRGs 1/	Simada, Ebinate, Bugena, Kobo; 2009 meher activities: June/July, 2009 Mekedela, Legambo: 2009/10 belg activities: Feb., 2010 Ebinate, Bugena: 2010 meher activities: June/July, 2010
Field guidance on fruit planting		Bugena: 2009 meher activities: July, 2009 Ebinate: 2010 meher activities: July, 2010
Technology transfer through field monitoring activities	DAs, woreda experts, CRGs 1/	All target woredas: 2009 meher season, 2009/10 belg season, 2010 meher season

1/: CRG – Community Research Group

(2) Natural Resource Management Subsector

In addition to the improved energy stove trainings in January and February 2009, there were two training sessions for Woreda staff and development agents in July 2009. Summary of the major trainings conducted are shown below.

Table 6.3.2 Summary of Training Sessions for Natural Resource Management (Jan. – Jul. 2009)

Date	Training Subject	Place	No. of Participants	Remarks
27-29 Jan. 2009	Energy Efficiency Improved Cooking Stoves	Dessie	16 participants (Woreda experts and Development Agents from 4 Woredas)	Legambo, Mekedela, Aregoba, Kobo
9-11 Feb. 2009	Energy Efficiency Improved Cooking Stoves	Bahir Dar	16 participants (Woreda experts and Development Agents from 4 Woredas)	Bugena, Gidan, Simada, Ebinate
25-26 Jun. 2009	Gabion Construction for Gully Rehabilitation	Bugena	12 participants (Woreda experts and Development Agents)	Bugena

After January 2009, the development agents in each model watershed were trained through individual on-the-job training in the course of verification project implementation. The following table summarizes on-the-job training and technical transfer from the Study Team to Development Agents.

Table 6.3.3 Summary of Training Sessions for DA (Jan. – Jul. 2009)

Date or month	Training Subject	Place	No. of Participants	Remarks
Jan – Jun. 2009	Measurement and Collection of Meteorological Data	Each FTC in 8 Watersheds	1- 2 Development Agent(s) of each FTC	Temperature, Humidity, rainfall at all 8 Woredas
26 Jun. 2009	Measurement of Stream Discharge	Assoye watershed	1 Woreda expert, 1 DA	Legambo Woreda
27 Jun. 2009	Micro basin Preparation for Seedlings	Bugena	2 Development Agents	Legambo, Mekedela, Aregoba, Kobo

The JICA Study Team transferred natural resource management technique to Woreda experts and DAs through planning, implementation and monitoring of the verification project in the target Woredas. For example, the JICA Study Team advised them how to select tree species for plantation in a watershed, how to treat tree seeds to improve the germination rate, and so on.

During the planning period the JICA Study Team summarized characteristics of useful tree species in Ethiopia and suggested suitable species in each watershed. This selection method was new for the Woredas and FTCs even though it is very important for forest management. In addition, the JICA Study Team gathered and summarized information about pretreatment of tree seeds and explained it to the Woreda experts and DAs. Furthermore, the method of temperature, humidity and rainfall observation was transferred to DAs with necessary equipments.

After the activities started, the JICA Study Team visited Woreda offices and FTCs several times to monitor and follow up the activities. During the field visits, the JICA Study Team advised them according to the findings. For example, some seedlings were planted in gully erosions before check dams had been filled with earth and sand. However, they should have waited the check dams to become full before the planting because if plant seedlings are planted in gully erosions without check dams, they will be flushed away when it rains.

In the FTCs, DAs have made meteorological observations since the verification project started. However, the observation stopped in some Woredas because the duties were not taken over to new DAs some when the DAs changed. Therefore, the JICA Study Team taught the technique again in some FTCs such as Kobo and Simada.

6.3.2 Measurement on Reservoir Sediment and Formulation of its Removal Plan

(1) Introduction

1) Background and Rationale

It can be said that deforestation in Amhara National Regional State spreads in wide area and ground surface cover by vegetation is quite limited so that severe erosion occurs here and there. Thus, a large scale water resource development project in the said area always has risk of sedimentation in a reservoir and it decreases life of a reservoir much more than expected. Tebi micro earth dam, in Mekedela Woreda was completed in early July of 2001, and then, it started reservoir impounding during meher rainy season (July - September). Total nine times of meher rainy season have passed up to March 2010, and sediment volume in the reservoir has piled up year by year.

The purpose of Tebi micro earth dam construction project is to supply irrigation water to downstream side farmland so that beneficiaries of this project have enjoyed with good profit from cash crop production under the project. However, piled up huge sediment volume in the reservoir has resulted decrease of available irrigation water in fact, then, an idea of removal of sediment is raised and requested from not only beneficiaries of the project, but also DAs of Tebi Kebele and officers of Mekedela Woreda. Then, technical assistance by the JICA Study Team was requested several times from Woreda agriculture office (WAO). There was no survey equipment in WAO and

regional office so that the Study Team prepared and left "terms of reference for sediment survey" in June 2009. In February 2010, it was informed that Woreda expert had a level survey equipment and it seemed to be enough for the sediment volume measurement.

2) Tebi Micro Earth Dam Project

Salient feature of Tebi micro earth dam project is as follows.

- ✓ Name of river basin: Abay sub-basin
- ✓ Catchment area: 8.77 km^2
- ✓ Dam height: 17.2m
- ✓ Dam crest length: 417m
- ✓ Reservoir area: 23ha (0.23km^2)
- ✓ Total reservoir capacity: 1,150,000m^3
- ✓ Estimated dead volume: 264,000m^3 (estimated by the Study Team)
- ✓ Estimated effective reservoir volume: 886,000m^3 (estimated by the Study Team)
- ✓ Full water level: WL. 2,779m amsl (above mean sea level)
- ✓ Estimated minimum operation level: WL. 2,768m amsl (estimated by the Study Team)
- ✓ Irrigable area in dry season: 135ha
- ✓ Supplemental irrigable area in rainy season: 180ha
- ✓ Households of beneficiaries: 617 households
- ✓ Total project implementation cost: 4,285,247 Birr
- ✓ Year of reservoir impounding: July 2001 (Gregorian calendar)

3) Subjects of Technical Transfer

The training consists of five (5) subjects as follows.

Table 6.3.4 Subjects of Trainings on Sediment Measurement and its Removal Plan

Subjects	Trainee	Purpose
Fixation of unknown factors	Expert of WAO	To presume figures from limited information and data, and its cross checking
Offset positioning	Expert of WAO	To plot survey points on the plan map with limited tools and equipment
Level survey	Expert of WAO	Practical training on level survey including equipment setting and adjustment
Removal plan formulation	Expert of WAO	To prepare construction (removal) plan from calculated volume
Erosion Rate Calculation	Expert of WAO	To know actual erosion rate in order to understand importance of vegetation cover

(2) Preparation Works

There was no final drawings in Mekedela Woreda office and no design reports as well. It could be referred preliminary design drawings without finalization. The Study Team had to adjust topographic conditions between before project implementation and plan map of preliminary design.

1) Fixation of Unknown Factors

In the plan map in preliminary design, two (2) dam axes were remained as alternatives. According to other drawings, dam crest length was indicated as the final version. Then, the Study Team explained to a Woreda water resource expert that the final dam axis could be fixed by measuring possible dam

length on each alternative as follows.

- ✓ To measure a dam axis length on a drawing of longitudinal section
- ✓ To measure a dam axis length on each dam axis alternative on the plan map, the length should be distance between both abutments of EL. 2781.4m according to a drawing of longitudinal section.
- ✓ To compare both result of measurement on the drawing and the map.
- ✓ To select one dam axis on the plan map.
- ✓ To check longitudinal undulation of the selected dam axis.

2) Offset target and temporary bench mark

Before starting survey, installation of offset targets and temporary bench marks were required. The Study Team requested to the Woreda expert to prepare three (3) white flags with 2m length poles, and 30 wooden pegs for temporary bench marks. Offset targets were planned to be installed along dam crest, at the both sides of dam crest edges and at the intermediate location of both edge flags. The purpose of installation of offset target is to plot survey point on the plan map by applying triangular survey method. Temporary bench marks were installed before starting survey in order to fix survey point during survey period.

(3) Survey on Sediment

Survey on sediment was conducted on 20th and 21st February 2010 total 2 days. Survey points were plotted on the plan map by using compass with measuring the flags' direction (offset positioning). Water level on 20th February 2010 was used to fix elevation of measuring points, which water level elevation was measured by comparison between spillway crest level (design is EL. 2,779m) and present water level on the day (2,775.84m amsl), which is 3.16m below the spillway crest level. Total 12 lines were surveyed around the reservoir. All practices were done with the Woreda expert and a DA, which the Study Team explained them theoretical and technical procedures and technique.

At the beginning part of survey, the Study Team used the level survey equipment and then, Woreda expert took the place and did it by himself. After the expert measurement, the Study Team checked and confirmed it. The Study Team was required sometimes to readjust equipment and explained procedures again and again in order to let the expert complete surveying. The DA was in charge of a level staff holder during survey, which also required some techniques. Obtained survey results were processed and summarized only by the Study Team because there was not enough time to explain all processing procedures to the expert.

(4) Volume Estimation

Sediment volume was estimated by two methods, one was by using 9 numbers of cross-section and to calculate area of sediment on each cross-section. The other one is to estimate present reservoir water volume and to balance between initial reservoir volume and the present one. Both results showed nearly the same figures so that total sediment volume was estimated about 270,000m^3 as follows.

Table 6.3.5 Estimated Sediment Volume by Different Methods and its Adopted Volume

Calculation method for Sediment	Estimated sedimentation volume
Area calculation of sediment at each cross-section	273,958 m^3
Comparison of Reservoir volume before and after impounding	267,656 m^3
Adopted sediment volume	270,000 m^3 (average is 270,807m^3)

270,000m^3 is estimated total volume of sediment but it is not able to remove all of them because some of sediment exists in lower place than minimum operation level, which there exists water even at the end of dry season. Thus, it is necessary to estimate sediment volume above the minimum operation level which may be able to remove during dry season. Calculated sediment volume above minimum operation level is about 190,000m^3.

Table 6.3.6 Probable Sediment Removal Volume above the Minimum Operation Level

Total sediment volume	270,000 m^3
Sediment beneath minimum operation level	80,000 m^3
Sediment above minimum operation level (for removal)	190,000 m^3

(5) Removal Plan

For sediment removal plan, excavator and dump truck are considered to be common construction machineries in Ethiopia, which information was obtained from Amhara Regional Road Authority and it was also explained to the Woreda expert. Considering working space and road condition in and around the reservoir, the followings are obtained as suitable machinery combination for this work.

Table 6.3.7 Practical Numbers of Excavators around the reservoir for sediment removal

Year(s) for removal	Available working days	Required No. of excavator	Remarks
1 year	90 days	7 units	Too much units in narrow area
2 years	180 days	4 units	Too much units in narrow area
3 years	270 days	3 units	It may be possible

Table 6.3.8 Practical numbers of Dump Trucks for Sediment Transportation

Class of Dump Truck	Required Numbers of Dump Truck	Remarks
10 tons	10 units	It may be appropriate within 3 km
20 tons	5 units	It may be too few for this work

Sediment removal project implementation period and workable days were discussed and finalized together with the Woreda expert through some trials. Information about road condition between the reservoir area and disposal area was still not sure, however, the Woreda expert explained to the Study Team that it can be managed in the sediment removal project. The followings are feature of the formulated project.

- ✓ Project implementation period: 3 years from 2011
- ✓ Target removal volume including coming sedimentation: 280,000m^3 = 190,000m^3 + 30,000m^3 * 3years

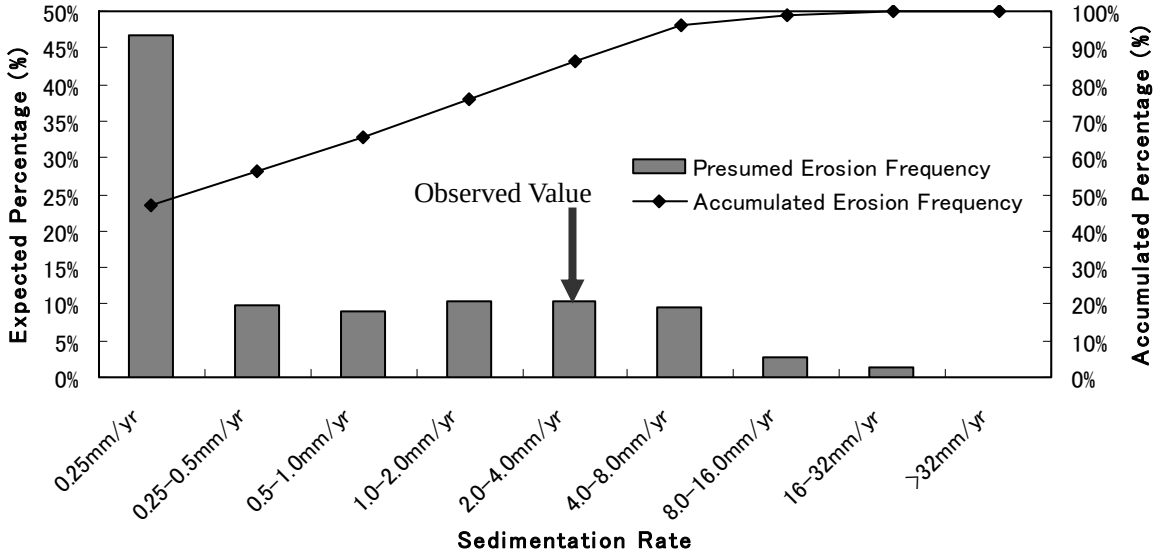
- ✓ Workable month for each year: End of February – End of May
- ✓ Working days (machinery operation) per year: 78 days/year
- ✓ Machinery renting days: 103 – 120 days/year
- ✓ Required excavator: 0.9m^3 class 3 units/year
- ✓ Required dozer: 20tons class 3 units/year
- ✓ Required dump truck: 10tons class 10 units/year

(6) Cost Estimation

According to the results of sediment removal plan, the Woreda expert is now processing cost estimation. The estimated cost will be submitted to an INGO (for example; Save the Children) and Woreda may be able to obtain fund for removal.

(7) Erosion Rate

During 9 years reservoir operation, 270,000m^3 of sediment was piled up in the reservoir, it means sedimentation rate 30,000m^3 /year in 8.77km^2 (8,770,000m^2) of catchment area. Erosion rate of 3.42mm/year/ is quite high rate comparing with simulation results of the previous study[26]. In the said study, about 80% of erosion rate shows less value than the observed value in Tebi micro earth dam reservoir. Tebi watershed is not a particular place of land cover and vegetation so that actual erosion rate is quite higher than expected. Showing observed erosion rate and comparing it with the previous study results, it helped the expert to understand severe erosion increase.



(Processed by the Study Team from data of Woody Biomass Inventory Survey and Strategic Planning Project, Phase II, MOA, June 2004)

Figure 6.3.1 Expected Erosion Frequency and Percentage in Mekedela Woreda, and its Accumulated Values

[26] Final progress report, woody biomass inventory and strategic planning project, Phase II, Ministry of Agriculture, Federal Democratic Republic of Ethiopia, June 2004

CHAPTER 7 CONCLUSIONS AND RECOMMENDATIONS

7.1 Conclusions

The Woreda development plans for the 8 target Woredas were formulated in the course of the Study through the active participation of Woreda officers from various sector offices, who understood the current situations of the Woreda concerned. Furthermore, the draft versions were elaborated between 2008 and 2009 after the problem analyses at watershed/Woreda/regional levels workshops and they were reviewed in 2010 after the completion of the verification project. Hence, it can be said as comprehensive Woreda development plans containing various development approaches/strategies/ programs based on the current situation analyses. Therefore the 8 target Woredas should go into actions: (1) to prioritize/merge/coordinate these approaches/strategies/programs and (2) to mitigate the core problem, "the life of people in the Woreda is difficult." according to the development approaches/ strategies/programs described in the plans. In addition, the regional government should expand and promote the participatory planning approach adopted in the Study to other food insecure Woredas because it seemed to be effective and useful for planning.

Through the implementation of many verification project activities from early 2009 to late 2010, many activities which were effective in food security, appropriate watershed management and rural development were identified and they were highly evaluated by zone/Woreda staff as well as local people. On the other hand, many issues on technical/organizational/social matters were also revealed. The 8 target Woredas should promote and expand the highly evaluated activities together with solving these issues. In the future, the regional government should diffuse these good practices to other food insecure Woredas taking into account of natural/socio-economic situations there.

7.2 Recommendations

7.2.1 For the ANRS

(1) Some Important Points for the Formulation of Woreda Development Plans

In general, most Woredas have sector-wise plans such as health, education and agriculture but there seems to be no comprehensive plans which cover all the sectors. During the Study period, a participatory approach that was based on a series of discussions with various participants in the workshops was adopted for the Woreda development plan formulation. The method is a little bit time consuming but it enables to reflect opinions of various stakeholders and to include practical countermeasures to the issues occurred at the field levels (demand-driven approach). Together with the administrative topics (supply-driven approach), the plans could contain many items; hence, the method has more merits than demerits. Although the method used in the course of the Study is not the only method for planning, it is important for the Woreda development plan formulation to incorporate devises to reflect opinions of stakeholders as much as possible in order to make more practical development plans based on the actual situations.

(2) Continuation of Good Practices

Through the verification projects during the Study period, many activities were assessed as highly

effective by many officers and it is expected that these good activities are being continuously practiced and expand to other areas. Followings are possible key factors for continuation of the good practices.

- For the long-term benefits of the activity on public land of natural resource management component (such as afforestation and water/soil conservation structures), appointment of persons in charge for operation and maintenance is important. In addition, securing minimum wages for them will make the benefit period longer.
- Activities with (1) quickly effective, (2) visible benefits, (3) less inputs from outside, and (4) less expertise seem to have high potentials to extend and/or continue for a long time. (e.g. Fuel-saving stove extension) These points could be factors for activity selection criteria.
- If locally available resources can be utilized (e.g. block production on riverbed in Kobo), reduction of production cost is possible, which in turn, contributes continuation of the activity.
- Roof rainwater harvesting facilities could display the utilization of untapped resources, but some technical follow-up could be helpful for the activity continuation.
- In case that experienced Development Agents were there, agricultural promotion activities tended to have better results. This may indicate that the abundance of experiences as Development Agent is a vital element.

There are three possible budget sources for the continuation of good practices as shown below.

- Allocation of new budget resource from the Ethiopian government
- Acquirement of new budget resource from donor organizations
- Reorganizing the current budget resource

The first option seems to be very difficult because of a tight financial situation of the federal government. The second option looks good but it needs (i) to convince the possible donor organizations to have strong initiatives for the expansion/implementation of the good practices, and (ii) to get official approval from the possible donor organizations. Although it may bring some budget, it takes a certain period of time to sort out all the processes.

The last option utilizes the existing budget and it brings quick response if it goes well. In the 8 target Woredas, many Woreda officials know that which activities were highly evaluated and effective because they attended the terminal evalutation workshops. If many of them agree to expand some good practices and formal procedures for reorganization of budget allocation are done, it may be possible to put into the good practices under the current budget for the expansion/implementation. Because the verification project activities, which were assessed as good such as sheep breed improvement, sheep fattening, improved stove, gully rehabilitation, soil and water conservation structures, are similar to ongoing activities in the target Woredas, it may have less difficulty to redirect certain amount of current budget for the good practices expansion. Overall, the last option seems to be practical, but it doesn’t bring a large scale budget since it is still within the present budget amount.

(3) Linking Several Components

Because of the expertise of Development Agents and the Study Team members, verification project activities were classified into three components, namely, agricultural promotion (AP), natural resource management (NRM) and livelihood improvement (LI). However, in the real livelihoods in villages they are combined together and intertwined. This means that these activities should be linked and implemented in concert. Based on the experiences of the verification projects, success of linking several components largely depended upon the field conditions, activity contents, and officers in charge as shown below.

- Linking AP and NRM: Forage development on the sloping land should be implemented together with soil/water conservation structure introduction to mitigate surface soil erosion. Officers/development agents covering both topics should work jointly.
- Linking LI and AP: For the livelihood improvement activities related to livestock (e.g. Ewe keeping training for women and improved heifer introduction for HIV/AIDS association support), technical assistance for livestock management should be provided to have synergetic effects. The offices concerned (WAO, Woreda Women Office and Woreda HIV/AIDS Directorate) should coordinate their activities.
- Linking NRM and LI: In the long run, afforestation increases woody biomass, which in turn, will mitigate women/children labor burden for firewood collection. During the training sessions on fuel-saving stoves, the importance of afforestation and forest protection should be extended to rural women and children.

In addition, linking several components with multi-propose facilities is another option. For instance, water source development improves drinking and domestic water conditions directly, but it also contributes to stabilize agricultural production through irrigation, to feed animals and to expand tree nurseries. Hence, the water source could function as a core of the three components. In another case, if vegetable seedlings could be produced within the tree nurseries, it could increase farm produce and income as well as have effects on nutritional improvement through kitchen garden.

Because the WAO and development agents can cover issues on both agriculture and natural resource, the linking of the AP and NRM components seems to be easier. However, some activities of the LI component (e.g. vocational training, education, etc.) are out of WAO coverage and joint works with other sector offices are indispensable. For the smooth linking with other sector offices, it is very influential to have acknowledgements and instructions of Woreda Administrator and/or region/zone officials for joint works.

(4) Introduction of Development Agent in charge of Home Economics

At the moment, there are no development agents who cover home economics in Ethiopia. Therefore many activities of the LI component were conducted with various sector offices. Considering the past experiences of Japan, women extension workers in charge of home economics have had substantial roles for the improvement of rural livelihoods. It is desirable to investigate the possibilities of

introduction/training of female development agents in charge of home economics.

(5) Organizational Structure for Better Project Implementation

In Ethiopia, organizational structure of local administration is generally sector-wise. For instance, there are offices in a line from the Federal Ministry of Education to Woreda Education Office. Accordingly the coordination between other sector offices is not easy. During the Study period, the Study Team requested the Woreda Administrators in the 8 Woredas to take initiatives for the LI component and the Administrator in Mekedela Woreda contributed to have a joint work with Mekedela Preparatory and Secondary School and Woreda Water Office for hand dug well construction. In Bugena and Aregoba Woredas, the Administrators took leadership for the operation and maintenance of rainwater harvesting facilities.

Normally, a Woreda Administrator does not belong to any sector offices but is very influential with all the administrative services and development interventions within the Woreda as a responsible person. In the future, it is better to have acknowledgements by Woreda Administrator on any multi-sector development interventions for the establishment of competent organizational structure in project implementation.

If Woreda Coordination Committee chaired by the Woreda Administrator is organized and held periodically (e.g. once in two months), it is useful to establish an organizational structure that allows more stakeholders and Woreda staff to monitor the implementation of various projects. The periodical committee meetings will accelerate linking several components as well as monitoring of each project. Hence, the good projects will be expanded and countermeasures will be drawn for the stagnating projects.

During the Study period, verification projects had been implemented together with Woreda officials and DAs as well as local people. It is recommendable to continue the similar implementation structure, which local people participate various activities according to the initiatives/guidances of the Woreda officials and DAs. At the activity planning stage, it is most important to incorporate opinions and needs of the people into the plan. During the implementation stage, active participation of the Woreda officials and DAs is indispensable because administrative works such as procurement/distribution of materials and provision of technical advices/guidances are surely included. In particular, it is desirable that the DAs, who station in the Kebele and know the local people and the actual situation of the watershed, take initiatives. However, it also observed that many of these frontline workers don't have enough technical knowledge; hence, capacity development for them is urgently necessary.

(6) Much emphasis on Qualitative Aspects

In general, it seems that many natural resource management programs/projects by the government put much emphasis on quantitative targets rather than qualitative ones. For instance, length of hillside terraces (km) and volume of check dam (m^3) were mentioned as public work achievements in the PSNP report. However, the Study Team considers that much emphasis should be put on the qualitative aspects. Because, based on the field survey in the 8 model watersheds, the construction quality of

some of the soil and water conservation structures was not regarded as good, it was expected that those structures didn't function properly or lose their functions very soon.

Therefore it is important to improve the construction level of the structures; hence, capacity development of construction site managers is indispensable. In many cases, the DAs and Kebele/Woreda staff work for supervision of these construction activities, it urgently needs to strengthen their technical knowledge. Since the Regional FSCDPO recognized the importance of expertise, the Public Works Focal Unit (PWFU) was recently established at the regional level. In collaboration with the PWFU, technical capacity development should be promoted for the staff working in the field level.

In addition, maintenance and repair activities for these structures should be introduced and promoted. Many structures were seen as degraded but it seemed that no maintaining activities had been done for these structures. With the regular maintenance and repair works, the structures easily recover their functions and become effective for a longer period.

(7) Logistics and Stores of Food for Regional Food Security

In the western part of ANRS, there are many food secure Woredas. If it is possible to transport enough volume of the excess food produced in these Woredas on time, less serious food shortage occurs in the food insecure Woredas located in the eastern part of ANRS.

For the establishment of food transportation system, well-functioned logistics is indispensable. In general, it contains the following four points.

- Marketing facilities development which enables to distribute agricultural product smoothly from food producing areas to food demanding areas,
- Development of road networks between the producing/demanding areas, and major towns
- Marketing facilities development which connects farm produce depots and local/town markets, and
- Wholesale market facilities development which connects retailers and consumers.

Since these points are inter-related, an integrated approach is important. In addition, institutional development for operation and maintenance of the marketing facilities developed is vital for establishment of effective marketing system.

Storing capacity development is also crucial. There are two approaches for storing, namely, a government-led approach (Government manages food stores by an administration area.) and a private sector-led approach (Private sector bears a storing role as food stock while government controls food distribution based on the information of stores including kind, volume and location of food stock, if necessary.). In consideration of the infrastructure development progress, it needs to examine which approach is appropriate in ANRS.

(8) High Turnover of Local Governmental Staff

It is true that many Development Agents and Woreda staff try to change their jobs to seek better living conditions in towns and urban areas. This might result from the fact that the living conditions in rural Kebeles/Woredas were still very primitive. (There are many Kebeles where neither electricity nor telephones are available in the Study Area.) The Study had started since March 2008 and only 6 of 51 staff (12%) were the same and still remained working in the FTC and target Woredas as of October 2009. Thus many DAs and Woreda staff who are frontline workers of local government don't have any incentives to continue working there and this made the Study Team difficult to conduct the effective technical cooperation with the local governmental staff in the watershed/Woredas. In the course of the Study, many DAs and/or Woreda staff had been changed but no handover works had always been done by them and many data and documents on the verification projects had been taken by the predecessors.

In addition, some staff even at Zone and Region level offices had tried to change their jobs (They tried to be hired by any projects implemented by donor/NGOs since they tend to be paid more than now.); hence, it is an urgent matter to take appropriate measures (e.g, introduction of remote allowance, provision of staff houses) to stop outflow of human resources, otherwise no continuous activities cannot be done for the rural development in ANRS.

7.2.2 For the Donor Organizations

(1) Collaboration with Other Donors for the Target Field

In ANRS, there are various bilateral and multilateral donors working in the field of agricultural/rural development and natural resource/watershed management. Based on the data obtained from BoFED, there are five development interventions for the agricultural/rural development and seven development interventions for the natural resource/watershed management as shown below. (See Appendix G for details.) These donors are composed of four bilateral ones and five multilateral ones.

Table 7.2.1 Donors Working for Agricultural/Rural Development and Natural Resource/Watershed Management in ANRS

Organization	Agricultural/ Rural Development	Natural Resource/ Watershed Management
1 Austrian Embassy Development Cooperation	✓	
2 Canadian International Development Agency (CIDA)		✓
3 German Technical Cooperation (GTZ)		✓
4 Swedish International Development Agency	✓	✓
5 United Nations Development Program (UNDP)		✓
6 Food and Agricultural Organization (FAO)	✓	✓
7 African Development Bank		
7.1 Agricultural Sector Support Program		✓
8 World Bank (WB)		
8.1 Tana Beles Integrated Water Resource Development Project		✓
8.2 Ethiopia Nile Irrigation and Drainage Project	✓	
9 International Fund for Agricultural Development (IFAD)		
9.1 Participatory Small Irrigation Development Project	✓	

To have more fruitful results in the field of agricultural/rural development and natural resource/ watershed management, it needs to share the information/lessons learned from these similar activities. In addition, coordination of the donor interventions in terms of both spatial distribution as well as activity contents and collaborative works in various activities by different organizations are very helpful to improve the effectiveness of each aid intervention.

(2) Possible Development Intervention

For the implementation of development interventions, there are many resources lacking in the Study Area. In particular, the means of transportation (motorbikes and vehicles) for staff of all the levels of region/zone/Woreda is extremely in shortage. During the Study period, it was quite often that the Study Team needed to take Woreda staff and Development Agents to the model watersheds by the vehicles of the Study Team. It is truly obvious that road network development is an urgent issue, but the lack of transportation means seriously hinders the efficient implementation of development activities at a field level at the moment; hence, it makes the filed monitoring almost impossible. Securing transportation means for the smooth implementation of development activities in remote areas could be a possible assistance plan. The vehicles/motorbikes provided for field activities will be properly maintained if the maintenance costs are available because there are vehicle workshops even in rural Woredas.

CHAPTER 8 FUTURE PROJECT PROPOSALS

For the last three years from March 2008 to December 2010, the Study Team had conducted the various activities including situation analysis of the 64 food insecure Woredas, field surveys of the model watersheds in the 8 target Woredas, planning of the Woreda Development plans as well as implementation of diverse verification projects. Through these activities, the Study Team learned diverse things, understood the background of difficult issues, worked with the Ethiopian counterparts at the project sites and experienced various social and natural environments. Based on the knowledge gained through the Study, future project proposals are outlined in this chapter by three subsectors, namely agricultural promotion, natural resource management and livelihood improvement.

8.1 Agricultural Promotion Subsector

(1) Integrated Agricultural Promotion Project in the Food Insecure Woredas in Amhara Region

Table 8.1.1 Integrated Agricultural Promotion Project in the Food Insecure Woredas in Amhara Region

1. Project Title	
Integrated Agricultural Promotion Project in the Food Insecure Woredas in Amhara Region	
2. Outline of the Cooperation	
(1) Outline of the project objective and output *The objective of the Project is to promote agricultural development in the Project Area through the introduction of the integrated agricultural promotion activities in accordance with "Approaches for Formulation & Implementation of Integrated Agricultural Promotion Activities (APAs) in the Food Insecure Woredas in Amhara Region", proposed in the technical guideline prepared under the Development Study on the Improvement of Livelihood through Integrated Watershed Management in Amhara Region of JICA (the Study).*	
(2) Period of Cooperation *5 years from 2012 to 2017*	(3) Total amount of cooperation *N/A*
(4) Implementing Agency of Partner Country *Bureau of Agriculture and Rural Development of Amhara Region (BoARD)*	(5) Cooperation Agency *N/A*
(6) Project Area and Target Group i) Project Area: *Three (3) selected food insecure woredas in Amhara Region* ii) Target Group: *WAOs, DAs and beneficiary farmers of agricultural promotion activities (APAs)*	
3. Current Situation and Problems	
The existence of a number of food insecure woredas is one of the key development issues in Amhara Region. Since the agriculture is the primary economic activity and the livelihoods of the people in the woredas rely on agricultural activities, the only conceivable development direction to mitigate food insecure status in most of the woredas is agricultural promotion. *Under the JICA Study, the approaches for the formulation of integrated agricultural promotion plan*	

were proposed. The approaches were employed and varieties of agricultural promotion activities were satisfactory implemented under the Verification Project of the Study in 2 years from 2009 to 2010.

4. Framework of the Cooperation

(1) Objective of the Cooperation (Outcomes)

i) Objective to be achieved at the end of the cooperation (Project Purpose)

Integrated agricultural promotion activities (APs) are successfully adopted in the target woredas.

ii) Objective expected to be achieved after the end of the cooperation (Overall Goal)

Integrated agricultural promotion activities (APAs) are adopted in the food insecure woredas in Amhara Region.

(2) Project Descriptions

The Project shall be is implemented in 5 years as a technical cooperation project. The project major components include: i) establishment of the Project Implementation Units at regional and woreda level, ii) establishment of approaches for the formulation of agricultural promotion activities, iii) formulation of overall and annual plan for promotion activities (APAs), iv) implementation of integrated APAs and v) scale-up and dissemination of integrated APAs to other Kebeles and woredas.

(3) Outputs and Activities

i) Output: Institutions for the project implementation are established.

Activities: 1) *To establish Standing Steering Committee & Task Force Team.*
2) *To establishment of Regional Project Implementation Unit.*

ii) Output: Approaches for formulation of integrated agricultural promotion activities (APAs) are established.

Activities: 1) *To select target woredas*
2) *T*o establish Woreda Project Implementation Units
2) *To implement capacity building of regional & woreda project staff*
3) *To establish approaches for integrated agricultural promotion*

iii) Output: Plans for integrated agricultural promotion activities (APAs) are formulated.

Activities: 1) *To select target Kebeles through the baseline survey*
2) *To formulate overall & annual work plan for integrated APAs in the target Kebeles through participatory approaches*

iv) Output: Implementation of integrated agricultural promotion activities (APAs) in target Kebeles.

Activities: 1) *To select target groups & formulate farmers groups for individual activities*
2) *Provision of technical guidance to target groups*
3) *To implement planned agricultural promotion activities*
4) *To monitor & supervise the project activities.*

5) *To evaluate performances/result/impacts of the project activities*

6) *To review overall work plan & formulate updated annual work plan*

v) Output: Integrated agricultural promotion activities are disseminated to other Kebeles & Woredas.

Activities: 1) *To prepare technical manuals & guidelines for integrated APAs*

2) *Implementation of scale-upped selected promotion activities*

3) *To train WAO staff & DAs in other woredas*

4) *To provide field guidance in other woredas*

(4) Inputs

i) Donor side

- Dispatch of experts

  Long-term: 4 (chief adviser/agronomist, livestock, extension, coordinator/training)

  Short-term: as required (fruit production, animal breed improvement, forage production etc.)
- Establishment of offices for Project Implementation Units

  Vehicle, training equipment, office equipment & facilities, etc.
- Acceptance of trainees

  About 2 persons a year

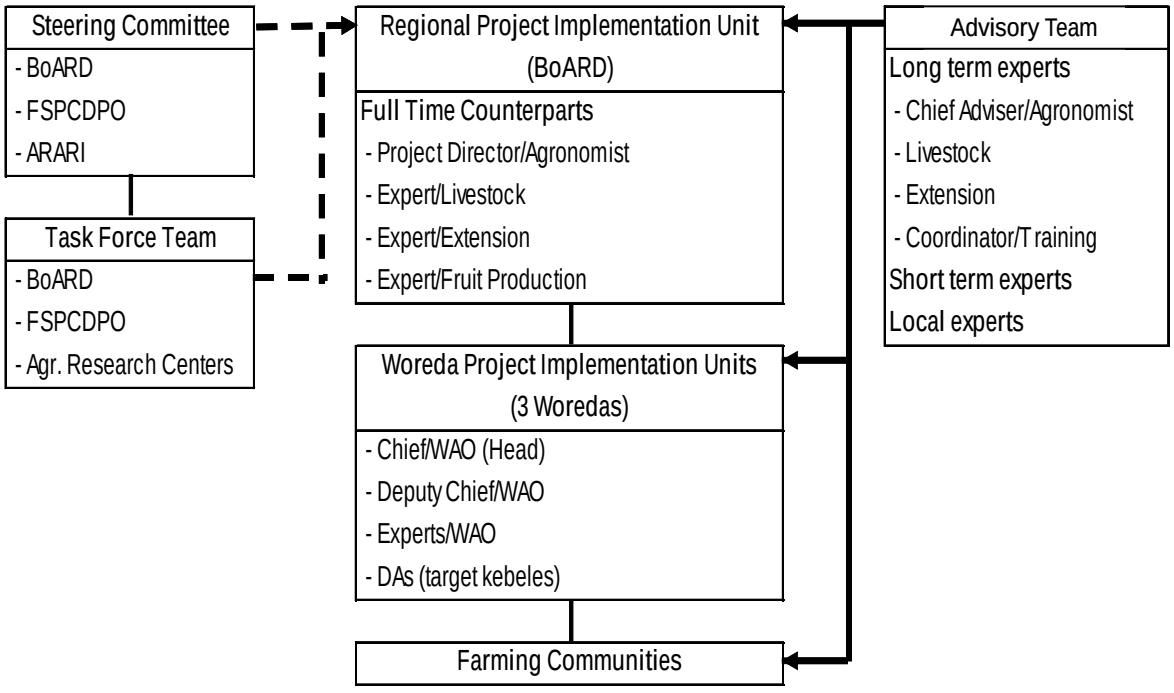
ii) Partner Country's side

- Counterpart personnel expenses (4 persons)
- Establishment of offices for Project Implementation Units

  Office spaces for the Units
- Project activity expenses

(5) Project Organization

The proposed project organization (tentative) is as follows;



5. Relevance
The mitigation of food secure status in the region is a primary development issue in the Amhara Region as stated in the regional economic development plan, "The 3rd Five Year Plan of Amhara Region for Development & Establishment of Democratic System (2006 - 2010), Bureau of Finance & Economic Development, Aug., 2006" and in the BoARD strategic plan, "(Draft) Strategic Plan (2011 – 2015)". The overall goal of the Project is surely consistent with the regional development plans. *Under the Verification Project of the JICA Study, the proposed approaches for formulation & implementation of agricultural promotion activities were introduced satisfactory and the adoptability of the approaches were verified although further refinement of the approaches are assessed essential. The present Project is the extensive introduction of the verified approaches under the technical cooperation project.*

(2) Temperate Fruit Development Project in Ethiopian Highlands

Table 8.1.2 Temperate Fruit Development Project in Ethiopian Highlands

1. Project Title	
Temperate Fruit Development Project in Ethiopian Highlands	
2. Outline of the Cooperation	
(1) Outline of the project objective and output *The Project aims at promoting temperate fruits production in the highland areas by addressing the development constraints in an integrated manner and through: i) establishment of model temperate fruit nurseries for production of quality fruit planting materials (seedlings, scions & root stocks) , ii) distribution of quality fruit seedlings produced in the model nurseries to farming communities and ii) promotion of temperate fruit production supported by development and extension of improved and sustainable fruit production technologies.*	
(2) Period of Cooperation *Phase I: 5 years from 2012 to 2017* *Phase II: 5 years from 2017 to 2022*	(3) Total amount of cooperation *N/A*
(4) Implementing Agency of Partner Country *Holetta Agricultural Research Center (HARC), Ethiopian Institute of Agricultural Research (EIAR)*	(5) Cooperation Agency *N/A*
(6) Project Area and Target Group i) Project Area: *The target areas of the Project are the highland areas (high altitude areas over ± 2,400m a.m.s.l.) in Amhara, Oromiya and SPNN Region. The candidate sites for the model fruit nursery development are: Central Nursery at Holetta Agricultural Research Center (HARC), 2 Regional Model Nurseries in the Amhara and Oromiya Region and 6 Woreda Model Nurseries in the 1st phase. In the 2nd phase, 1 Regional Nursery in SPNN Region and 3 Woreda*	

Model Nurseries will be opened.

ii) Target Group: *WAOs, DAs and beneficiary farmers groups (Fruit Growers Groups/FGGs)*

3. Current Situation and Problems

Ethiopia is rich in biodiversity and agricultural production systems. The wide range of agro-ecological zones enables the country to host varieties of plant species and the country had domesticated several plant species which are now an economic base of its people. However, population growth and environmental degradation in the past is endangering traditional farming systems and vast natural resources bases are becoming devoid of vegetation.

In the Ethiopian highlands, the target areas of the Project, the population pressure will continue to present negative impact on the natural resources bases and further degradation of the environment will be resulted. Further, most of the woredas situated in highland areas, especially those in Amhara Region, are defined as food insecure woredas. The highland areas are endowed with enormous potential and opportunities for the temperate fruit development. The temperate fruits (and perennial crops) development will provide promising opportunities for mitigating such situations and opportunities for sustainable management of land resources, sustainable development of agriculture and sustainable improvement of livelihood of the people in the areas.

The temperate fruit development in the highland areas is still at an initial stage in spite of its development potential. Common temperate fruit produced in the country is apple and apple production is mostly restricted to the homestead in areas such as Chencha and neighboring districts in Gamo and Gofa zones, in Gurage Zone of SNNPRS, in North Shewa Zone of Oromia region; several woredas in the Amhara region. Fruit production and planting material propagation are becoming important businesses at Chencha and Agena areas. In these places temperate fruit development is expanding at faster rate.

One of the reasons for the limited production of temperate fruits is attributed to unavailability of quality seedlings. In the country, temperate fruits seedlings are produced by both the public and private sectors. While current production levels of seedlings are far lower than the demand.

To materialize the enormous potential for temperate fruits development in the highland areas, however, existing crucial constraints for the development should be addressed in an integrated manner. Temperate fruits research started at Holetta Research Center four decade ago and the center has been engaged in introducing of promising planting materials and testing their adaptability. Several apple and other temperate fruit cultivars have been found to be adapted to different agro-climatic conditions in the country. From their experiences, the followings are identified to be crucial major problems of the sector.

- *Lack of nurseries which could serve as a primary source of quality true to type planting materials,*
- *Poor fruit cultivation/production technologies & poor management practices of orchards,*
- *Limited knowledge on planting materials, seedling production & nursery management,*
- *Pests & diseases and expansion of areas infested by woolly apple aphid (WAA),*

- *Limited availability of rootstocks & scions suitable for different agro-ecological conditions,*
- *Compatibility of rootstock and scions,*
- *Incidences of imported plant materials with diseases,*
- *Inadequate planting materials which are affecting the quality of fruit, and*
- *Week research capacity & lack of technology development in the sector.*

The Project aims at promotion of temperate fruits production in the highland areas by addressing the said constraints in an integrated manner.

4. Framework of the Cooperation

(1) Objective of the Cooperation (Outcomes)

i) Objective to be achieved at the end of the cooperation (Project Purpose)

Quality temperate fruit seedlings are produced and planted in the project target areas.

ii) Objective expected to be achieved after the end of the cooperation (Overall Goal)

Temperate fruits production is promoted widely in the project target areas.

(2) Project Descriptions

The Project shall be implemented in two phases. The 1st phase is for the period of 5 years and will be focused on the establishment of model fruit nurseries, technology development and capacity building. The 2nd phase is also for the period of 5 years and the expansion of the envisaged activities on the capacity building and promotion of temperate fruits production in the target areas of the Project as well as the establishment of additional model nurseries are aimed at.

The project major activities in the 1st phase include: i) base line & inventory survey to assess fruit production & development in the country, ii) establishment of project central & model nurseries, iii) production & distribution of quality seedlings, scions and root stocks by the central & model nurseries and iv) technology development , v) capacity building of WAO experts, DAs and farming communities.

(3) Outputs and Activities

i) Output: Institutional strengthening for the project implementation is performed.
Activities: 1) *To establish Coordination Committee & Working Group.*
2) *To establishment of Project Office.*
3) *To implement capacity building of local authorities, NGOs and other stakeholders.*

ii) Output: Data base on temperate fruit production in the country are establishment.
Activities: 1) *To carry out base line survey for the assessment of the current status of temperate fruit sector in Ethiopia*.
2) *To carry out nationwide inventory survey on the distribution of WAA infestation on apple.*

iii) Output: Quality temperate fruit seedlings are produced and distributed.
Activities: 1) *To establish & manage Central, Regional, Woreda & FGGs (Fruit Growers Groups) Nursery.*
2) *To introduce promising temperate fruit varieties from abroad and screen their adaptability*.
3) *To multiply promising temperate fruit seedlings.*

4) *To distribute promising temperate fruit seedlings to farming communities (FGGs) in the target areas*

iv) Output: Temperate fruit production is promoted in the target areas.

Activities: 1) T*o prepare technical manuals & guidelines for nursery management & production of temperate fruits.*
2) *To update technical manuals & guidelines for nursery management & production of temperate fruits.*
3) *To train WAO staff & DAs in the target areas on nursery management & production of temperate fruits.*
4) *Training of farming communities (FGGs) in the target areas on temperate fruit production.*
5) *Planting of promising temperate fruit seedlings by FGGs.*
6) *To monitor growth of planted seedlings periodically.*
7) *Provision of field guidance on temperate fruit production by WAOs & DAs*.

v) Output: Coordination & partnership with BoARD and NGOs operated in & around the target areas are maintained.

Activities: 1) T*o establish coordination committee with BoARD and NGOs operated in & around the target areas.*

(4) Inputs

i) Donor side

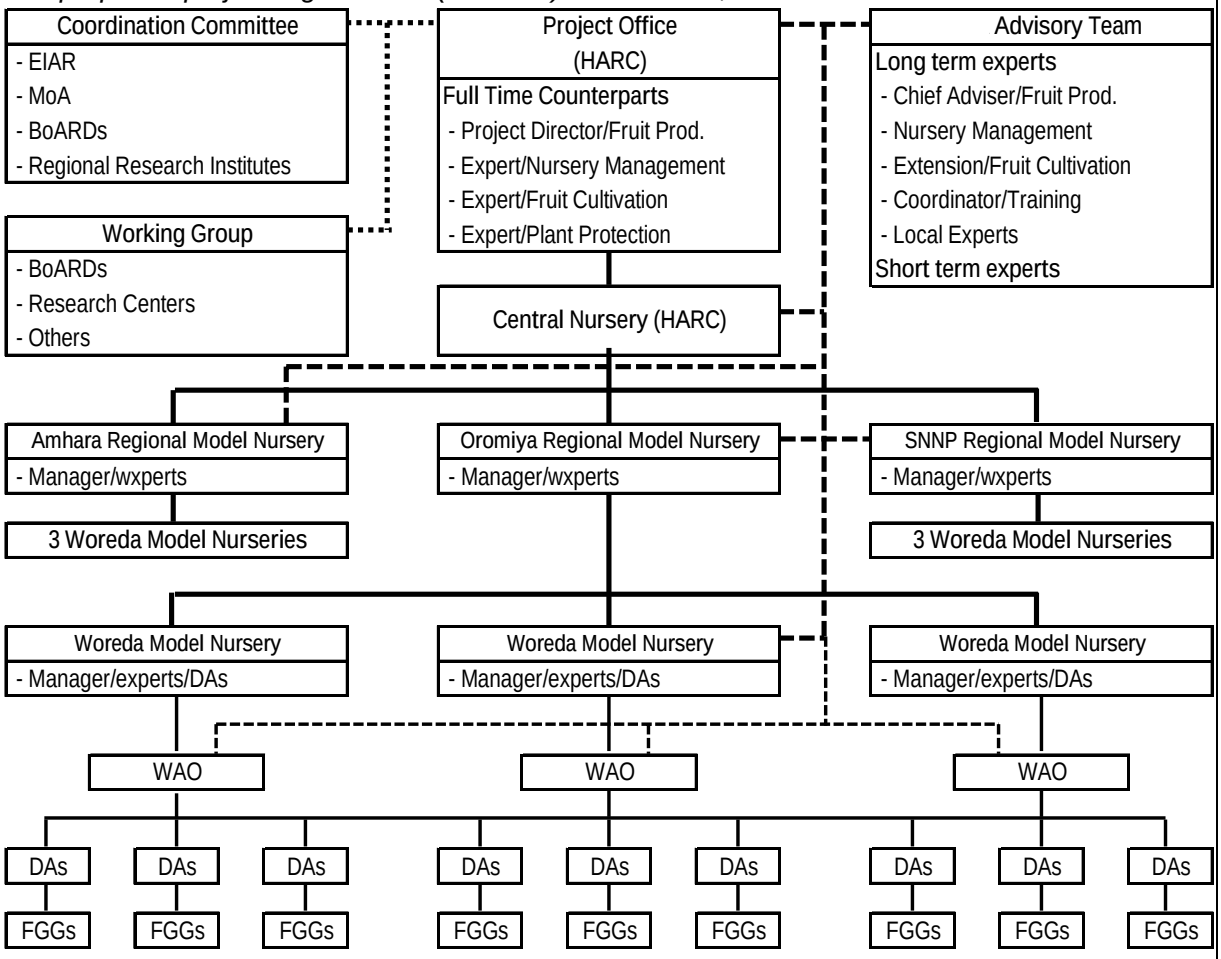
- Dispatch of experts
  Long-term: 4 (chief adviser, nursery management, extension/fruit cultivation, coordinator)
  Short-term: as required (nursery production, plant protection, fruit training etc.)
- Establishment of model nurseries
  Construction of model nurseries, machinery, equipment, etc.
- Provision of equipment/facilities
  Vehicle, training equipment, office equipment & facilities
- Project activity expenses, acceptance of trainees

ii) Partner Country's side

- Counterpart personnel expenses (4 persons)
- Establishment of model nurseries
  Provision of lands for nurseries
- Provision of equipment/facilities
  Provision of office spaces, extension & training facilities
- Project activity expenses

(5) Project Organization

The proposed project organization (tentative) is as follows;



5. Relevance

The agricultural sector is the primary economic activity in the Ethiopian highland areas. The key issues in the agriculture sector are sustainable productivity improvement in agriculture, livelihood improvement and farmland conservation. The promotion of temperate fruit production in the areas envisaged in the Project will directly address the said key issues and realize the sustainable agricultural productivity improvement and contribute to farmland conservation. The agricultural sector development and farmland conservation is the primary agricultural development strategies established in PADEP II. The overall goal of the Project, "temperate fruits production is promoted widely in the project target areas", is surely consistent with the said national development policy. The development potential of temperate fruits in the areas has been assessed highly by the HARC, BoARD, ORDA and other development institutions.

8.2 Natural Resource Management Subsector

Considering the key issues of natural resource management in the Study Area, the four project proposals are suggested. However, it is very important to discuss on the contents among all levels of stakeholders from Regional to community levels before finalizing the detail of project plan. In addition, we have to bear in mind that these projects are complementally each other and will generate synergy effects when carried

out at the same time and in cooperation.

(1) Environmental Information Analysis of Watersheds

Understanding of basic environmental properties of each watershed is critical to efficient and effective watershed management. Nowadays it has become easier to access remote sensing and GIS technologies, which are more efficient ways to gather, store and analyze environmental information of watersheds. Therefore, it is recommended to gather basic information by using satellite imageries, and store and analyze the information by using GIS in the Regional level.

Table 8.2.1 Environmental Information Analysis of Watersheds

<table>
<tr><td colspan="2">1. Project Title:</td></tr>
<tr><td colspan="2">Environmental Information Analysis of Watersheds</td></tr>
<tr><td colspan="2">2. Outline of the Cooperation</td></tr>
<tr><td colspan="2">(1) Outline of the project objective and output
Basic environmental information of watersheds in the Amhara Region is collected from satellite imageries, digital maps and other sources to know status of the watersheds and improve management of them. These data are stored and analyzed by using Geographical Information System (GIS). Information in the GIS database is utilized for watershed management in the Region. The information needed includes elevation, land use, rainfall and others, which will be utilized for watershed management planning and implementation. A pilot project is carried out in a Woreda to try to utilize the information for watershed management planning and implementation.
Concerning the satellite imageries, free imageries are fully utilized such as Landsat, Digital Elevation Model (DEM) and Google Earth. In addition, collaborate with Ethiopian Mapping Agency (EMA) to avoid overlap of activities and make the project more efficient.</td></tr>
<tr><td>(2) Period of Cooperation
3 years</td><td>(3) Total amount of cooperation
N/A</td></tr>
<tr><td>(4) Implementing Agency of Partner Country
Bureau of Agriculture & Rural Development (BoARD), Amhara Regional Agricultural Research Institute (ARARI), Environment Protection, Land Administration and Use Authority (EPLAUA)</td><td>(5) Cooperation Agency
N/A</td></tr>
<tr><td colspan="2">(6) Target Group and Beneficiaries
Direct Beneficiary: Experts in charge of land management and GIS in the Regional Offices, and all DAs in the pilot Woreda.
Indirect Beneficiary: All the people in the Amhara Region.</td></tr>
<tr><td colspan="2">3. Current situation and Problems</td></tr>
<tr><td colspan="2">In the Amhara Region watershed management plans are formulated in every registered micro-watershed. Activities concerning watershed conservation and agriculture are carried out based on the plans. However, information about basic environmental properties including area, elevation and rainfall of each watershed are not based on scientific ground. Therefore, sometimes</td></tr>
</table>

these estimated values are greatly different from the true values.

To plan and implement watershed management efficiently and effectively, it is critical to know basic environmental information. To collect the information, it seems to be the most efficient to use remote sensing and GIS for gathering, storing and analyzing of the data.

4. Framework of the Cooperation

(1) Objective of the Cooperation (Outcomes)

i) Objective to be achieved at the end of the cooperation (Project Purpose)

GIS database of basic environmental information in the Amhara Region is developed.

ii) Objective expected to be achieved after the end of the cooperation (Overall Goal)

Information in the GIS database is utilized for all the micro-watersheds in the Region.

(2) Outputs and Activities

i) Output: *Existing maps are stored in GIS database.*

Activities: *1) Collect existing digital maps and store them in GIS database.*

2) Collect, digitize and store existing hardcopy maps in GIS database.

ii) Output*: Basic environmental information for watershed management is stored in GIS database.*

Activities: *1) Collect basic environmental information by using satellite imageries.*

1) Collect basic environmental information by using other sources.

iii) Output: *Boundaries of all the registered micro-watersheds are stored in GIS database.*

Activities: *1) Boundaries of all the registered micro-watersheds are confirmed by field survey.*

2) Boundaries of all the registered micro-watersheds are confirmed by using GIS.

3) Analyze the difference of the two boundaries and locate the real boundaries.

iv) Output: *Regional experts acquire technique to locate real boundaries of watersheds by GIS.*

Activities: *1) Carry out training of Regional experts for GIS.*

v) Output: *Regional offices acquire capacity to manage GIS database.*

Activities: *1) Decide a GIS database management unit in the Regional offices.*

2) Carry out training of the GIS database management unit for GIS.

(3) Inputs

i) Donor side

- *Dispatch of experts*

Long-term: 5 (Chief advisor & Watershed management, GIS (1) & Environmental information management, GIS (2) & Database management, Remote sensing, Coordinator & Training)

Short-term: Satellite imagery analysis, Surveying, GIS training, Remote sensing training, and others.

- *Provided equipment*

Cars, computers, GIS software, Remote sensing software, and others.

- *Acceptance of trainees*

ii) Partner Country's side ● *Counterpart personnel expenses* ● *Arrangement for facilities and land, etc.* ● *Project activity expenses*
5. Relevance
For the following reasons, this project is judged to be of high relevance: *Land degradation in the Amhara Region is more serious than other areas in the country due to high population density, hilly landscape, harsh environment and others. Though the government and donors have been trying to solve the problems thorough several programs, there have been not much results so far. In rural areas lands are managed by micro-watershed. However, basic environmental information such as elevation and area of each watershed are generally wrong.*

(2) Community-based Forestry Promotion

Devastation of forest cover is one of the most critical issues of watershed management in the Amhara Region. If this problem is not solved, demand for fuelwood and timber will not be met and the agricultural productivities will decrease. Therefore, it is recommended to promote tree planting and forest management activities by community people.

Table 8.2.2 Community-based Forestry Promotion

1. Project Title:	
Community-based Forestry Promotion	
2. Outline of the Cooperation	
(2) Outline of the project objective and output C*ommunity-based forestry activities, which include tree seedlings production, afforestation and forest management, are promoted in a target Zone in the Amhara Region. First, Zonal experts, Woreda experts and DAs will be trained by the project. Then, forestry activities will be carried out by villagers with the support of the experts and DAs. In the first 2~3 years activities are carried out in about 5 micro-watersheds as pilot projects. After that, in the latter 2~3 years the activities are extended to other micro-watersheds. Seeds are collected in protected areas such as church forests; tree seedlings are produced at communal tree nurseries; and tree planting and forest management will be carried out in communal lands as well as homesteads and farmlands.*	
(2) Period of Cooperation *5 years*	(3) Total amount of cooperation *N/A*
(4) Implementing Agency of Partner Country *Bureau of Agriculture & Rural Development (BoARD) in Amhara Region*	(5) Cooperation Agency *N/A*
(6) Target Group and Beneficiaries *Direct Beneficiary: Regional, Zonal and Woreda experts in charge of forestry in the target Zone, and villagers involved in the activities in the target watersheds.*	

Indirect Beneficiary: All the people in the target Zone.

3. Current situation and Problems

During the past decades, deforestation and land degradation have been serious in the Amhara Region, Ethiopia. These have been caused by increase of population and associated agricultural land expansion, fuelwood harvest and overgrazing. Nevertheless, reforestation and forest land management have not been carried out appropriately in the area.

4. Framework of the Cooperation

(1) Objective of the Cooperation (Outcomes)

i) Objective to be achieved at the end of the cooperation (Project Purpose)

Communities in the target watersheds become to carry out forestry activities by themselves with the support of FTCs.

ii) Objective expected to be achieved after the end of the cooperation (Overall Goal)

Forestry activities in the target watersheds expand to other watersheds in the target Zone.

(2) Outputs and Activities

i) Output: *Capacity of villagers are improved.*

Activities: *1) Carry out training of forestry for Zonal experts, Woreda experts and DAs.*
2) Support FTCs to carry out technical advice to villagers.

ii) Output: *Villagers' awareness of sustainable forest management is improved.*

Activities: *1) Carry out awareness campaign for community-based forestry.*

iii) Output: *Tree seedlings are produced in the target watersheds.*

Activities: *1) Carry out trainings of seedling production for villagers.*
2) Support the communities to produce tree seedlings.

iv) Output: *Tree seedlings are transplanted in the target watersheds.*

Activities: *1) Carry out trainings of seedling production for villagers.*
2) Support the communities to transplant tree seedlings.

v) Output: *Agroforestry techniques are introduced to the target watersheds.*

Activities: *1) Appropriate agroforestry technique for the target watersheds are examined.*
2) Carry out trainings of agroforestry for villagers.
3) Support the communities to introduce agroforestry.

vi) Output: *Forests and individual trees are managed appropriately in the target watersheds.*

Activities: *1) Discuss on appropriate forest management within the communities.*
2) Support the communities to manage forests and individual trees.

(3) Inputs

i) Donor side

- *Dispatch of experts*

Long-term: 5 (Chief advisor & Rural development, Seed management & Seedling production, Afforestation & Forest conservation, Rural community & Participatory development, Coordinator & Training)

Short-term: Planned for the following fields: Agroforestry, Soil conservation, Forest products, and Environmental education. ● *Provided equipment* *Cars, refrigerator for seed storage, equipment to produce tree seedlings and afforestation, etc.* ● *Acceptance of trainees* ii) Partner Country's side ● *Counterpart personnel expenses* ● *Arrangement for facilities and land, etc.* ● *Project activity expenses*
5. Relevance
For the following reasons, this project is judged to be of high relevance: *Decrease and degradation of forests and associated soil erosions have been negatively affected agricultural production in the Amhara Region. Though the government and donors have been implemented several programs, these have not been necessarily effective. One of the most important reasons is that in most cases people do not plant trees after deforestation and do not manage plantation site after afforestation because they are not aware of importance of forest management.*

(3) Silvicultural Technology Improvement and Capacity Building

An issue is that information of suitability and afforestation technique of useful tree species is missing in the Region, though it is critical for efficient and effective forest management activities. Therefore, it is recommended to carry out study on suitable tree species by area and afforestation technique by species.

Table 8.2.3 Silvicultural Technology Improvement and Capacity Building

1. Project Title:	
Silvicultural Technology Improvement and Capacity Building	
2. Outline of the Cooperation	
(3) Outline of the project objective and output *Suitable tree species to promote in the Region are selected based on ecology, physiology, usability and preference of people. Afforestation techniques, such as seed pretreatment, seedling production, seedling plantation etc., and suitability of the tree species are examined. The capacity of relevant people and organizations are improved through the activities.*	
(2) Period of Cooperation *10 years (5 years x 2 phases)*	(3) Total amount of cooperation *N/A*
(4) Implementing Agency of Partner Country *Bureau of Agriculture & Rural Development (BoARD), Amhara Regional Agricultural Research Institute (ARARI)*	(5) Cooperation Agency *N/A*

(6) Target Group and Beneficiaries

Direct Beneficiary: Researchers and experts in charge of silviculture in ARARI and BoARD.

Indirect Beneficiary: All the people in the target Zone.

3. Current situation and Problems

In the Amhara Region afforestation activities have been carried out without enough information of tree suitability by areas. In addition, management and monitoring of plantation sites have not been carried out after transplantation of the seedlings. However, it is necessary to accumulate these kinds of information for more efficient and effective afforestation and forest management activities.

4. Framework of the Cooperation

(1) Objective of the Cooperation (Outcomes)

i) Objective to be achieved at the end of the cooperation (Project Purpose)

Necessary technique for forest rehabilitation and management are developed in the Region.

ii) Objective expected to be achieved after the end of the cooperation (Overall Goal)

Forest rehabilitation and management are carried out by using appropriate technique in the Region.

(2) Outputs and Activities

i) Output: *Tree species to promote are selected.*

Activities: *1)Check tree species which have been planted in the Region.*

2) Make list of useful tree species which have potential to be promoted in the Region.

3) Select the most recommended trees based on people's preference, usability etc.

ii) Output: *Afforestation techniques for each tree species are examined.*

Activities: *1) Information about afforestation technique are collected and examined.*

iii) Output: *Suitability of each tree species is evaluated by areas.*

Activities: *1) Afforestation trial of potential species are carried out.*

2) Evaluate suitability of each species based on result of the afforestation trial.

iv) Output: *Capacity of officials in charge of forestry in ARARI and BoARD are improved.*

Activities: *1) Technical guidance is carried out through OJT and workshop.*

(3) Inputs

i) Donor side

- *Dispatch of experts*

Long-term: 4 (Chief advisor & Tropical forestry, Silviculture, Tree physiology and ecology, Coordinator & Training)

Short-term: Planned for the following fields: Seedling production, afforestation, forest management, soil, etc.

- *Provided equipment*

Cars, equipment for afforestation research

- *Acceptance of trainees*

ii) Partner Country's side ● *Counterpart personnel expenses* ● *Arrangement for facilities and land, etc.* ● *Project activity expenses*
5. Relevance
For the following reasons, this project is judged to be of high relevance: *Decrease and degradation of forests and associated soil erosions have been negatively affected agricultural production in the Amhara Region. Though the government and donors have been implemented several programs, these have not been necessarily effective. One of the most important reasons is that afforestation activities have been carried out without enough information of tree suitability by areas. In addition, management and monitoring of plantation sites have not been carried out after transplantation of the seedlings.*

(4) Watershed Conservation Technology Improvement and Capacity Building

Concerning construction of physical structures such as hillside terrace and micro-watersheds, qualities of the structures differ from site to site; some are well constructed and work well, while the others are not. To improve these situations, it is recommended to examine problems and room for improvement, and make them known to relevant experts and DAs in the Region.

Table 8.2.4 Watershed Conservation Technology Improvement and Capacity Building

1. Project Title:	
Watershed Conservation Technology Improvement and Capacity Building	
2. Outline of the Cooperation	
(4) Outline of the project objective and output *Present status of physical structures for soil and water conservation, such as hillside terrace and check dams, are examined to find out problems and room for improvement. After that, capacity of relevant government organizations is improved through OJT, workshops and others.*	
(2) Period of Cooperation *5 years*	(3) Total amount of cooperation *N/A*
(4) Implementing Agency of Partner Country *Bureau of Agriculture & Rural Development (BoARD), Amhara Regional Agricultural Research Institute (ARARI)*	(5) Cooperation Agency *N/A*
(6) Target Group and Beneficiaries *Direct Beneficiary: All experts and DAs in charge of watershed conservation in the Region.* *Indirect Beneficiary: All rural people in the Amhara Region.*	
3. Current situation and Problems	
During the past decades, soil and water conservation structures, such as hillside terrace, micro-catchment, check dam and other, have been constructed for hillside conservation, gully	

prevention and rehabilitation. However, these have been not necessarily constructed in an appropriate manner and have room for improvement. In addition, training of watershed conservation for experts and DAs are often lacking practical contents while putting emphasis on theoretical contents.

4. Framework of the Cooperation

(1) Objective of the Cooperation (Outcomes)

i) Objective to be achieved at the end of the cooperation (Project Purpose)

Officials in charge of watershed management acquire appropriate technique.

ii) Objective expected to be achieved after the end of the cooperation (Overall Goal)

Watershed conservation activities are carried out appropriately in rural areas in the Region.

(2) Outputs and Activities

i) Output: *Room for improvement of existing soil and water conservation structures are identified.*

Activities: *1) Carry out study on problems of existing soil and water conservation structures.*
2) Identify room for improvement of the existing soil and water conservation structures.

ii) Output: *Relevant government officials understand the problems and room for improvement*

Activities: *1) Train relevant government officials through OJT, workshop and others.*

iii) Output: *Quality of watershed conservation training by the Regional office is improved.*

Activities: *1) Improve training manual for soil and watershed conservation structures.*
2) Examine more practical way of training program.

(3) Inputs

i) Donor side

- *Dispatch of experts*

Long-term: 5 (Chief advisor & Watershed conservation, Soil erosion control (1) & Water conservation, Soil erosion control (2) & Gully rehabilitation, Agricultural land conservation, Coordinator & training)

Short-term: Information, education and communication (IEC), Surveying, etc.

- *Provided equipment*

Cars, equipment for watershed conservation activities, etc.

- *Acceptance of trainees*

ii) Partner Country's side

- *Counterpart personnel expenses*
- *Arrangement for facilities and land, etc.*
- *Project activity expenses*

5. Relevance

For the following reasons, this project is judged to be of high relevance:

Decrease and degradation of forests and associated soil erosions have been negatively affected

agricultural production in the Amhara Region. Though the government and donors have supported communities to construct soil and water conservation structures through several programs, these have been not necessarily constructed in an appropriate manner and have room for improvement. In addition, training of watershed conservation for experts and DAs are often lacking practical contents while putting emphasis on theoretical contents.

8.3 Livelihood Improvement Subsector

Within the livelihood improvement component, 14 activities had been implemented and various positive outputs had been gained. Although some activities couldn't get the assumed achievements, the following two project proposals are suggested based on the experiences of the verification project.

(1) Livelihood Improvement Project for Rural Women

In the rural ANRS, there are still discriminating traditional customs against females and many women suffer from huge workload, fewer education opportunities, violence, etc. It is quite important to improve these situations of rural women who receive various discriminations.

During the Study period, 'ewe keeping training for women' was implemented in Gidan. As a result of the vigorous participation of the Woreda WAB staff, it brought successful results even with a relatively small project budget. Most beneficiaries now have new-born lambs and income generation will materialize soon. In Kobo Woreda, 'gender mainstreaming' was smoothly implemented with the active participation of Woreda WAB and a women group started to operate a kiosk and generate extra income.

To expand/extend these successful activities for the livelihood improvement of rural women with WAB, 'Livelihood Improvement Project for Rural Women' is proposed. (See the table below for details.)

Table 8.3.1 Livelihood Improvement Project for Rural Women

1. Project Title:	
Livelihood Improvement Project for Rural Women	
2. Outline of the Cooperation	
(1) Outline of the project objective and output *The Project aims at supporting rural women through various activities which are proposed and/or initiated by beneficiaries themselves. In the Phase I period, the project will be implemented in 2 food insecure Woredas in ANRS, and then will expand to neighboring Woredas if the project is very successful and fruitful.* *Expected outputs include: (i) Capacity of the Women Affairs Bureau staff is developed for planning and implementation of activities, (ii) Planned activities are successfully implemented, and (iii) Women beneficiaries' livelihoods are improved through the activity implementation.*	
(2) Period of Cooperation *3 years for the Phase I period*	(3) Total amount of cooperation *N/A*
(4) Implementing Agency of Partner Country	(5) Cooperation Agency

Women Affairs Bureau (WAB) for implementation and Food Security Coordination and Disaster Prevention Office (FSCDPO) for coordination	*N/A*

(6) Target Group and Beneficiaries

Project Area: 2 neighboring food insecure Woredas in ANRS for the Phase I period

Beneficiaries: Rural women in the project area

3. Current situation and Problems

In ANRS, there are many food insecure Woredas, where rural residents are suffering from food shortage caused by various reasons such as: (1) low farming techniques, (2) excessive land reclamation/destructive over-felling of forests with fast demographic growth, (3) soil erosion by runoff concentrated in a short time, (4) vulnerability towards droughts under rain-fed farming relying only rainfall, (5) soil degradation by overgrazing of livestock, and (6) difficulty in securing foods due to low household income.

Furthermore, rural women are in a more severe situation because of gender issues including lack of protection of basic human rights, violence, lack of access to productive resources, education and training, basic health services, employment, etc. Also there still widely exist harmful traditional practices such as FGM (Female Genital Mutilation), early marriage, and tattooing. Under the circumstances, many rural women have tremendous disadvantages as compared to rural men.

4. Framework of the Cooperation

(1) Objective of the Cooperation (Outcomes)

i) Objective to be achieved at the end of the cooperation (Project Purpose)

Region/Zone/Woreda WAB of the project areas have enough capacities to plan and implement livelihood improvement activities based on the initiatives of the beneficiaries.

ii) Objective expected to be achieved after the end of the cooperation (Overall Goal)

Rural women have better livelihoods after project implementation and their status in the society improves as compared to the ante-project situation.

(2) Outputs and Activities

i) Output: *WAB/FSCDPO staff acquire the capacities for planning and implementation of activities.*

Activities: *1) Beneficiary Woredas are selected.*

2) Baseline survey for needs assessment of rural women is conducted.

3) Training on planning and implementation for project activities is conducted.

ii) Output: *Plans of livelihood improvement activities are formulated with beneficiary women groups.*

Activities: *1) Beneficiary women are selected and groups/associations are organized.*

2) Problem analysis is conducted through participatory workshop.

3) Planning workshop is conducted with the beneficiary women groups/ associations.

4) Activity plan for each women group/association is formulated.

iii) Output: *Activities are implemented according to the plan.*

Activities: *1) Organizational arrangement is set up to implement the plan.*

2) Joint work with other offices such as WAO, SME and Cooperation Promotion Agency is arranged, if necessary.

3) Necessary materials for the activity are procured as a credit basis.

4) Activities are implemented according to the plan.

iv) Output: *Activities are checked and revised flexibly, if necessary.*

Activities: *1) Monitoring items/schedule/plan are prepared.*

2) Progress of the activities is periodically checked according to the monitoring plan.

3) After the discussions with the beneficiaries, activities are revised, if necessary.

4) Activities are evaluated through discussions with the beneficiaries.

5) Lessons learned from the activities implementation are documented and shared.

(3) Inputs

i) Donor side

- Dispatch of experts

  Long-term: 4 (chief adviser/rural sociology, community development, income generation, coordinator/capacity development)

  Short-term: tentatively planned for the following fields: livestock management, agro-processing, business management, handicraft, marketing, etc.
- Provided equipment

  Equipment for training/capacity development, Computers and their accessories, Computer software, Photo copiers, Fax machines, Audio-visual equipment, Off-road cars, etc.
- Acceptance of trainees

  About 4 persons per year (3 from WAB and 1 from FSCDPO)

ii) Partner Country's side

- Counterpart personnel expense: *6 persons from WAB*
- Counterpart personnel expense: *2 persons from FSCDPO*
- Arrangement for facilities and land, etc.

  Office rooms in Bahir Dar and target Woredas, Office furniture such as desks, chairs, bookshelves, Two telephone lines (tel & fax), etc.
- Project activity expenses

5. Relevance

For the following reasons, this project is judged to be of high relevance:

Even though the gender issue is not given a high priority in the federal budget distribution (Plan for Accelerated and Sustained Development to End Poverty, 2004), it is greatly valuable to support rural women in ANRS where nearly 88% of total population live in rural areas..

In "The 3rd Five Year Plan of Amhara Region for Development and Establishment of Democratic

System (2006-2010)" (August 2006, BoFED, ANRS), several directions are stated for regional development and one of the directions is "Participating Women in Development". Also there is another direction, "Creating Employment Opportunities". Because both directions are consistent with the objectives of this project, it is highly relevant to implement the project.
In addition, among the verification projects implemented by JICA Amhara Livelihood Improvement Study (Study period: from March 2008 to February 2011), there were two activities jointly working with Woreda WAB, namely Ewe keeping training for women in Gidan Woreda and Gender mainstreaming in Kobo Woreda. Because of the smooth and well-organized activity implementation mainly due to the high commitment of Woreda WAB staff, both of them successfully got good results. Therefore it is highly significant to expand similar activities to other food insecure Woredas to improve livelihoods of rural women.

(2) Self-support Project for People Living with HIV/AIDS

ANRS represents about a quarter of the whole country population but the total number of people living with HIV/AIDS (PLWHA) in ANRS occupies 32% of the national total, which means that ANRS gets suffered more. Currently, the average life expectancy at birth in ANRS is roughly 54 years and the Regional Government claims to reduce HIV/AIDS prevalence rate of 6.7% to 5.5% as one of its development targets.

In the rural ANRS, there are PLWHA who get infected through emigrants and returnees from urban areas. During the Study period, 'business skill training for PLWHA' was conducted in Gidan in cooperation with Woreda HIV/AIDS Directorate and SME. With the provision of seed money as a credit after the training, 90% of the trainees got started their own businesses (cereal, cooking materials and cloth trading), which generated incomes for self-support. In Ebinate, one HIV/AIDS association with 200 members was supported by the verification activity of 'improved heifer introduction for HIV/AIDS association'.

To expand/extend these successful activities for the self-support of PLWHA with HIV/AIDS Directorate, 'Self-support Project for People Living with HIV/AIDS' is proposed. For this project, the target area is not restricted in rural areas because PLWHA live in both urban and rural areas and various commercial options can be implemented for self-support in urban areas. (See the table below for details.)

Table 8.3.2 Self-support Project for People Living with HIV/AID

1. Project Title:
Self-support Project for People Living with HIV/AIDS
2. Outline of the Cooperation
(1) Outline of the project objective and output *The Project aims at supporting people living with HIV/AIDS (PLWHA) through various activities which are proposed and/or initiated by beneficiaries themselves. In the Phase I period, the project will be implemented in 2 Woredas in ANRS, and then will expand to neighboring Woredas if the*

project is very successful and fruitful.

Expected outputs include: (i) Capacity of the HIV/AIDS Directorate staff is developed for planning and implementation of activities, (ii) Planned activities are successfully implemented, and (iii) livelihoods of the PLWHA are improved through the activity implementation.

(2) Period of Cooperation	(3) Total amount of cooperation
3 years for the Phase I period	*N/A*
(4) Implementing Agency of Partner Country	(5) Cooperation Agency
HIV/AIDS Directorate, ANRS	*N/A*

(6) Target Group and Beneficiaries

Project Area: 2 neighboring Woredas in ANRS for the Phase I period

Beneficiaries: People living with HIV/AIDS in the project area

3. Current situation and Problems

As of 2008, it was estimated that a total of 331,718 people were living with HIV/AIDS in ANRS out of these 25,666 were children. Of the total people living with HIV/AIDS, 172,297 were living in rural areas and 159,421 in urban areas (Single Point HIV Prevalence Estimate).

ANRS accounted about 32% of the total people living with HIV/AIDS and almost 38% of the total AIDS orphans in the country even though it represents only a quarter of population. Besides to this, almost 31% of the newly HIV infected people were living in ANRS. This indicates that ANRS is the worst in the country with the highest burden as compared to other regions. It was estimated that a total of 38,411 new HIV infections including 5,075 HIV positive births and 22,121 people died from the disease (including 3,607 children less than 15 years) occurred in ANRS. It was also estimated that there were about 353,172 children who lost their parents in ANRS (AIDS orphans ages 0-17).

PLWHA are generally dependent on their family members due to their diseases/infections. This dependency exacerbates the household livelihoods of their family. Hence, it is necessary to support the initiatives of the PLWHA to be more independent and self-reliant.

4. Framework of the Cooperation

(1) Objective of the Cooperation (Outcomes)

i) Objective to be achieved at the end of the cooperation (Project Purpose)

Region/Zone/Woreda HIV/AIDS Directorate of the project areas have enough capacities to plan and implement self-support activities based on the initiatives of the beneficiaries.

ii) Objective expected to be achieved after the end of the cooperation (Overall Goal)

People living with HIV/AIDS (PLWHA) have more self-reliant and independent livelihoods after project implementation.

(2) Outputs and Activities

i) Output: *HIV/AIDS Directorate staff acquire the capacities for planning and implementation of activities.*

Activities: *1) Beneficiary Woredas are selected.*

2) Baseline survey for needs assessment of PLWHA is conducted.

3) Training on planning and implementation for project activities is conducted.

ii) Output: *Plans of self-supporting activities are formulated with beneficiary PLWHA groups.*

Activities: *1) Beneficiary PLWHA are selected.*

2) If necessary, groups/associations are organized.

3) Problem analysis is conducted through participatory workshop.

4) Planning workshop is conducted with the beneficiary PLWHA.

5) Activity plan for the beneficiary PLWHA is formulated.

iii) Output: *Activities are implemented according to the plan.*

Activities: *1) Organizational arrangement is set up to implement the plan.*

2) Joint work with other offices such as WAO, SME and Cooperation Promotion Agency is arranged, if necessary.

3) Necessary materials for the activity are procured as a credit basis.

4) Activities are implemented according to the plan.

iv) Output: *Activities are checked and revised flexibly, if necessary.*

Activities: *1) Monitoring items/schedule/plan are prepared.*

2) Progress of the activities is periodically checked according to the monitoring plan.

3) After the discussions with the beneficiaries, activities are revised, if necessary.

4) Activities are evaluated through discussions with the beneficiaries.

5) Lessons learned from the activities implementation are documented and shared.

(3) Inputs

i) Donor side

- Dispatch of experts

  Long-term: 4 (chief adviser/self-support, income generation, association/group promotion, coordinator/capacity development)

  Short-term: tentatively planned for the following fields: business management, dairy farming management, marketing, vocational training, etc.
- Provided equipment

  Equipment for training/capacity development, Computers and their accessories, Computer software, Photo copiers, Fax machines, Audio-visual equipment, Off-road cars, etc.
- Acceptance of trainees

  About 3 persons per year

ii) Partner Country's side

- Counterpart personnel expense: *8 persons*
- Arrangement for facilities and land, etc.

  Office rooms in Bahir Dar and target Woredas, Office furniture such as desks, chairs, bookshelves, Two telephone lines (tel & fax), etc.
- Project activity expenses

5. Relevance
For the following reasons, this project is judged to be of high relevance: *ANRS represents about a quarter of national population but it does 32% of PLWHA in the nation, 28% more than its population share. Other HIV/AIDS data also indicate that ANRS fall into a serious condition as compared to its demographic share as shown in the table below.*

HIV/AIDS Epidemic Situation in Ethiopia and ANRS (2008)

	People Living With HIV/AIDS (PLWHA)	Children living with HIV/AIDS	New HIV Infections	HIV Positive Pregnancies	HIV Positive Births	Needing ART	Total AIDS orphans	Total orphans	Annual AIDS Deaths
Ethiopia	1,037,267	68,136	125,147	79,183	14,093	289,734	886,820	5,459,139	58,290
Amhara	331,718	25,666	38,411	27,065	5,075	95,226	353,172	1,551,527	22,121
Share of Amhara (%)	32	37.7	30.7	34.1	36	33	39.8	28.4	37.9

(Data source: Development Indicators of Amhara Region 2007/08, BoFED)

The average life expectancy at birth is roughly 54 years in ANRS. However, due to the prevalence of HIV/AIDS pandemic and other communicable diseases, life expectancy could be even shorter.

In "The 3rd Five Year Plan of Amhara Region for Development and Establishment of Democratic System (2006-2010)" (August 2006, BoFED, ANRS), it is stated that the increase of the number of AIDS orphaned children and dependant families has become the major social problem. The plan also mentions that it needs to reduce the current HIV/AIDS prevalence rate of 6.7% to 5.5%.

Though the project objectives do not completely agree with the regional plan directions, the project will mitigate the HIV/AIDS problem which the ANRS is currently struggling. The verification projects implemented by JICA Amhara Livelihood Improvement Study (Study period: from March 2008 to February 2011) proved that two pilot activities for PLWHA were successful (Business skill training for PLWHA in Gidan Woreda and Improved heifer introduction for HIV/AIDS association in Ebinate Woreda). The beneficiary PLWHA started to improve their livelihoods by themselves.

In case of the business skill training in Gidan Woreda, it was conducted in cooperation with Woreda SME and the Woreda HIV/AIDS Directorate showed its high performance for the activity implementation. Hence it is greatly meaningful to extend similar activities to other Woredas to support PLWHA's efforts.

(3) Road Construction for Rural Area Network Project

Table 8.3.3 Road Construction for Rural Area Network Project

1. Project Title:
Road Construction for Rural Area Network Project
2. Outline of the Cooperation
(1) Outline of the project objective and output *Construct new road, improve existing road condition, construct and rehabilitate related facilities*

(drainage facilities, small bridge, etc), in order to build up rural area network.	
(2) Period of Cooperation *N/A*	(3) Total amount of cooperation *N/A*
(4) Implementing Agency of Partner Country *Bureau of Agriculture and Rural Development (BoARD), National Regional State Road Authority of each region*	(5) Cooperation Agency *N/A*
(6) Target Group and Beneficiaries *Peoples living in target rural area*	
3. Current situation and Problems	
In Ethiopia, only main roads are paved by asphalt, while in rural area, almost all roads are not paved and condition is serious. Serious road condition hinders rural area from developing due to following reasons, *- Agricultural inputs and products are heavy so transportation is fundamental issue for agricultural development.* *- Loss and damage of agricultural inputs and products increase if road condition is bad.* *- Draft animals are suitable for small scale transportation but not suitable for mass transportation.* *- Availability of vehicle transportation decreases if road condition is not good.* *Furthermore, to transport tree seedlings to rural area is difficult and this situation lead expansion of deforested area. Material/information exchange is key issue for watershed development, natural resource conservation, and rural area development.*	
4. Framework of the Cooperation	
(1) Objective of the Cooperation (Outcomes) i) Objectives: to be achieved at the end of the cooperation (Project Purpose) *Roads condition is improved at the prioritized network.* ii) Objective: expected to be achieved after the end of the cooperation (Overall Goal) *Traffic capacity in the target rural areas increases.*	
(2) Outputs and Activities i) Output: *Construction or improvement of road* Activities: *1) Natural condition survey (Topography, Geology, Rainfall, Temperature, Humidity, etc)* *2) Social condition survey (Existing Infrastructure, Distribution of houses, Land use, Land ownership, etc)* *3) Household socio economic survey (Family structure, Household budget, Life style of majority (daily and yearly), etc)* *4) Existing road condition survey (traffic amount, road condition, specification, existing related facilities, etc)* *5) Agricultural condition survey (kinds of products, planted area, planting and harvesting season, etc)* *6) Prioritization and selection of target rural area*	

7) Design (road and related facilities (drainage facilities, small bridges, and so on))

8) Material procurement planning

9) Construction planning

10) Cost estimation

11) Contractor selection by bidding

12) Construction supervise

(3) Inputs

i) Donor side

- *Dispatch of experts*

  Long term: Chief adviser, Road design, Related facilities (drainage facilities, small bridges, etc) design, Procurement planning, Road construction supervise, Coordinator

  Short term: Socio economic survey, Marketing
- *Budget expense by Grant Aid*

  Construction budget

ii) Partner Country's side

- *Assignment of counterpart person*
- *Arrangement for facilities and land necessary for project office*
- *Arrangement for compensation such as land expropriation*
- *Arrangement for banking for project implementation*

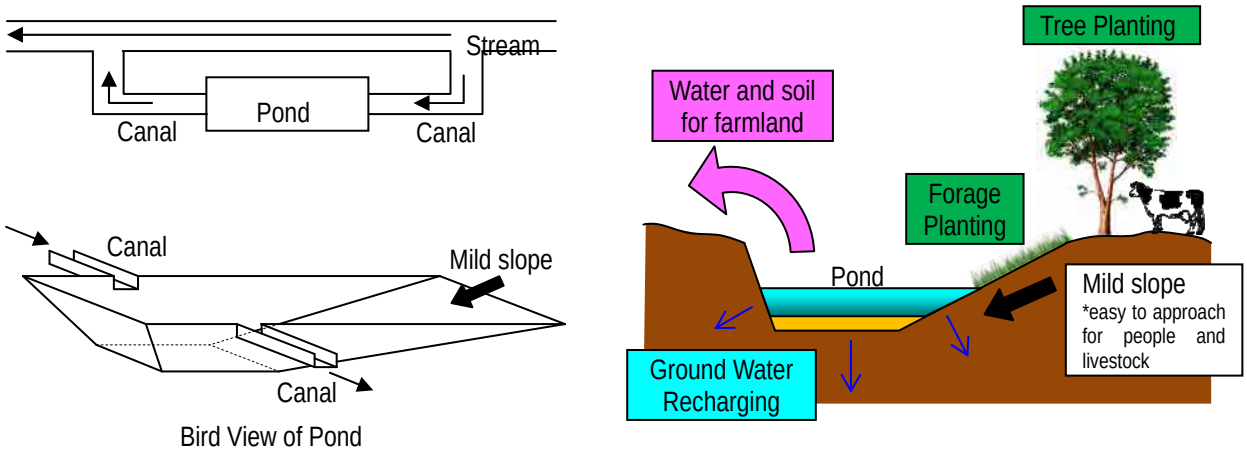
5. Relevance

Based on the results of several surveys, areas which have potentials of surplus agricultural or forestry products should be selected for target rural area. It is considered that development in potential area is easier than other areas through utilizing improved road, and it can give some ideas for development in the neighboring area as a next step.

In this project, drainage facilities and small bridge will also be constructed at the stream crossing point. These facilities do not disturb natural stream flow and improve accessibility between both banks of the stream even in rainy season.

(4) Project for Effective Utilization of Rainwater

Table 8.3.4 Project for Effective Utilization of Rainwater

1. Project Title:	
Project for Effective Utilization of Rainwater	
2. Outline of the Cooperation	
(1) Outline of the project objective and output *Construct the pond along the stream, planting tree seedlings and forage around pond, in order to produce agricultural products in dry season and expand afforested area.*  	
(2) Period of Cooperation *N/A*	(3) Total amount of cooperation *N/A*
(4) Implementing Agency of Partner Country *Bureau of Agriculture and Rural Development (BoARD)*	(5) Cooperation Agency *N/A*
(6) Target Group and Beneficiaries *Peoples living along the stream in rural area*	
3. Current situation and Problems	
In Ethiopia, there are two rainy seasons, Belg and Meher: however, there has almost no rain in other seasons. Irrigation system is not so developed in rural area, then, it is very difficult to conduct agricultural activities in dry season. In addition, soil erosion caused by deforestation is serious problem not only for natural environment but also agricultural productivity. Due to lack of water in dry season, afforestation activities are quite limited and difficult to do extension. Utilization of rain water in dry season is expected: to increase annual agricultural products, to protect natural resources and to reduce food insecure area.  *While, in rainy season, the amount of rain fall is not so little. The right side photo shows: a pond at FTC at Burko Kebele, Bugena Woreda at the end of dry season. It proves that if they collect rain water properly in rainy season, they can use water in dry season. However there are only a few people who can afford to*	

construct water storage facilities such as ponds, tanks, wells to harvest rain water.

4. Framework of the Cooperation

(1) Objective of the Cooperation (Outcomes)

i) Objective: to be achieved at the end of the cooperation (Project Purpose)

Farmers can utilize water and forage form the ponds in dry season.

ii) Objective: expected to be achieved after the end of the cooperation (Overall Goal)

Amount of annual agriculture products increase in dry season with conservation of natural resources.

(2) Outputs and Activities

i) Output: *Pond Construction*

Activities: *1) Natural condition survey (Topography, Geology, Rainfall, Temperature, Humidity, Discharge of stream in rainy season, etc)*

2) Social condition survey (Existing Infrastructure, Distribution of houses, Land use, Land ownership, etc)

3) Household socio economic survey (Family structure, Household budget, Life style of majority (daily and yearly), etc)

5) Agricultural condition survey (kinds of products, planted area, planting and harvesting season, etc)

6) Prioritization and selection of target area

7) Construction supervise

8) Monitoring (water harvesting condition, water utilizing condition, etc)

ii) Output: *Agricultural promotion*

Activities: *1) Trial of dry season cultivation*

2) Monitoring (kinds of products suitable for dry season cultivation, etc)

iii) Output: *Tree seedling and forage planting*

Activities: *1) Distribution of tree seedling and forage*

2) Establishment of nursery of tree seedling

3) Monitoring (numbers of planted seedling, percentage of live, etc)

(3) Inputs

i) Donor side

- *Dispatch of experts*

  Long term: Chief adviser, Civil engineer (hydraulic engineer), Agricultural promotion, Natural resource management, Coordinator.

- *Budget expense by Grant Aid*

  Construction budget

ii) Partner Country's side

- *Assignment of counterpart person*
- *Arrangement for facilities and land necessary for project office*

- *Arrangement for compensation such as land expropriation*
- *Arrangement for banking for project implementation*

5. Relevance

The water will go in to the pond at the beginning of flood. So this pond will also contribute to reduce the discharge of flood.

If the bottom of pond was covered by concrete, farmers can use this pond as a fish pond.