



Improving Productivity & Market Success of Ethiopian Farmers

**Monitoring and Evaluation Report of Year 4
(2008/09)**



Canadian International
Development Agency

Agence canadienne de
développement international



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List of Abbreviations

AI	Artificial Insemination
ARARI	Amhara Agricultural Research Institute
ATVET	Agricultural Technical and Vocational Education Training
BoARD	Bureau of Agriculture and Rural Development (at regional level)
BPR	Business Program Reengineering
CBO	Community-Based Organizations
CGIAR	Consultative Group on International Agricultural Research
DA	Development Agent
DVM	Doctor of Veterinary medicine
EAP	Ethiopian Agricultural Portal
EARS	Ethiopian Agricultural Research Systems
EIAR	Ethiopian Institute for Agricultural Research
FTC	Farmers' Training Center
HAPCO	HIV/AIDS Prevention and Control Office
HIV	Human Immune-Deficiency Virus
ICT	Information and Communication Technology
ILRI	International Livestock Research Institute
IPMS	Improving Productivity and Market Success
M & E	Monitoring and Evaluation
MFI	Microfinance Institute
MoARD	Ministry of Agriculture and Rural Development
MUB	Molasses Urea Block
MUM	Molasses Urea Mix
NAIRC	National Agricultural Information Resource Centre
NALC	National Advisory and Learning Committee
NGO	Non-governmental Organizations
OARI	Oromiya Agricultural Research Institute
OCSSCO	Oromia Credit and Saving Share Company
OMFI	Omo Microfinance Institute
OoARD	Office of Agricultural and Rural Development
OoPRD	Office of Pastoral and Rural Development
ORARI	Oromia Agricultural Research Institute
PA	Peasant Association/also referred to as 'Kebele' or 'Tabia'
PLW	Pilot Learning Woreda
PMF	Performance Measurement Framework
RALC	Regional Advisory and Learning Committees
RARI	Regional Agricultural Research Institute
RDA	Research and Development Assistant
RDO	Research and Development Officers
SARI	Southern Agricultural Research Institute
SMS	Subject Matter Specialist
SNNPR	Southern Nation Nationalities and People's Region
TARI	Tigray Agricultural Research Institute
WALC	Woreda Advisory and Learning Committee
WKC	Woreda Knowledge Center

Methodology

Monitoring and Evaluation report of year 4 of the IPMS project focuses on output and outcome level results. Primary data collection was done by IPMS M & E team and OoARD staff members. Four commodities and four PAs were selected in each PLW based on extensiveness & intensiveness of intervention in the different commodities for data collection at PA level (Annex 1). Extensiveness of the intervention was measured by the number of PAs covered by different interventions; and intensiveness of the intervention measured by the existence of different types of intervention in production, input supply, credit and marketing. In each of the selected PAs, a panel of 8-12 male and female farmers was selected for group interview (see annex 2 for the list of contacted persons). Selection of sample farmers is done so as to represent the diversity in farmers experience in the IPMS/OoARD facilitated interventions, ownership of selected commodities and other socio-economic variables such as gender and age. The community group interview mainly focused on the selected four commodities; and its purpose was to gain a better understanding of farmers' access to information, responsiveness of the extension system and adoption of different innovations. In addition to this, the four model FTCs in which information centers are established were visited to see the status of utilization.

A series of interviews were also conducted at PA level with DAs, PA and cooperatives officials and farmer-traders who are engaged in innovative input supply and marketing activities such as agricultural input shops, private nurseries, bull stations, milk processing centers etc. Similarly interviews were made with experts, coordinators of knowledge centers, members and chairpersons of WALC and RALC at Woreda, Zone and Region levels. Moreover, knowledge/information centers which are found at different levels, farmers' plots/barns, private fruit nurseries, input shops, bull stations, paravets, cooperative shops, etc were visited.

Secondary data was also used from log books/records of DAs/SMSs, RDOs and annual reports of the OoARDs. The project's databases, six monthly, case studies and other reports of the project were also used as a source of information. The data is analyzed

using qualitative and quantitative methods and results are presented by comparing year four with the baseline¹ year.

1. Knowledge Management

Expected outcome of the knowledge management component of the project is functional agricultural knowledge management system operationalized at Woreda & Federal levels, highlighting innovations and appropriate technologies. To meet this end the project with its partners has been engaged in different activities related to assessment of knowledge requirements, developing/promoting different mechanisms for enhanced knowledge sharing systems, and assembling, capturing & synthesizing knowledge. These various knowledge management activities have brought the expected output level results, which are: increased awareness of the knowledge requirement to manage priority commodities, increased availability of knowledge in various forms and the establishment of enhanced knowledge sharing mechanisms. The following sections in knowledge management discuss output and outcome level results using the different indicators identified in the PMF.

1.1 Increased awareness and understanding of the knowledge requirement

The indicators used to see the increase in awareness and understanding of the knowledge requirement for managing the *new* commodities are the extent of farmers' inquires and the frequency of interface between the Woreda OoARD and other actors. Farmers in the four PAs were asked whether they have looked for information about production, input supply, credit and marketing for the selected priority commodities; and the result is compared with the baseline data in table 1.1. As can be seen in the table, for PLWs such as Metema, Fogera, Bure, Goma and Astbi, farmers sought more information in year 4 than they did during the baseline period. Whereas for PLWs which register high percentage of inquiries during the baseline (such as Meiso, Ada, Alaba & Dale), the percentage of inquires is the same or is below the baseline.

Table 1.1: Demand for information (on technological, input-supply, credit and market)

¹ Baseline period is 2006/07 for Bure and Gomma, 2005/06 for Meiso and 2004/05 for the other PLWs

PLW	PA Type	Did you look for information? (% yes) (about production, input supply, credit and marketing of priority commodities)	
		Yes	Sig.
Metema	Baseline	6.3	
	Year 4	71.9	.000
Fogera	Baseline	90.0	
	Year 4	92.5	.500
Bure	Baseline	80.4	
	Year 4	91.1	.088
Mieso	Baseline	100.0	
	Year 4	98.4	.500
Goma	Baseline	59.6	
	Year 4	82.7	.008
Ada	Baseline	92.2	
	Year 4	76.6	.015
Astbi	Baseline	72.9	
	Year 4	89.1	.027
Alamata	Baseline	81.3	
	Year 4	81.3	1
Alaba	Baseline	100.0	
	Year 4	87.5	.013
Dale	Baseline	95.6	
	Year 4	88.9	.217

Interview and review of DAs log book further indicated that the number of farmers who have requested information for managing the priority commodities have increased. Farmers demand for information has considerably increased because the various interventions have created new demand among the farming community with regard to

production and marketing of market oriented commodities. According to DAs, however, the tendency of farmers to wait for information until DAs provide them is still there; and the type of farmers' inquiry varies depending on the type of commodities. In this regard, technological and input supply information requests are more frequent for interventions which involves introduction of new breed/variety, whereas information requests on marketing support are more frequent for commodities which are being produced in larger quantities in the area.

Another indicator which shows the increased level of awareness and understanding for knowledge requirement is the frequency of interface among different stakeholders. In this regard experts at Woreda level indicated that the frequency of interface with research, financial institutions and Zone and Region level experts has improved as a result of the different platform meetings and other knowledge management and capacity building activities of the project. According to experts, the various knowledge management and capacity building events of the project such as training sessions, exhibitions, study tours, demonstrations etc have played great role in bringing experts and DAs with other relevant stakeholders from the research institutes, CBOs, NGOs and even other farmers. However, comparing the situation with the first three years of the project, the level of interface or communication with research and other relevant stakeholders is reported to be less during year 2008/09. The extended BPR process, weakening of platforms, failure of WALC and RALC in conducting their regular meetings and the relatively less number of training sessions organized by the project were mentioned as the reason for the decrease in the extent of interface with others. A group of OoARD experts working mainly on the selected priority commodities were asked to rate the extent of interface with research institutions in the year 2008/2009 (Table 1.2). The results show that the extent of interface between experts of OoARD and research institutes did show improvement from the baseline status in most PLWs. However, further discussion held with experts indicated that most of the communications are based on particular capacity building, commodity development or collaborative research interventions facilitated by the project; and are not based on firm institutional arrangements that promote mutual collaboration/coordination between research and extension in a sustainable way. As a

result of this, according to OoARD experts, the frequency of information exchange between research and OoARDs have not been stable and regular in the past five years of the project.

Table1.2: OoARD experts rating of extent of interface between OoARD and research

PLW	Level of interface between OoARD experts and research institutions (Frequency/Year) (none=(0), rare=(1-2), frequent=(3-5), more frequent=(6-12), very frequent=(>12)	
	2004/05	2008/09
Alamata	None (0)	Frequent (3-5)
Astbi	None (0)	Rare (1-2)
Dale	Rare(1-2)	Frequent (3-5)
Alaba	Frequent (3-5)	Frequent (3-5)
Meiso	More frequent(6-12)	Rare (1-2)
Ada	More Frequent	Frequent (3-5)
Goma	More frequent(6-12)	Frequent (3-5)
Bure	None	More Frequent (6-12)
Fogera	None (0)	Frequent (3-5)
Metema	Rare (1-2)	Frequent (3-5)

1.2 Enhanced Knowledge Sharing System Established

The project has worked with its partners to develop, test and promote different IT and non-IT based enhanced knowledge sharing mechanisms. The most common non-IT based knowledge sharing mechanisms which are promoted by IPMS/OoARD are farmers' field days, study tours, exhibitions, demonstrations, etc. With regard to IT-based enhanced knowledge capturing / sharing mechanisms, the NAIRC (and EAP as its major component is established at Federal level. Similarly, at region and zone levels information/knowledge centers are established to provide offline content of the EAP. Woreda Knowledge Centers and min-knowledge centers are also established at Woreda and PA level, respectively. The following sections discuss the status of these knowledge/information centers at Federal, Regional, Zonal, Woreda and PA levels.

1.1.1 Enhanced Knowledge Sharing System at Federal Level:- National Agricultural Resource Center (NAIRC)

At the federal level, the NAIRC has been established in the Federal MoRAD. The NAIRC consist of an e-mail server, a web server for the Ethiopian Agricultural Portal, a system management server, window active directory server, internet security and acceleration server. Among these, the EAP and the MoARD e-mail system are the main component of the IPMS knowledge management interventions at Federal level. This EAP is developed to bring together information/knowledge from the various actors who have documented information about Ethiopian agriculture. Currently more than 400 documents from different sources and different subjects are uploaded on the portal; and these documents are made available online (www.eap.gov.et). Content managers are assigned from different directorate of MoARD and are given laptop computers to facilitate the identification and uploading of relevant documents on the portal. However, they are not actively working due to less attention given to the new responsibility which is given on top of their regular work. A new MoARD exchange system with e-mail account for more than 500 staff members has also been established. The system is working well and staff members who use e-mail for communication using the exchange system has increased from 90 in 2007/08 to 120 during 2008/09.

1.1.2 Enhanced Knowledge Sharing System: Regional and Zonal Information/Knowledge Centers

At regional and zonal levels, mirror sites of the EAP have been made available by installing the hardware and software needed for using the EAP. At regional level, these information/knowledge centers are established at BoARDS and RARIs of the four regions; and at zone level they are established at the zonal OoARDS where each PLW belongs². Each information/knowledge center has got five computers, a server for the EAP and a printer. In addition to these, TV, DVD player, shelves and chairs were also provided. In general, though provision of ICT infrastructure and installation of the EAP have been completed, awareness and usage of the EAP is at low level in all regions and

²Since Alaba Woreda is a special zone, the Zonal knowledge center is together with Woreda Knowledge Center

zones. The following table describes the status of these information/knowledge centers and utilization of EAP in each of the four regions and nine zones.

Table 1.3 : Regional and Zonal Information/Knowledge Centers

Region/Zone	Status of Regional/Zonal Information Center
BoARD, Tigray Region	Offline content of the EAP is made available at the existing library of BoARD of Tigray Region. IPMS provided a server with offline copy of the EAP, five computers, a printer, TV and DVD player. The bureau provided three additional computers to be used for knowledge sharing. Offline content of the EAP is not working because of technical difficulty encountered during initial installation. Since the library has internet connection (though it is weak), the EAP can be accessed online. Log book of the center shows on average about 10 people visit the center per day, mostly for using computers and reading books. Awareness among staff about the EAP is very low and computers are currently used for e-mail, internet browsing and word processing. In an effort to promote the EAP, the librarian made website home page of internet browser on each of the computers. The library has its own collection of reading materials; and IPMS sent its publications to the library.
TARI, Tigray Region	IPMS provided five computers, a printer and a server for offline browsing of the EAP for the establishment of the information center within the existing library of Mekele Research Center, which is under TARI. Offline copy of the EAP doesn't work since the beginning, but it can be accessed online using the broadband connection they have. According to the librarian, few researchers know the EAP and pay a visit once in a while. The library receives IPMS working papers.
Southern Zone, Tigray Region	The Zone Knowledge Center is established within the compound of the Southern Zone Administration building where the Zonal

	<p>OoARD is located. IPMS provided a server with offline content of the EAP, a printer, five computers and an audio-video set. The Zonal administration allocated two rooms: one for the computers and another for the server. The Center is under the custody of capacity building unit of the Zone and is managed by an ICT expert who looks after the day to day activity of the center. He also provides computer training to staff members and provides computer maintenance service as needed. The staff from the Zone administration and others working in the development corridor uses services of the information center. Even though some staff members browse the EAP, awareness about the EAP among staff is low. The coordinator of the center reported that he is trying to create awareness among the staff by telling them some features of the EAP. The center has no internet connection and is mainly used as ICT center where staff members receive IT training and develop their IT skills. Having seen IPMS initiative, the regional office of Capacity building also brought five additional computers and promised to support the center to get networked, linked with Woreda net and also get broadband connection. The center has any IPMS or other publications.</p>
<p>Eastern Zone , Tigray Region</p>	<p>The Zonal Knowledge Center established within the compound of the Zonal Administration building using a server, a printer, five computers and audio-video set provided by IPMS. The Zone Administration allocated a spacious room to be used as Knowledge Center; but it has not yet assigned a responsible person for the day to day management of the center. The computers are not being used neither for accessing EAP nor for word processing. Asked why they are not using the facility, manager of the Zone Administration said they are waiting for internet connection and clear direction from IPMS on the terms of use. He also added since there is only one staff member working in Agricultural profession, no one has</p>

	<p>asked so far about the EAP. There is no internet connection and there are any reading materials from IPMS or other sources. Awareness about the knowledge center in general and the EAP in particular is very low.</p>
<p>BoARD, SNNPR</p>	<p>The Regional Information Center is established within the BoARD compound with five computers, a printer, a server with offline content of the EAP and audio-video set obtained from IPMS. The center is under the new work process of the BoARD called the Agricultural Information and Documentation. Since the room where the Knowledge Center is located is also used for other purpose, the information center is not yet open to all staff members. Only some staff members of the bureau use the computers for word processing and internet browsing. There is a plan to move the facility to the library so that all staff can use the service. Officials are not aware of the EAP and are planning to use the computers for internet browsing using the broadband connection they have at the Bureau. The library has its own collection and they do receive IPMS working papers.</p>
<p>SARI, SNNPR</p>	<p>The information center is established in a spacious room allocated by SARI. IPMS provided five computers, a server with offline content of the EAP and a printer. The institute has also added three more computers to be used for similar purpose. The center has internet connection and users can also get the EAP online. However, according to the information center attendant, awareness about the EAP is very low. Most of the clients of the information center are researchers who came from the various research centers of SARI for different purpose and mainly use the computers for internet browsing and e-mailing. Even though Director of SARI also agree about low level of awareness about the EAP, he said they have great interest in using the EAP (both to get information and to share SARI's information using the EAP) and they are</p>

	<p>expecting from IPMS orientation session to staff on how to use and upload content on the EAP. There are any reading materials in the knowledge center as there is a separate library, and IPMS working papers are sent to the library.</p>
Sidama Zone, SNNPR	<p>The Zonal Knowledge Center established within the compound of the Zonal Office of Agricultural and Rural Development. The knowledge center has a server, a printer, five computers and audio-video set. They have brought a number of books which were previously scattered in different departments and stores, but they do not receive IPMS publications. The center is under the Agricultural Information and Documentation work process which assigned a coordinator to manage the day to day activities of the center. According to the coordinator of the center, the facility was not much used by staff members, but the number of users is increasing from time to time. Since there is no internet connection, staff members come to use computers for word processing, when computers in their office are down or occupied by other colleagues. The attendant doesn't know the EAP or its use and he said he has never seen staff members using it.</p>
West Harerge Zone	<p>Information and Knowledge Center established at the Zonal Office of Agriculture and Rural Development of West Harerge Zone, in which Meiso PLW is found. The center got five computers and a printer together with a server for offline content of the EAP and audio-video set (though the TV and DVD are still in the store waiting for the purchase of displaying rack). The Zonal office allocated a spacious room and assigned a person to look after the facilities. Zonal staff members have started using the computers mainly for word processing but awareness about the EAP is low. There is no internet connection and there are no reading materials of any kind. However, according deputy head of the Office, the BoARD of Oromia promised to assist in getting internet connection</p>

		and other office furniture.
ORARI & BoARD, Oromia,		The information center is established within ORARI compound. IPMS provided a server, a printer, and five computers. Offline content is established to provide mirror site of the EAP. It is reported that awareness and usage of the EAP was improving in the year 2008/09. However, in 2009/10 the research institute has changed its office to another location and the information center is not available for the time being. The information center for BoARD has been established within the BoARD compound. However, since the BoARD moved to a new location, the knowledge center has stopped its functionality for the time being.
BoARD, Amhara Region,		The Regional Information Center is established within the BoARD compound. A for EAP, five computers, and a printer is provided by IPMS and the facilities are put in the existing library of the bureau. Though the Bureau has broadband internet connection, the computers on which the EAP is installed do not have internet connection. The Bureau is planning to undertake expansion works so that these computers are also connected to the internet. The EAP is not much known by staff and ICT technicians working in the library. Currently the computers are mainly used by graduate students for word processing. The library has its own collection of reading materials and working papers of IPMS are sent to the library.
W. Gojam Zone, Amhara Region		The Zonal Information center is established within the Zonal Office of Agriculture and Rural Development in Bahirdar. The center has received a server for EAP, five computers, a printer and audio-video set. The center is under the management of the ICT unit and an attendant is assigned to manage the day to day activities of the center. Though the attendant is IT illiterate, experts of the ICT unit are in close supervision for any technical assistance needed. EAP and its use are not known by experts and those responsible for

	<p>managing the center; and the center is only used by experts for word processing. There is no internet connection and no reading material in the center. However, the Office is planning to expand the service of the center by facilitating access to internet and by adding books and other reading materials which are found in different units of the Office.</p>
<p>South Gonder Zone , Amhara Region</p>	<p>Zonal Knowledge Center established within the premises of Zonal office of Agricultural and Rural Development in Debretabor town. IPMS provided a server, a printer, five computers and audio video set. The Office assigned two smaller rooms (but currently only one is being used) and an attendant with IT background to look after the facilities of the center. In addition to staff of the Zonal OoARD, staff members of the other 12 sector office of the Zone Administration use the facilities using the time allocated for each sector. The server is loaded with offline content of the EAP, but awareness among staff member about the EAP is very low. There are no IPMS or other publications. Except a dial up connection on a computer of the head of the OoARD, internet connection is not available at the center. Technical problems are also reported in two of the five. These and low level of awareness of the EAP were mentioned as issues which undermine the use of the knowledge center for its intended purpose.</p>
<p>N. Gonder Zone , Amhara Region</p>	<p>Knowledge center is opened within a compound of the Zonal OoARD using a server for EAP, five computers and a printer from IPMS. The center is under the management of the extension department and a secretary is assigned to look after the day to day activities of the center. However, they couldn't access the EAP as the server is not functional. Experts currently using the computers for word processing and browse soft copy of agricultural related information loaded on the computers by IPMS staff. The center doesn't have any publications of IPMS or any other source.</p>

East Showa Zone	Zonal Knowledge Center is established within the compound of Department of Agriculture and Rural Development in Adama town. It has five computers, a server with offline copy of the EAP and a printer. Awareness about the EAP is low; and the computers are mainly used for word processing by staff members. Since the office has not yet assigned responsible person to manage the day to day activity of the center, the center is opened only upon request of staff members. Though TV and DVD player is provided, they are not in use due to space shortage. Any reading materials are available.
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1.1.3 Enhanced Knowledge Sharing System at Woreda level

At Woreda level the Woreda Knowledge Centers are established in all PLWs for improved knowledge sharing supported with ICT and audio-visual equipment. Though most of the knowledge centers have appointed full time attendants, some have not yet done so, but have given the duty of an attendant as an additional charge to existing secretaries or SMSs.

The following table presents the status of each WKC in the ten PLWs.

Table 1.4 : Status of Woreda Knowledge Centers

PLW	Status of WKC
Alamata	The Woreda Knowledge Center was functioning well during 2008/09. When the OoARD moved its office to a new place in Sept. 2009, the WKC also had given a spacious room. Staff members of the OoARD are using the service of the center for reading, conducting seminars and word processing. The TV and DVD are also being used to show different documentaries related to agricultural development during training sessions. The center has 611 books and other reading materials and 27 CDs/VCDs of different kind. Though the OoARD has put a fax machine; it is not functional due to lack of telephone line.. According the information obtained from the WKC logbook an average of 15 persons use the service per day. Unavailability of internet service, shortage of computers and

	books (for some disciplines), and frequent failure of computers were some of the problems mentioned by users of the service. The WKC day to day activity is managed by an attendant recruited by OoARD.
Astbi	The Woreda Knowledge Center of Astbi was working well until mid 2008. However, the OoARD could not find appropriate room after the OoARD moved to its new location. The ICT, audio-visual equipments and the reading materials are kept in a small room in the new office building. As a result of this, the staff of the OoARD is not getting the service until the M & E visit (Oct. 2010)
Dale	WKC continues to be functional at Woreda level. The day to day activity of the WKC is managed by an attendant recruited by the OoARD. It has 91 books and other reading materials and 32 CDs/VCDs of different kind. According to log book of the WKC, the number of users has also increased to an average of 15-20 people per/day. Staff members of the OoARD use the center for reading, internet browsing, report writing or watching television. The Knowledge Center is also used as a venue for other knowledge sharing events such as seminars and trainings. Frequent failure of computers and weak internet speed are the main challenges reported.
Alaba	The WKC is continued to be functional in its new room in the OoARD. Its day to day activity is managed by an attendant recruited by the OoARD own budget. Since the Woreda is a special Zone, the WKC in Alaba also benefited from the support made for the establishment of Zonal information centers. Therefore, it has additional five computers, a server with offline content of the EAP and a printer. The center is widely used as a venue for knowledge sharing during meetings, trainings, discussions. Experts in the Woreda use to read books browse internet or watch television. The number and relevance of reading materials and CDs/VCDs have also improved. The center has 633 reading materials and 110 CDs/VCDs of different kinds. The center has a slow internet connection on one of the computers. Users complained that the frequent use of the WKC for meetings and seminars is hindering people who are using other services

	of the center.
Meiso	The Woreda Knowledge Center has been established since the beginning of the project. However, as was reported in the year 3 M & E report, the facilities of the center is not being used by users. Inability of the PLW to find appropriate room and assign a person to manage the day to day activity of the center are the main reason for not using the center.
Goma	The Woreda Knowledge Center has been working well until Sept. 2009. However, due to shortage of office space, the OoARD decided to move the WKC to a new location. At the time of the visit, the OoARD is renovating another room for the purpose re-establishing the WKC. The books, computers and other audio-visual equipment are kept in a room until the completion of the renovation works.
Ada	WKC continues to be functional at Woreda level. The day to day activity of the WKC is managed by an attendant recruited by the OoARD. The center has five computers, a printer, 54 CDs/DVDs, newspapers and around 850 books (most of them from IPMS). The books are on different disciplines like crop production, livestock production, and socio economic and policy research, etc. At the time of the visit only two of the computers are being used, while the others were down with technical problems. According to the log book of the WKC, on average about 12 people use the service of the center per day. The computers are mostly used during planning and monthly reporting times for word processing. Unlike the previous years, internet connection is only being used by the head of the office.
Bure	The Woreda Knowledge Center is functioning well since its establishment. The number of books and other reading materials and CDs/VCDs have increased to 767 and 61 respectively. Managed by the OoARD staff recruited for looking after the facility, the WKC gives service for spot reading, borrowing of books and CDs, using computers and conducting other knowledge sharing events such as trainings and seminars. The center has also dial up internet connection, which according to users, has poor

	connection speed. The WKC is linked with international agricultural magazine/bulletin publishers which offer free publications.
Fogera	The WKC is functioning well and is managed by an attendant recruited by OoARD own budget to look after the day to day activities of the center. It has internet connection but users reported it to be weak. According to users the materials available in the center are fairly adequate in terms of number and relevance, but said the level of usage by staff is very low. Low level of reading habits, time shortage and lack of challenging issues that needs further reading were mentioned as reasons for not using the center for the intended purpose. However, the center is used as a venue for knowledge sharing during training sessions. Some of the problems mentioned by users of the facilities are weak internet connection, frequent failure of computers. Though computers are used by staff members, they couldn't use computers for word processing as computers are freezed (made not to save documents). The TV and DVD are also used during trainings.
Metema	Woreda Knowledge Center has moved to a new room renovated and furnished by OoARD using IPMS budget for the PLW. The computers, printer and audio-visual equipment are there, but there is no person assigned exclusively to look after the facility. There are about 60 books/reading materials and 15 CDs. A person working in the Woreda is given additional responsibility to open the WKC whenever asked by experts of the Woreda. Therefore, since it is not open at all working times, the level of usage is very low.

1.1.4 Enhanced Knowledge Sharing System at PA level

At PA level the project established mini-knowledge center in four selected FTCs in each PLWs. Each of the FTCs got a computer, a printer, TV and DVD so as to improve the status of knowledge sharing. However most of the knowledge centers were not in use as intended during the reporting period. DAs reported that lack of appropriate CD/VCD appropriate to farmers hindered them from using the audio-visual equipment for its

intended purpose. Similarly lack of computer knowledge and skill was the major problem in most PLWs for not using the ICT equipments.

Table1.5: Status of information centers at PA level

PLW	Status of information centers in selected model FTCs
Alamata	<p>At PA level the project, together with OoARD established mini-knowledge centers in four selected FTCs (Selam Bekelsi, Gerjele, Limat and Timuga). IPMS provided to OoARD a computer, a printer, TV and DVD player to be delivered to each of the selected FTCs. However, utilization of the materials for the intended purpose is not the same in the four FTCs. The TV and DVD of Limat and Gerjele PAs are not in the FTCs (they are in the PA administration because of security problems); and the computer and printer of Limat PA are still in the Woreda OoARD. The FTC at Selam Bekelsi has not received a printer and the TV is not working. None of the four FTCs has any CD/VCD/DVD to be used by the DVD player. The DAs use the TV only to watch the national broadcast of ETV and they couldn't use the DVD for intended purpose because they do not have appropriate CD/VCD. DAs got computer training for two hours a day for five days (10 hour training); and therefore, except in one PA, the computers were not also in use due to lack of IT skills. Reading materials are scant -only two of the FTCs reported that they have on average 6 books/ reading materials.</p>
Astbi	<p>Four FTCs (Hayelom, Habes, Ruba Feleg and Felege Woyni) have been supported with ICT and audio-visual equipment. The audio-visual tools were used to some extent during the reporting period for promoting some interventions. But inadequate availability of relevant CD/VCDs is reported as a problem. On average each FTC has only 1.5 CD/VCD, which makes effective use of the facility much below than the expected. The computers and printers were not used by DAs as they didn't have the appropriate IT skill. However, ICT training is being facilitated for DAs during the monitoring visit. The role of the FTCs as a knowledge center</p>

	<p>is further strengthened by the support they got in terms of reading materials they received from IPMS and OoARD. On average each FTCs has 15 reference and training materials most of them related to priority commodities and other agriculture and natural related issues.</p>
Dale	<p>The four FTCs which are supported with ICT and audio-visual tools are Bera Tedecho, Dagia, Ajwa and Debub Kege. The TV and DVD player were in use in all the four PAs (except in Ajwa where the TV is not functional since the beginning), but only for entertaining farmers before a training and watch the national broadcast of ETV. Only one PA (Bera Tedecho) reported that they have used the TV and DVD for apiculture and dairy training by using the CD/DVDs that DAs borrowed from OoARD. None of the four FTCs has their own CD/VCD/DVD material to be used during farmer training. Similarly all the four FTCs have received a computer and a printer and have received ICT training. The computers are reported being used in all the four FTCs mainly for practicing word processing. But in three of the four FTCs they also reported that they used the computers to store basic data of the PA and prepare annual plan of their respective PAs. Except one PA (Ber Tedecho), the remaining FTCs have on average 7 books/manuals in their FTC, but most of the reading materials are training modules of OoARD and few pamphlets and manuals from IPMS.</p>
Alaba	<p>Four FTCs (Alem Tena, Mierab Gorntincho, Anisha, and Mekala) supported with the provision of ICT and audio-visual equipment to establish min-information center. All the four FTCs have received the TV and DVD player. The TV and DVD are used during farmers' training using one of the many CD/VCDs they have. Unlike the other PLWs, CD/VCD is not a problem in model FTCs in Alaba. On average each FTC has about 13.5 CD/VCDs of different kinds. Most of the CDs are provided by IPMS but also experts working in the different sectors of the OoARD are required to put a copy of such material at the WKC and each of the four FTCs. A computer and a printer is found in each of the four</p>

	<p>model FTCs. DAs have received ICT training and have the required skill to use the computers. The computers are mainly used for practicing and to some extent for report writing and data storage. However, in three of the PAs (except Anisha) the printers are not being used due to different reasons. There is also reasonably adequate number of reading materials. On average each model FTC has 54 books and other reading materials related to priority commodities and cross cutting issues. Since more than 85 % of these materials are in the official language of the region, in addition to DAs few literate farmers in two PAs were reported using the service. In addition to these, each of the four FTCs is also supported by providing white board and white board marker, a display box to display different technologies.</p>
Meiso	<p>Mini-information centers are established in four selected FTCs (Oda-bela, Tokuma, Husie Adami and Gorbu) with audio-visual and ICT equipment support from IPMS. Each FTC has got a TV and DVD player; and DAs have started using the facilities during farmers' training. Each FTC has 2.5 VCD/DVD on average. Similarly, all the four FTCs have received a computer and a printer. DAs have received IT training and have started using the computers to practice word processing in all the four FTCs. The FTCs have also on average 72 reading materials which they got from IPMS and OoARD. Even though two of the FTC which does not have electric power have received generators, DAs reported they face problem in getting budget for the purchase of fuel. Problem of technical failure of computers is also reported in two of the FTCs.</p>
Gomma	<p>IPMS provided a computer, a printer, television and DVD player to four FTCs (Beshasha, Bulbulo and Acha Afeta and Kilole). The audio-visual equipment is delivered to all FTCs and is being used during farmers' training using the few VCD/DVDs available and also for watching the national broadcast of ETV. On average there are 8 CD/VCD/DVDs and 8 reading materials in each of the four FTC. A computer and a printer are also available in three of FTCs and it is not yet delivered to one PA</p>

	(Kilole) due to security problem. DAs have IT skill and use the computer for word processing and practicing computer. Computer failure is reported in two of the PAs. All PAs has also internet access.
Bure	Four FTCs are supported with a computer, a printer, TV and DVD player for the establishment of mini-information center. The television and DVD player were being used by DAs in the four PAs to show farmers innovative technologies and process to farmers during farmers' training. VCD/DVDs are available in all the four FTCs; and on average each has about six VCD/DVDs. DAs have received IT training. Except one PA, computers in the three PAs are being used to develop their IT skill as well as writing reports. There are about 75 reading materials in each of the FTCs.
Fogera	Four FTCs (Kuhar Micheael, Menugzer, Alembor, and Weji Arba) are supported with a computer, a printer, TV and DVD player. The audio visual equipment is being used during farmers training. On average each FTC has 15 CD/VCDs of different kind. DAs took computer training and have started using the computers but only to practice computer usage. On average each FTC has about 21 reading material on different subjects.
Ada	At PA level the project established mini-knowledge center in four selected FTCs (Hidi, Godino, Dre, and Ude PAs). Each of the FTCs got a computer, printer, TV and DVD so as to improve the status of knowledge sharing. On average each FTC has about 48 reading materials. PA. Each has on average 8 CD/DVDs .In general, all of the knowledge centers in the four FTCs were in use as intended and all use it to train farmers, to write report, to prepare annual plan, to save data and document files. However, in Dre the printer is not being used due to lack of know how on how to use it. Further more, DAs requested for more computer trainings to be able to utilize it better.
Metema	IPMS provided a computer, a printer, TV and DVD for OoARD for the establishment of mini-knowledge center in each of the four selected model FTC. TV and DVD are available in all FTCs except one PA

	<p>(Mendir 6,7,8), where its TV and DVD player are still at the OoARD. (There was no PA chairman in the PA to receive the TV and DVD). The TV and DVD were in use only in two PA. The TV is not working in Meka. Only one PA (Shinfa) has CD/VCD to be used during farmers' training. The computer and printer is available only in two PAs (Meka & Shinfa) and DAs use to practice IT skill, browse documents loaded on computer's hard disk and writing annual report. DAs in two of the PAs have IT skill and DAs in the other two PAs do not have IT skill. In one of the PA (Shinfa), the printer is not working and in the other PA shortage of paper and printer ink is reported. In two of the PAs the ICT equipment are still at OoARD waiting to be delivered to the FTCs. On average 60 reading materials are available in each of the four FTCs, mainly training manuals of OoARD.</p>
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1.3 Increased Availability of Knowledge

The project has worked with farmers and other private and public stakeholders in order to establish an enhanced knowledge sharing system and therefore increase the availability of information and knowledge in different forms. Increased availability of knowledge which are important for the development of market oriented commodities is reported by farmers, DAs and experts. Group discussion with farmers revealed that farmers got more information in year four than the baseline year with regard to information in production, input supply and marketing. According to farmers not only the amount and frequency of knowledge they receive from farmers increased, but also the form knowledge is transferred and the diversity of knowledge in terms of information type has changed. For this the role of field/farmers' days, study tours, exhibition, demonstrations and other practical trainings were mentioned as major means in which improved access to information and knowledge.

Table 1.6: Access to information

PLW	Year	Did you get information? (%)	
		Yes	Sig.
Astbi	Baseline	95.3	.023
	Year 4	82.8	
Alamata	Baseline	60.3	.008
	Year 4	81.3	
Metema	Baseline	5.2	.000
	Year 4	78.1	
Fogera	Baseline	79.3	.002
	Year 4	94.6	
Ada	Baseline	70.3	.141
	Year 4	57.8	
Alaba	Baseline	76.6	.265
	Year 4	84.4	
Dale	Baseline	23.2	.000
	Year 4	57.8	
Goma	Baseline	48.4	.202
	Year 4	63.4	
Meiso	Baseline	64.5	.704
	Year 4	67.7	
Bure	Baseline	75.6	.186
	Year 4	82.4	

Functional agricultural knowledge management system operationaized highlighting innovations and appropriate technologies

Operationalization of functional agricultural knowledge management system at Woreda and Federal levels is the expected outcome of knowledge management component of the project. This section discusses this outcome by pointing out the outcome indicators - the extent of utilization of knowledge based approaches and the usefulness of information received.

Utilization of knowledge based approaches

As discussed in the previous section different IT based and non-IT based knowledge sharing mechanisms were promoted by the project and OoARD in different PLWs. These knowledge sharing mechanisms are being used by their intended users at various degrees. The non-IT based knowledge sharing mechanisms such as organizing field days, study tours, farmer-to-farmer knowledge sharing etc. have been practiced widely in all the PLWs. The OoARDs in most PLWs have started organizing such events both at Woreda and PA level with little or no involvement of IPMS in organizing the events. As can be seen from the table below, at least 2 such events have been organized in each of the sampled PAs during the year 2008/09. Apart from these PA wide events, DAs have also organized smaller knowledge sharing events within the PA by focusing on a particular technology/process and by involving smaller number of farmers. Similarly, technology exhibitions and farmers festivals are being used in all the four regions

Table 1. 7 : Number of farmers' days organized in 2008/09

PLW	Average number of PA level farmers' days organized in PA
Alamata	2.5
Astbi	3.5
Dale	1.5
Alaba	2.2
Meiso	2
Metema	2
Fogera	3
Bure	2.5
Ada	2.5
Goma	2

Similarly some level of utilization of IT based knowledge sharing mechanisms has been reported. Utilization of the knowledge /information centers that are established at different level is discussed in the previous section (see section 2.1 for details) .

At federal level, the number of users of the e-mail system is increasing. But the inability of the content managers to do their work affect the number and relevance of documents on the EAP and it might put sustainability of this initiative in danger. At regional and zonal levels, though establishment of knowledge centers with offline content of the EAP is completed, utilization of the services for intended purpose is at its infant stage. Awareness about the purpose of the information center as well as the EAP is low at Zone and Region levels. At Woreda level the usage of the service given by the WKC has improved in many PLWs. In most cases the computers in the WKC are being used for writing reports or browsing CDs/VCD or internet (where internet available). Staff also uses the facility to refer reading materials on spot or borrow books for limited time period. Similarly, though provision of ICT and audio-visual equipment is completed for the PA level knowledge centers, utilization of the facilities is low. Some of the common issues that limited the information centers from plying their expected role in enhanced knowledge sharing mechanism are:

- Unavailability of reading materials (especially in most Zone and some PA level information centers)
- Inadequate number and relevance of books and other reading materials on priority commodities (especially at WKC and some FTCs)
- Unavailability of internet service and poor connection where there is internet service;
- Shortage of relevant VCD/DVD materials to use the DVD player (especially at PA level)
- Poor reading habits of staff
- IT literacy level of intended users (especially at PA level)
- Unavailability of allocated budget or complicated bureaucracy to get budget for consumables (such as printer ink, paper, fuel for generator and maintenance cost).

Usefulness of information received

Another indicator which shows the outcome of the various knowledge management outputs discussed in the previous section is farmers' perception of the usefulness of

information they received. The group discussion which was held with farmers in each sample PA revealed that the usefulness of information farmers received with regard to market oriented commodities has improved in most PLWs during year four as compared to the baseline period.

Table 1.8: Usefulness of Information

PLW	PA Type	Was information Useful? (%)	
		Yes	Sig.
Metema	Baseline	40	.001
	Year 4	90.7	
Fogera	Baseline	97.3	.211
	Year 4	92.9	
Bure	Baseline	55.9	.000
	Year 4	93.2	
Mieso	Baseline	97.5	.148
	Year 4	88.9	
Goma	Baseline	86.7	.620
	Year 4	84.6	
Ada	Baseline	71.1	.016
	Year 4	92.1	
Astbi	Baseline	93.4	.404
	Year 4	89.1	
Alamat a	Baseline	100	.002
	Year 4	80	
Alaba	Baseline	79.6	.809
	Year 4	81.5	
Dale	Baseline	84.6	.662
	Year 4	89.2	

In general, the level of utilization of the above mentioned knowledge sharing mechanisms is growing. It is encouraging that most of the OoARDs have recognized knowledge management as one priority area for promoting market oriented agricultural development. Among other things, the growing commitment of OoARDs for knowledge management is reflected by the increasing resource allocation for different knowledge management activities. For example OoARDs recruited WKC attendants from their own budget; they allocated appropriate office space for WKC, and incorporate organizing farmers' days etc in their annual plan.

2. Innovative Capacity Development

The capacity development component of the project focused on activities mainly related to: strengthening the capacity of staff in public organizations at the Woreda, Regional & Federal levels including the procurement of materials & equipment, strengthening the capacity of farmers, staff from CBOs & from private sector organizations at the local level in PLWs and, developing institutional arrangements (linkages and roles) and a culture of sharing to foster effective responses to information demands. These activities are expected to bring output level results, which are: increased knowledge, awareness, understanding and skills of staff in public organizations, increased knowledge, awareness, understanding and skills of farmers, and staff from CBOs and from private organizations; and establishment of collaborative network arrangements between farmers, CBOs, public & private sector organizations developed to better respond to market demands on the use of demand-driven agricultural technologies and services. The above mentioned output level results are expected to bring about one of the project outcome-strengthened innovation capacity of producers, CBOs and private sector organizations, and agriculture and natural resource management public organizations to support the development of small-holder, market-oriented agricultural production systems. This section presents these output and outcome level results during 2008/09.

Increased Knowledge, awareness, understanding and skills of staff in public organizations

The project in collaboration with its partners have organized various capacity building activities with the objective of improving the awareness, understanding, knowledge and skills of staff members in public organizations. The capacity building events covered a wide range of technical and social subjects including cross cutting issues of gender, HIV/AIDS and environment³. In order to know whether these capacity building events

³ Apart from the short term trainings the project provides opportunities for long term trainings. In this regard among the total 224 students that are being sponsored, 97 students (24 % female) that were being supported for their BSc (34), DVM (14) and MSc (49) have graduated up to May 2009. From all graduates, 56 % were sponsored for their MSc./DVM/BSc tuition and thesis research, while 45% were sponsored for financial and supervisory support for MSc. thesis and BSc/DVM attachment works.

have brought the required improvement in improving knowledge and skill, participants were asked to rate the different IPMS/OoARD facilitated capacity building events in terms of improving their knowledge, awareness, understanding and skill on a 5-to-1 scale, and participants rated on average 3.6 (between ‘to some extent to ‘large extent’). Further discussion with IPMS/OoARD capacity building participants revealed that the fact that the trainings are practical and participatory, selection of training facilitators with adequate knowledge and skill were mentioned as best qualities of IPMS/OoARD facilitated trainings. On the other hand short duration of trainings, selection of participants who are not directly involved in the planned intervention, not involving adequate numbers of trainees were some of the frequently mentioned weakness of the various capacity building events.

Table 2.1: Average rating of different capacity building events in terms of increasing participants’ awareness, understanding, knowledge and skill.

PLW	Average Rating
Alamata	3.62
Astbi	3.68
Dale	3.66
Alaba	3.55
Meiso	4.05
Gomma	3.5
Bure	3.75
Fogera	3.63
Metema	3.2
Ada	3.7
Mean (total)	3.6

Similarly interviewees were also asked to rate to what extent they incorporate innovative methods which they learned from various knowledge management and capacity building events in the provision of services to men and women farmers. The result is indicated on the table 2.2

Table 2.2 Average rating of the extent to which the public sector staff incorporate innovative methods they got from various capacity building events in the provision of services.

PLW	Average Rating
Alamata	3.02
Astbi	3.56
Dale	3.15
Alaba	3
Meiso	3.6
Gomma	3.25
Bure	3.63
Fogera	3.63
Metema	3.36
Ada	2.8
Mean	3.3

Further discussions were held with DAs and SMS to the level of incorporation of innovative methods in the service they provide to farmers. In general experts and DAs said that they apply innovative extension approaches and methods reasonably well in IPMS/OoARD facilitated and funded interventions. However, application of such approaches and methods consistently beyond IPMS/OoARD facilitated interventions has faced challenges. Though they are well aware of the innovative extension methods and are convinced of their effectiveness, DAs/experts could not apply these approaches and methods to a reasonable level due to different reasons. The most frequently mentioned problems are:

- Overcrowded by unforeseen/unplanned works (usually not of extension related such as seminars, input distribution, credit collection)
- High number of farmers to be handled by staff member.
- Unavailability/inadequacy of systems for complementary services such input supply and credit

- Lack of conducive environment and facility (frequent reshuffling of DAs, unavailability/inadequacy of transport facility)
- Lack of motivation

Increased knowledge, awareness, understanding and skills of women and men farmers, pastoralists, and staff from Community-Based Organizations (CBOs) and from private-sector organizations serving the PLWs.

The capacity building interventions also delivered to farmers, CBOs and to members of the private sector. In the group discussion held with farmers, the M & E team tried to capture the level of change in awareness, knowledge and skills of farmers on different issues related to the development of market oriented commodities as well as cross cutting issues of environment, gender & HIV. Farmers explained that their knowledge and skill have greatly increased about different aspects of market oriented commodities. Their awareness about new varieties or breeds of crop and livestock commodities increased, they have learned improved management practice, and they are better informed about new alternative input supply and marketing options. Similarly, the M & E team tried to see the level of change in knowledge and skill of CBOs and private sector organizations or individuals. In this regard various trainings, demonstrations, study tours were conducted to help CBOs (e.g. cooperatives and cooperative unions) and other private sector organizations (such as traders which operate input shops, individual farmers who run fruit nursery, bull stations). In general the level of change in knowledge and skill among farmers, CBOs and private sector is reflected on the extent to which these actors adopt new technologies and process or use the new institutional arrangements for input supply and marketing. These changes are discussed in the next section while discussing the range of interventions and the status of adoption during year 4 (see section 3.1 and 3.2).

Collaborative network arrangements between farmers, pastoralists, CBOs, public and private sector organizations developed to better respond to market demands on the use of demand-driven agricultural technologies and services.

Another output of the innovative capacity development component of the project is the development of collaborative institutional arrangements between producers, CBOs, public and private sector organizations to better respond to market demands on the use of

demand driven agricultural technologies and services. In this regard a number of institutional arrangements were formed with the facilitation of the project to promote collaboration and coordination amongst various actors. Commodity platforms, communities of practices, WALC and RALC are the common formal institutions promoted in different PLWs. Apart from these, the project also tried to form/strengthen bilateral or multilateral linkages among farmers, CBOs, private and public sector organizations to promote collaboration.

However the extents to which these institutional arrangements promote collaboration and coordination considerably vary across PLWs. In most of the cases the platforms ceased to exist after completion of the very problem they set to solve. But some, platforms such as the sheep fattening in Goma tried to scale out sheep fattening activities in other PAs and a multi stockholder marketing committee was actively working on creating strong market linkages between onion producers and other market participants in Alamta

WALC and RALCs are another institutional arrangements established at Woreda and Regional level, respectively to promote inter-institutional learning, sharing and dissemination of knowledge and experiences. WALC in all PLWs conducted meetings to approve budget and annual plan of the PLW. Especially WALCs in Bure, Fogera, Metema, Alamata and Ada relatively regularly met during the reporting period. But in general the participation of other stockholders other than the OoARD staff has diminished very much. Similarly apart from meeting during plan approval and special meetings/seminars, the regular RALC meetings have not been conducted in all the four regions and participation of other stakeholders outside the BoARD and RARIs is found to be low. According to WALC and RALC chairpersons, even though WALC & RALC played a role during the planning stage by incorporating ideas from different angle during planning, the learning functions of these arrangements is low.

Despite these shortcomings in the functionality of the formal institutions promoted by the project, the experience gained from platforms highly promoted the culture of engaging multi-stakeholders in commodity development. In addition to this, steps have been taken

on a number of levels to improve technical cooperation especially with regional research centers in the transfer of new technologies and capacity buildings. WALC and RALC chairpersons and Head of RARIs said the extent of communication and linkage with research institutes has improved. The facilitation role played by the project has helped researchers to be in close contact with farmers and extension workers.

Outcome of the capacity development component of the project is strengthened innovation capacity of farmers, pastoralists, community-based and private sector organizations, and agriculture and natural resource management public organizations to support the development of small-holder, market-oriented agricultural production systems. Since the extent of coordination between actors is discussed in the previously, this section focus on other outcome indicators. Responsiveness of the extension system including the FTCs to the needs of women and men farmers is an indicator used for outcome of the innovative capacity development. In a group discussion farmers were asked to whether the extension system for the market oriented commodities is responsive or not. The result is presented in table 2.3.

Table 2.3: Responsiveness of the extension system

PLW	PA Type	Is the extension system responsive? (%)		Sig.
		No	Yes	
Metema	Baseline	100.0	.0	.000
	Year 4	53.1	46.9	
Fogera	Baseline	52.5	47.5	.041
	Year 4	30.0	70.0	
Bure	Baseline	52.9	47.1	.013
	Year 4	32.9	67.1	
Meiso	Baseline	81.5	18.5	.026
	Year 4	63.0	37.0	
Goma	Baseline	88.9	11.1	.006
	Year 4	70.8	29.2	
Ada	Baseline	64.1	35.9	.451
	Year 4	70.3	29.7	

Astbi	Baseline	50.0%	50.0%	.623
	Year 4	45.3%	54.7%	
Alamata	Baseline	60.5%	39.5%	.000
	Year 4	27.9%	72.1%	
Alaba	Baseline	43.8	56.3	.026
	Year 4	31.3	68.8	
Dale	Baseline	72.9	27.1	.012
	Year 4	47.9	52.1	

According to farmers, the OoARD extension system which usually deals more on food crops have increasingly started to engage in information supply, capacity building and linkage facilitation related to market oriented commodities. In further discussion held with a group of farmers, it was indicated that the various interventions made in terms of providing technological information, facilitation of improved input supply and marketing support options and facilitation of credit service have greatly improved the responsiveness of the extension system for market oriented commodities. However, lack of continuity of interventions started in one year to the next year, inability of the system to accommodate requests from additional number of interested farmers were the most frequently mentioned problem with the responsiveness of the extension system.

3. Commodity development

The ten PLWs which are established in the four regions are functioning. Annual plans of each PLW prepared by linking to the priorities of the Woreda and regional development plans. WALC and RALC chairpersons in each Woreda revealed that the overall strategy of the project is in line with the overall government policy for market oriented agricultural development and annual plans which are prepared for each PLW address critical areas that needs to be improved in each PLW. According to WALC chairpersons the annual work plans are integrated with the priority of the Woreda and regional development plans. However, WALC chairpersons of Dale, Alamata and Metema

reported lack of flexibility in changing the initially selected priority commodities, have limited the project's ability to follow the changing realities in the promotion of market oriented commodities.

As in the case of previous years planning of the program of work for the reporting period was prepared by PLW staff together with IPMS and approved by WALC. Consultations the various stakeholders including farming communities were done. The selected market oriented commodities are supported by relevant knowledge management and capacity development interventions. Some of the interventions were also supported with innovative credit from the project fund through lending institutions in the respective PLWs. Table 3.1 and 3.2 presents a number of appropriate technologies and process and institutional innovations identified and promoted for crop and livestock commodities, respectively.

3.1 Crop Commodities

Tigray Region

Alamata

Fruit	Production technologies	<p>Two banana varieties⁴ and Solo papaya introduced. Improved planting methods, weed control and soil and water conservation etc were introduced for Avocado, Mango, Papaya and Banana. Grafting technique and farmer' based grafted seedling supply system is established (see input supply for fruit)</p> <p>The intervention done in promoting improved varieties of fruit resulted greater awareness and demand by the farming community. From 2005/06 up to 2008/09 about 104, 894 seedlings of various fruit crops distributed to farmers. Sites which are suitable for fruit production clustered and about 5700 seedlings of mango, avocado, papaya, orange and lemon were sold to farmers in 8 PAs. The change from the baseline is indicated on the table below.</p> <table border="1" data-bbox="430 998 1291 1300"> <thead> <tr> <th data-bbox="430 998 577 1112">Crop</th> <th data-bbox="577 998 934 1112">Area covered (2004/05) ha</th> <th data-bbox="934 998 1291 1112">Area covered (2008/09) ha</th> </tr> </thead> <tbody> <tr> <td data-bbox="430 1112 577 1177">Banana</td> <td data-bbox="577 1112 934 1177">0 ha</td> <td data-bbox="934 1112 1291 1177">5</td> </tr> <tr> <td data-bbox="430 1177 577 1242">Papaya</td> <td data-bbox="577 1177 934 1242">4.47</td> <td data-bbox="934 1177 1291 1242">6.85</td> </tr> <tr> <td data-bbox="430 1242 577 1300">Mango</td> <td data-bbox="577 1242 934 1300">0.01</td> <td data-bbox="934 1242 1291 1300">7.85</td> </tr> </tbody> </table>	Crop	Area covered (2004/05) ha	Area covered (2008/09) ha	Banana	0 ha	5	Papaya	4.47	6.85	Mango	0.01	7.85
Crop	Area covered (2004/05) ha	Area covered (2008/09) ha												
Banana	0 ha	5												
Papaya	4.47	6.85												
Mango	0.01	7.85												

⁴ William I and Poyo

		* data obtained from the baseline data of the project and OoaRD annual report
Fruit	Input supply	A system for private fruit nursery promoted. But the nurseries are no more functional following low demand by farmers, who perceive the price charged by nurseries high as compared to the price of seedlings from government nurseries.
Fruit	Marketing	Market linkage is facilitated with traders in Mekele (see marketing interventions for onion)
Onion + other vegetables such as hot pepper, tomato	Production technologies	<p>A new variety of Bombay Red is introduced together with improved agronomic practice⁵ through demonstration/training and follow up advisory service. Onion seed production system is also introduced (see input supply).</p> <p>New hot pepper variety (Mareko fana) introduced and demonstrated at FTC and farmers field. About 2.5 kg of the new hot pepper variety distributed to 5 farmers and other farmers have re-used the seeds of Markofana from the previous year production. In response to lower price of onion, in 2008/09, many farmers have planted hot pepper in irrigation areas.</p> <p>As a result of the various knowledge management/capacity building and commodity development interventions, onion production increased from 83.19 ha in 2004/05 by 601 households to 1270 ha in 2008/ 09 by 888 farmers (31 female). According to OoaRD report onion covers about 93% of the area where vegetables grow</p>

⁵ use of optimum deep well irrigation, improved seed use, raw planting and pest management practice

		<table border="1"> <thead> <tr> <th>Crop</th> <th>Area covered (2004/05) in ha</th> <th>Area covered (2008/09) in ha</th> </tr> </thead> <tbody> <tr> <td>Onion</td> <td>83.19</td> <td>1270</td> </tr> <tr> <td>Tomato</td> <td>5</td> <td>27.16</td> </tr> <tr> <td>Hot pepper</td> <td>262.03</td> <td>279.2</td> </tr> </tbody> </table> <p>As a result of onion, pepper and tomato production an income of 28, 545, 355 birr is estimated to be earned by producers.</p>	Crop	Area covered (2004/05) in ha	Area covered (2008/09) in ha	Onion	83.19	1270	Tomato	5	27.16	Hot pepper	262.03	279.2
Crop	Area covered (2004/05) in ha	Area covered (2008/09) in ha												
Onion	83.19	1270												
Tomato	5	27.16												
Hot pepper	262.03	279.2												
Onion	Input supply	<p>Onion seed production system introduced in demonstration form on four farmers' field in two PAs.</p> <p>To ensure availability of viable onion seed, Shewit Cooperative Union is linked with Fogera onion seed producers for the supply of onion seeds. In 2008/09 1600 kg onion seeds from Fogera is brought by the cooperative union and distributed to farmers in 3 PAs and neighboring Woreda.</p> <p>About 1000 ha swampy area reclaimed in two PAs and a significant amount of the area has been used for vegetable and field crops production during the dry and wet season, respectively.</p>												

Onion	Marketing	<p>Linkage was facilitated with a Union and onion wholesalers in the regional capital. In order to increase bargaining power of vegetable producers, address of traders in major regional towns is given to Shewit Union and farmers. The Cooperative Union was supported to bulk up farmer produce and has collected about 160 qt of onion bulb.</p> <p>A marketing committee was formed at Woreda and PA level to follow the market situation, provide price information and facilitate linkage. The platform coordinated marketing of onion bulb with the cooperative union, hoping farmers would get better price if they sell to the union than individual traders. Even though this intervention helped to increase price and the volume of onion sold in 2007 (from 0.75 Birr/kg in 2004/05 to up to 3 Birr/kg in 2007). However, consequent efforts to facilitate market linkages have not been effective in 2008/09 production season in terms of attracting large number of traders. Weakness of the intervention to attract other private market participants (brokers and private traders) other than the Cooperative Union and limited capacity of the Cooperative Union to buy products on time were some of the problems mentioned by members of the committee and farmers.</p>
Sesame	Production technologies	<p>Three improved sesame varieties⁶ introduced through demonstration at FTCs and farmers field on 3 ha of land. Adoption of these varieties has not been reported.</p>

⁶ Adi, Serkamo & Tate

Astbi

Vegetables	Production technologies	<p>Improved management practice demonstrated for garlic production (which is new to the Woreda) and other vegetables using irrigation. Practical field management of quality vegetable production was supported by the woreda experts with the facilitation of IPMS</p> <p>Demonstration seeds of improved varieties of five tomato, two onion, and two pepper released varieties from Melkasa Research Center were demonstrated on farmers' fields and FTCs. In addition, onion seed production was also demonstrated. Market linkage between vegetable producers and traders in regional capital Mekele and the nearest town Wukro were also made</p> <p>The number of households benefiting from irrigated agriculture is estimated to be 5,996 (20 % female). The table indicates an increase in the area covered by the four commodities comparing the situation in 2004/05 and 2008/09.</p>
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		<table border="1"> <thead> <tr> <th>Crop</th> <th>Area covered (2004/05 ha</th> <th>Area covered (2008/09) ha</th> </tr> </thead> <tbody> <tr> <td>Onion</td> <td>158.84</td> <td>183.78</td> </tr> <tr> <td>Cabbage</td> <td>86.69</td> <td>208.86</td> </tr> <tr> <td>Tomato</td> <td>135.04</td> <td>411.74</td> </tr> <tr> <td>Garlic</td> <td>58.56</td> <td>102.83</td> </tr> </tbody> </table>			Crop	Area covered (2004/05 ha	Area covered (2008/09) ha	Onion	158.84	183.78	Cabbage	86.69	208.86	Tomato	135.04	411.74	Garlic	58.56	102.83
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Vegetable	Input Supply	Onion seed production demonstrated Local pump maintaining system established by training individuals and they have continued giving service. .																	
Vegetable	Marketing	Market linkage between vegetable producers and traders in regional capital Mekele and the nearest town Wukro were also made Linkage was formed between vegetable farmers and traders.																	
Pulse	Production technologies	Pulse production under irrigation during the dry season promoted. In 2007 pulses were planted on 234 has under irrigation by about 1840 farmers (30 % female).																	

Amhara Region

Bure

Faba bean	Production technologies	Three improved Faba bean varieties ⁷ introduced through demonstration together with improved management practice in two farmers' field in one PA. Based on yield and bean size, farmers selected the 'Degaga' variety is selected and planned to multiply the seed of this variety on farmers' field. However, the intervention could not be continued due to lack of breeder seed from the research centers. A Cooperative Union at Bure linked with traders in Metema and sold teff and Faba bean at a better price.
Fruit	Production technologies	Two grafted Avocado varieties (Has and Firute), solo papaya variety and four varieties of banana ⁸ were introduced for the first time in three PAs. Spacing, mulching and construction of irrigation structure is also demonstrated. Farmers have started growing these improved varieties for the first time. Similarly, 75 grafted apple seedlings of 3 varieties were introduced on 4 farmers' fields in 2 PAs for the first time. Following this, the OoARD introduced and demonstrated 114 improved apple seedlings from its own budget in other PAs. Up to 2008/09 a total of 1092 grafted seedlings of avocado planted covering an area of 4.27 ha of land in 40 farmers (32 male and 8 female) in 5 PAs. Similarly 3024 trees of solo papaya is planted in (246 male and 56 female) on 1.89 ha of land. 1000 suckers of the three improved varieties of banana are planted on 1 ha of land by 104 (84 male and 20 female) farmers. To insure continuous supply of grafted seedlings, private nurseries also introduced (see input supply).

⁷ Adet Hana, CS-20DK and Degaga

⁸ Poyo, Williams, Ducase, Butazo and cooking type

Fruit	Input Supply	<p>Farmers based seedling multiplication and distribution system established for the newly introduced avocado, solo papaya and banana varieties in two PAs. Among the 13 farmers trained in grafting, four (1 female) farmers have started the business of private nursery. They produced and sold 994 grafted mangos at 20 birr/seedling and seedlings of Solo papaya at 2 birr/seedling so far.</p> <table border="1" data-bbox="432 626 1633 1024"> <thead> <tr> <th data-bbox="432 626 1104 740">Farmer based fruit nursery</th> <th data-bbox="1104 626 1251 740">Baseline (2004/05)</th> <th data-bbox="1251 626 1633 740">2008/09</th> </tr> </thead> <tbody> <tr> <td data-bbox="432 740 1104 967">The number of grafted and distributed fruit seedlings (Mango, papaya & banana)</td> <td data-bbox="1104 740 1251 967">0</td> <td data-bbox="1251 740 1633 967">994 mango @ 20 birr/seedling 3024 @ 2 birr/seedling 100 banana @ 7 birr/seedling</td> </tr> <tr> <td data-bbox="432 967 1104 1024">Number of private nurseries</td> <td data-bbox="1104 967 1251 1024">0</td> <td data-bbox="1251 967 1633 1024">3</td> </tr> </tbody> </table> <p>The government nursery cites also continued supplying improved varieties of Avocado and Solo Papaya. 58 grafted avocado seedlings and 1500 solo papaya seedlings were distributed to farmers at 7 birr/grafted seedling of avocado and 50cents/seedling for papaya. 1000 banana suckers produced by 7 farmers in 3 PAs and distributed to farmers in three PAs within Bure Woreda and</p>	Farmer based fruit nursery	Baseline (2004/05)	2008/09	The number of grafted and distributed fruit seedlings (Mango, papaya & banana)	0	994 mango @ 20 birr/seedling 3024 @ 2 birr/seedling 100 banana @ 7 birr/seedling	Number of private nurseries	0	3
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		<p>to other Woreda (Jabitehnan- Mankusa area) at a price of 3-5birr/sucker</p> <p>Both farmers and the OoARD fruit nursery have continued raising a large number of avocado rootstocks and papaya seedlings. The challenge in this activity is scion which will be solved as the mother fruit trees mature in the near future. However, as the success rate of grafting is low among nursery owners, farmers engaged in fruit nursery need close follow up and refreshment training. Availability of standard grafting equipment and the significant price differentials between OoARD nursery and private nursery were also mentioned as a challenge.</p>
Hot peeper	Produc tion techno logies	<p>Marko fana, improved hot pepper variety introduced through demonstration and then farmers started seed multiplication. Use of recommended fertilizer rate for hot pepper demonstrated. In 2008/09 1800 ha of land covered by hot pepper and according to IPMS and OoARD experts almost all farmers in the district use the new variety in an area of 126.5 ha. Use of apron star chemical treatment for hot pepper demonstrated. Six female farmers were trained to raise and sell seedlings at the beginning, but now farmers grow their own seedling and purchase from market in time of shortage. The new variety 15 birr/kilo fetch better price than the local one 12 birr/kilo Chemical dipping is tasted but the problem is still there.</p>
Marke t	Marke ting	<p>IPMS/OoARD provided weekly market price information for agricultural commodities. OoARD staff has taken the full responsibility of collecting and distributing market data to all PAs in weekly basis.</p>

Potato	Production technologies	Performance of 3 improved potato varieties ⁹ on three farmer fields at Wundegi PA is demonstrated. A field day was organized to demonstrate the activity to farmers, DAs and experts. However, there is no appropriate mechanisms yet developed for the continues supply of seed tuber.
Wheat	Production technologies	<p>Seven improved bread wheat varieties¹⁰ introduced through on farm demonstration and three varieties were selected for multiplication. The varieties were identified as high yielder, have the preferred grain size and color and are disease resistant and matured within the cropping season. Seed multiplication at farmers' and FTC field is undergoing for the selected varieties. In 2008/09 seed multiplication undertaken in 5.375 ha and 270 qt of seeds of bread wheat is produced. Production for grain wheat is expected to commence with the available seed.</p> <p>Wheat production using minimum tillage, appropriate chemicals, composting and fertilizer use demonstrated. The economic and environmental importance of conservation agriculture using wheat was demonstrated to experts, DAs, higher officials and farmers in two PAs with the help of 10 model farmers. In 2008/09 production year 6000 liters of round up chemical was used for this purpose.</p> <p>Mechanical wheat thresher is demonstrated in collaboration with Bahirdar mechanization and</p>

⁹ Guassa, Zengena and Jalen

¹⁰ HAR604 (Galema), HAR1868 (Shena), HAR1685 (Kubsa), HAR2536 (Simba), HAR3646 (Senkegna), HAR3730 (Gasaye) and HAR2562 (Densa)

		Selam vocational centers for 112 farmers in the previous years. Farmer awareness improved and demeaned even for better implements (a combiner). In 2008/09 three threshers came from Bahirdar during harvest time and gave service to farmers.
wheat	Input supply	Following capacity building efforts to build technical and skill and know how on use and application of herbicides, two private shops started to sell herbicides by providing technical application guidelines and oral clarification to farmers. One of these shops is established after getting advice from IPMS/OoARD.

Fogera

Chick pea	Input Supply	Farmer to farmer seed exchange system has been tried for new varieties of Chickpea, but it has not continued to be effective means seed exchange system (see 'New Variety' above)
Chick pea	Production technologies	Four new varieties of chick pea introduced that are high yielding and resistant to infestation of cutworm and root rot in 2007. The initial demonstration resulted a yield that ranged from 10-15 qt/ha. Following farmers' interest, a system for seed production and farmer to farmer seed exchange is promoted. However, since the farmer to farmer seed exchange system has not been effective, the new variety is found in small plots of few farmers.
Safflower	Marketing	Linkage created with a German company and a domestic oil crop export agency for marketing of safflower petal. As a result of the linkage local people from 16 PAs have continued collecting and selling the petal to a middle man working on behalf of the company. During 2008/09 a total of 480 kg safflower petal was collected and sold at a price of 24 birr/kilo. About 602(372 female)

		<p>Farmers and students benefited from collection and selling. Though the price has increased from 15-18 birr/kilo in 2007/08 to 24 birr/kilo in 2008/09, the total amount has decreased from 887 kg in 2007/08 to 480 kg in 2008/09.</p>
Upland Rice	Input Supply	<p>Farmers based upland Rice (Nerica) seed production and exchange system established. This farmer to farmer seed exchange system supported the expansion of the production of the new varieties to the 192 farmers (143 M, 49 F) in 14 Kebeles. Reports of the project show that about 60 % and 24 % of the farmers in 2008 used their own seed from previous year's production and in kind farmer to farmer seed exchange respectively. The rest 15 % purchased seed from the OoARD scaling out scheme that purchase seed from intervention PAs and sell to farmers in non intervention PAs.</p> <p>In addition to the distribution of seed within the Woreda, farmers from five PAs have also sold about 54 qt seed of Upland Rice to five Woredas in Amhara region and to an NGO working in Oromia Region at a price 800-100 birr/qt. Though farmers' based seed exchange system has been expanding, farmers who have specialized mainly in seed production have not yet emerged. In this regard, farmers voiced their concerns about the purity of seed used over time as seed supplied by some farmers have lost its purity because of mixing of X-Jigna varieties with upland rice varieties due to little attention given during threshing</p>

Upland Rice	Marketing	The concept of standardized grading is introduced by demonstrating the use of sieve of three sizes in collaboration with a private polisher. Varieties of rice dish and graded rice promoted during exhibition and great demand is expressed by restaurant owners. However, adoption of the sieve beyond the demonstration was not reported
Onion	Production technologies	<p>Improve variety of tomato (Shanty) were introduced and improved management practice and staggered production system is promoted. Tomato seed production system is also demonstrated. The new tomato hybrid variety (shanty) demonstrated in three PAs on three farmers plots on 0.073 Ha of land. The new varieties proved to be productive in two PAs yielding up to 450-550 qt/ha. However, the intervention couldn't go beyond demonstration as there is no supplier of seeds of the new variety in the area. Tomato seed production is demonstrated at farmers' field using new tomato variety (shanty, cylindrical shape tomato) and staggered production technique (planting 1-2 month prior to the usual time) is also promoted. In 2008, about 173 farmers planted tomato on about 22 ha of land using stager production. Farmers who used stagger production have sold 100-120 birr/crate while farmers who produced in the traditional way sold 50-70 birr/crate. Farmers also reported that they got adequate time to use their land in growing another crop.</p> <p>In onion intervention new variety (Bombay red) and improved management practice promoted. To improve input supply farmers based seed production system is established for onion (see input supply). Stagger production of onion to avoid lower price due to market saturation was</p>

		<p>demonstrated. In 2008/09 4.25 ha of land is covered by onion under stagger production. Participant farmers were able to harvest 1.5 month earlier than the normal harvest period. In general the concerted effort of different stakeholders significantly improved onion production in the Woreda.</p> <table border="1"> <thead> <tr> <th>Crop</th> <th>Baseline (2004/05)</th> <th>2008/09</th> </tr> </thead> <tbody> <tr> <td>Onion</td> <td>526</td> <td>1,233</td> </tr> <tr> <td>Tomato</td> <td>88</td> <td>863</td> </tr> </tbody> </table>	Crop	Baseline (2004/05)	2008/09	Onion	526	1,233	Tomato	88	863
Crop	Baseline (2004/05)	2008/09									
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Onion	Input Supply	<p>Onion seed production at farmers' field and farmer to farmer seed exchange system established. The number of farmers who engaged in onion seed production and area allocated for onion seed production has increased from 3 (all men) and 0.12 ha in 2004/05 to 17 farmers (3 female) and 6.75 ha, respectively. Though the price went up to 500 birr/kg in Sept. 2009, the average selling price of onion seed was 170-180 birr/kilo. In 2008/09 the Woreda has become a surplus producer of onion seed. More than 1,800 kg of onion seed was sold outside the Woreda (including Alamata in Tigray) at prices ranging from Birr 140-160/kg. since about 92 farmers (1 female) in 6 PAs planted 17.75 ha of land in 2009/10 finding adequate market has been identified and the project with partners are in the process of searching market outside the Woreda</p>									

Upland Rice	Production technologies	<p>Promotion and expansion of the improved upland rice varieties introduced three years ago have continued in both the previous intervention PAs and new PAs. From the zero ha in 2004/05, the total area covered by upland rice in 2008/09 has reached to 55.62 ha of land and an estimated 1,780 quintal seed and grain rice was produced. About 196 (175 M, 21 F) farmers who dwell in 14 kebel were involved in the production of the new upland rice varieties. As the average productivity ranges from 28-32 qt/ha, some farmers are reported to replace teff with upland rice, which gives four times higher yield than teff.</p> <p>The technology is also shared to other areas such as DEra, Libo, Semen Gonder zone and Wolega raea</p>
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Metema

Cotton	Production technologies	<p>Improved cotton variety (Deltapine), dressed with a chemical (Cruiser) introduced to fight pest damage. Productivity which was lowered to 8-12 qt/ha has increased to 25-33 qt/ha with the use of chemically treated improved variety. In 2007, about 146 qt of improved and treated seed was distributed to farmers who saw 1046 ha of land in 10 PAs. popularization of cotton production with the use of high yielding variety (Deltapine 90) and seed treatment against insect pests continued There is already a demand by farmers for about 160 qt of improved seed which is dressed against flea beetle</p>
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		<p>In order to improve production and reduce production costs, the project introduced and demonstrated conservation tillage practice through the use of Round UP chemical for minimum tillage introduced and promoted for cotton, rice and sesame as demonstration since 2005. use of roundup for conservation tillage is becoming popular and is widely adopted by many farmers throughout the Woreda (see input supply)</p> <p>Use of BBM for excess water drainage demonstrated but adoption of the technology is not reported.</p>
Cotton	Input supply	<p>Large scale farmers were linked to input suppliers in the Awash Valley. Farmers bought 56 quintals of improved seed which were introduced and planted in 56 ha of land. More work is needed to strengthen the capacity of cooperatives, which are currently inefficient, so that they can address the needs of the smallholder cotton producers who are demanding the technology. Even though the demand for more improved cotton seed is coming, the Ethiopian Seed Enterprise (ESE) could not meet the requirements. The project is facilitating linkage among few large scale growers and seed producers in Awash. For long term solution however, the project staff facilitated input supply through cooperatives union from awash</p> <p>To improve the supply of inputs for cotton production, the cooperatives and private input supply</p>

		shops in Metema were able to provide chemicals for the minimum tillage practice. Ambasel trading has also brought similar herbicide which was distributed to retailers in the Woreda. In 2008/09 about 3500 liters of various selective herbicides were sold through out the Woreda.
Cotton	Marketing	Linkage is created with cotton farmers and a ginnery in Gonder. The ginnery agreed to pay a premium to cotton farmers. Farmers also linked with Bahirdar textile, but no tangible result is yet reported due to this linkage.
Fruit	Production technologies	<p>Two varieties of banana¹¹, two improved varieties of mango¹² and solo papaya introduced with management practices such as planting method, water casement structure and improved banana ripening method promoted. Farmer-to-farmer sucker supply system is working well and serving as a source of income for the pioneer farmers</p> <p>As the results of the momentum created by innovation in irrigated banana production, production of vegetables (onion, tomato and other leafy vegetables) also encouraged and expanded. In vegetables, two varieties of tomato, one variety of onion and one variety of pepper (Marko fana) is introduced through demonstration. According to the district OoARD report, the irrigation agriculture is widely practiced in 15 PAs of the woreda and about 794 (14 % women) farmers are involved in growing fruits and vegetables on about 169 ha of land (vegetables in 87.9 ha and fruits on 81.7 ha). Despite the big progress in the expansion of irrigated agriculture in the Woreda, skill</p>

¹¹ short and Jaint Cavendish

¹² Kent and apple mango

		gap is reported by farmers with regard to vegetable production.
Fruit	Input supply	<p>In order to solve problems related to input supply, mainly vegetable seeds and agro-chemicals private shops which supply vegetables seed and agrochemicals established in the Woreda capital and other smaller towns. However, farmers are not satisfied by the services given by these shops.</p> <p>Farmer to farmer banana sucker supply system is established. Farmers have become self sufficient in the supply of dwarf Cavendish banana suckers. Up to 2008/09 up to 6000 suckers are believed to be sold to farmers in the Woreda, other neighboring Woredas and to the Sudan at an average price of 10 birr/sucker. However, demand for grafted mango and citrus trees have not yet solved due to lack of sustainable input supply system. But recently efforts are being made to establish local private nurseries to create long term solution to the problem.</p> <p>In order to solve input supply and marketing of vegetable and fruit production, farmers groups have organized themselves to facilitate input and output marketing of vegetables and fruits. To this end, three marketing co-ops have been organized and legally registered. However, they are not yet started providing inputs. Other challenges mentioned by farmers include:</p> <ul style="list-style-type: none"> • Marketing problem: <ul style="list-style-type: none"> ○ Banana ripening

		<ul style="list-style-type: none"> ○ Market place for other vegetables ● Input Supply <ul style="list-style-type: none"> ○ Adequate supply of the necessary chemicals and seeds of vegetables ○ Quality of inputs (seeds from Sudan, parts of motor pumps) <p>Low level of awareness, knowledge and skill with regard to vegetable production</p>
Fruit	Marketing	<p>Three marketing cooperatives have been established in two PAs to facilitate input and output marketing for fruits and leafy vegetables. But they are not yet functional in providing inputs or facilitating output marketing.</p> <p>Banana ripening method using kerosene burner is introduced, but the method is not yet adopted as it needs air tight room and the problem still exists. Linkage with fruit wholesalers in Gondar has been made for the sale of bananas, but since there is no surplus product beyond the Woreda demand, products are sold only within the Woreda. Finding market place for vegetables and fruits however is one of the big challenges faced by producers, which might be solved through the new cooperatives formed.</p>
Rice	Production technologies	<p>New Variety of rice¹³ (Upland rice) (re) introduced. Seed grower farmers started on farm rice seed production for three new varieties of upland rice. Farmers have planted but shortage of water caused low yield.</p>
Rice	Input	<p>Farmer-to farmer seed supply system established to satisfy the increasing demand of the new rice</p>

¹³ Nerica 3, Nerica 4 and Superica 1

	Supply	varities. NERICA rice seed multiplication activity was carried out on 232 farmers' fields on 86 ha in 6 PAs with the help of Goder Agricultural Research Center
Rice	Marketing	Rice polisher is demonstrated and the polisher is given to farmers as a demonstration material.

SNNPR

Alaba

Haricot Bean	Production technologies	Improved haricot bean varieties ¹⁴ introduced through demonstration. Two of varieties (Nasir and Dimtu) selected by farmers and adopted by many farmers across the Woreda. Though farmers prefer the new varieties for its productivity, taste, resistance to drought adequate availability of seed is a limiting factor. In order to curb the problem of seed shortage and ensure quality of seeds IPMS/OoARD and Melkasa Research Center established seed bank by organizing farmers in different groups (see input supply). Improved weed control and pest management promoted using bio-pesticides and chemicals were also demonstrated. However bio-fertilizer has not been adopted because it is not available in the market.
Haricot Bean	Input Supply	Twenty people in two groups in two PAs established seed bank for improved varieties of haricot bean to avoid adulteration of seed (see production technology haricot bean). Three investors in 30

¹⁴ Awash I, Dimtu, Awash Melka and Nasir

		ha of land have also started seed multiplication. In 2008/09 64 households have produced 104 qt of Nasir and Dimtu varies. In 2009, 697 households engaged in seed multiplication on 44.25 ha.
Soya bean	Production technologies	Soya bean varieties ¹⁵ introduced in 8 PAs
Teff	Production technologies	New varieties of Teff introduced and farmers' based seed multiplication system established together with ESE. Improved weed control and pest management promoted using bio-pesticides and chemicals. ORGA an organic fertilizer demonstrated and promoted (see also input supply). Mechanical Teff thresher demonstrated and with a credit fund of IPMS a private entrepreneur purchased the thresher and has started giving service to farmers in different PAs.
Teff	Input Supply	Farmers' based Teff multiplication system established for new teff varieties. About 190 farmers engaged in seed multiplication of cross-37 Variety and they transformed as seed multiplication cooperative. About 275 farmers found in 5 PAs engage in this activity They have sold 1050 birr/qt while the local variety is sold by 800 birr/qt. now they have also started seed multiplication for wheat with 67 households in 70 ha of land in 5 PAs.

¹⁵ Awassa 95, Williams, V.coker 240

		<p>Private mechanical Teff thresher introduced and continued to give service to farmers. (see appropriate technologies and process for Teff)</p> <p>Mechanical Teff thresher was demonstrated at market place. A private entrepreneur who purchased the machine using IPMS credit fund started giving threshing service to farmers at a price of 35 birr/hr. The machine improves grain quality of Teff and reduces cost of post harvest processing.</p>
Hot pepper	Production technologies	<p>The use of drip irrigation demonstrated and promoted among farmers (15 male and 2 female). 10 drip irrigation materials were purchased by farmers through IPMS credit fund but farmers have not started using the equipments because of the extended dry period</p> <p>seven Improved weed control and pest management promoted using bio-pesticides and chemicals for teff, haricot bean and hot pepper</p>
Hot pepper	Input supply	<p>The provision of private crop protection service facilitated by training selected farmers and supporting them by providing credit for the purchase of chemicals and other required materials. The service providers have continued providing service, but since the price of the</p>

		<p>traditional/informal sprayers is low, most farmers go to the informal service providers. A study conducted by the project staff¹⁶ reported that private crop protection service providers served 1104 households on 1707 ha of land in 19 PAs during the 2007/08 production season mainly for teff and pepper with an estimated financial benefit of 2,304,450 birr.</p> <p>Input shop established by Menchoneon Farmers' cooperative Union continued to provide service to farmers coming from different Pas of the Woreda. However, farmers reported that the service provided by the Union has become irregular and below the standard. According to OoARD experts, the internal management problem of the Union is the main reason for the recent weakening of the input supply function of the Union Shop.</p>
Hot peeper	Marke ting	<p>IPMS/OoARD facilitated calibration weighs at market place and launched platform discussion to set market regulation concerning timing and pricing of hot pepper. However, the effort hasn't showed tangible results. Market has started to be finished before 6 pm. A total of 106 balances were calibrated and it is believed that the calibration is part of market regulation to maintain standards and quality.</p> <p>IPMS/OoOARD facilitated the provision of market information collection and dissemination in the three main market sites. However, the service has become irregular due to staff turnover. Four</p>

¹⁶ Towards Pluralistic Agricultural Service Delivery: The Case of Private Crop Protection Service in Alaba Special District, Southern Ethiopia, by Abebe Shiferaw, Tesfaye Lemma, Dirk Hoekstra

		Billboards were constructed and kept at 4 model FTCs but they have not yet started market information dissemination.
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Dale

Coffee	Production technologies	Improved coffee variety (1377 Angefa) introduced.
Coffee	Input supply	Farmers based seedling supply promoted for the new coffee variety. Three operators now produce and sell Angafa variety to farmers in three PAs (see input supply for fruit).
Fruit	Production technologies	Improved varieties of avocado and mango ¹⁷ varieties introduced. Improved land preparation, planting methods also demonstrated with variety introduction. Farmers trained in Improved nursery and seed as well as orchards management. To insure sustainable supply of grafted fruit seedlings farmers' based fruit nursery established (see input supply for fruit).
Fruit	Input supply	IPMS/OoRD encouraged and facilitated farmers previously engaged in raising coffee seedlings to enter into fruit seedling production business so that farmers who come to buy coffee seedlings also easily buy fruit seedlings. Six households are engaged in raising and selling improved avocado and mango seedlings. The Melkasa Agricultural Research Centre provided the scions and also

¹⁷ Etinger, Hass, Baccon, Fruite and Apple mango

		<p>assisted in grafting by sending their technical assistant to Dale.</p> <table border="1"> <thead> <tr> <th>Farmer based fruit nursery (Avocado & Mango)</th> <th>Baseline (2004/05)</th> <th>2006-09</th> </tr> </thead> <tbody> <tr> <td>The number of grafted and distributed fruit seedling</td> <td>0</td> <td>5,304</td> </tr> <tr> <td>No of private suppliers of grafted seedling for avocado and mango</td> <td>0</td> <td>6</td> </tr> </tbody> </table> <p>Farmers, especially those who received the seedlings through safety net programs haven't got the necessary knowledge about the improved varieties. The extension service in 'non-intervention PAs' about the grafted seedlings was found to be weak. Most of the extension work was limited to promotion of the new varieties during meetings and farmers field days, but practical trainings on fruit production is hardly exist. Local demand for grafted Avocado and Mango is limited currently and nursery owners complain shortage of demand for their seedlings. The safety net program of the OoARD is trying to use part of the money allocated for the program to buy seedlings and distribute to farmers in different PAs.</p>	Farmer based fruit nursery (Avocado & Mango)	Baseline (2004/05)	2006-09	The number of grafted and distributed fruit seedling	0	5,304	No of private suppliers of grafted seedling for avocado and mango	0	6
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Haricot bean	Production	Improved haricot bean ¹⁸ varieties introduced. Farmers seed bank system introduced for maintaining seed quality of the newly introduced haricot bean varieties. The use of bio fertilizer									

¹⁸ Nassir, Cranscope, DRK, Ibado, Omo95, Dimtu, Awash1, Awash Melka, Awassa Dume

	technologies	demonstrated but not adopted as there is no appropriate input supply system. Farmers based haricot bean seed system established to bulk up seed source for the newly introduced varieties (see input supply)
Haricot bean	Input supply	<p>Farmers' based seed supply system established for improved varieties of haricot bean. Weynenata farmers Cooperative supported with advice and credit fund started to engage in collecting and marketing of haricot bean seed produced by seed procuring farmers The Woreda OoARD in collaboration with the project has identified 50 farmers in 7 PAs for this purpose. The Awassa research centre has provided 1,100 kg of basic seed and technical training for Woreda staff and DAs who will work with seed producing farmers.</p> <p>Weynenata cooperative in Dale linked with exporters for future haricot bean marketing. The Cooperative also took credit fund to facilitate bulk production and distribution of haricot bean seed by farmers</p>

Oromia

Goma

Coffee	Production technologies	Improved coffee sun drying was introduced to improve the quality of coffee and thus increase income. About 600 drying material supplied for 300 farmers from 11 PAs who produced 103,376 kg of quality coffee in the previous years. Linkage has also been made with market parties interested to offer a premium price for quality coffee. To access better market, wide promotional
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		<p>work, mainly distributing samples to prominent exporters (9 exporters and roasters) for cup quality testing was made Auction organized, premium price (20% higher than the normal coffee) offered, but farmers finally reject the offer seeking better price. Since farmers discouraged from the outcome of the first year price situation and also due to unavailability of the technology from the suppliers, no additional farmers bought the wire the in 2008/09. However, about 380 farmers showed interest to buy the technology. Some of the initial farmers reported they used the wire to dry part of their coffee.</p>
Coffee	Input Supply	<p>Farmer based seedling production using vegetative hybrid coffee multiplication technique introduced for a new coffee variety (Aba Buna). The farmers selected for this activity used almost all the 100 coffee seedlings for him during the first year. In 2008/09, about 10 farmers (30% women) were organized in one PAs close to a river to produce 100,000 CBD resistant potted coffee seedlings. To encourage this, IPMS credit scheme was used and a total of Birr 71,000 was disbursed. This includes loan for avocado fruit seedling raising activities also.</p> <p>Supply of quality farm tools is facilitated through private shops by building capacity of local farmer-traders in accessing quality tool importers, linking them with the right tool dealers and providing credit for the purchase of the items. Five farmer traders were selected in five locations. Even though these farmer-traders managed to sell 3701 farm tools at lower price than the exiting market price. However they haven't continued the supply as they didn't get credit for the second</p>

		time in 2008/09.
Coffee	Marketing	Sun drying technology introduced (see production technologies)
Fruit	Production technologies	Improved varieties avocado and its propagation technique introduced. Initially about 300 grafted seedlings of improved avocado varieties were distributed to 6 farmers (3 women) in five PAs. in order to facilitate sustainable supply of grafted seedling of improved varieties, farmers' based seedling supply system established (see input supply).
Fruit	Input Supply	In Goma, about 10 farmers (3 women) were organized in one PA to produce 10,000 grafted seedlings of avocado. To encourage this activity, IPMS credit scheme was used. In 2008, 3358 avocado seedlings were grafted. In 2009 9000 Mango and 11403 Avocado seedlings are being produced in 12 PAs.

Meiso

Fruit	Production technologies	Mango(Tommy), Avocado, Papaya (Solo), and banana (short & Giant Cavendish, Poyo and Williams) fruit varieties introduced. So far 1600 seedlings of mango and avocado seedlings distributed to farmers in 12 PAs.
Fruit	Input supply	Private fruit nursery established for Avocado, Papaya, and Banana and Guava seedlings. Four nursery operators have prepared and sold about 5000 seedling of mango and avocado at a price of

		10-15 birr/seedling and 800 papayas at 1 birr/seedling. Even though, the private nursery owners benefited from the activity, they stopped grafting because they face problems.
Haricot bean	Production technologies	Over 400 kg of improved haricot bean seeds were obtained locally and provided as demonstration materials to farmers in 5 PAs. Over 16 farmers had used their own seed and also provided seed to about 80 farmers in 8 PAs.
Onion + Hot pepper	Production technologies	Two varieties of onion (Adama and Bombe) were introduced during the initial years of the project. Onion bulb production has been scaled out by OoPRD into 20 PAs by using local and improved varieties on a total of 13.5 ha. Onion seed production technique introduced (see input supply). Together with onion production hot pepper production is also expanding in 11 PAs with 120 farmers.
Onion + hot pepper	Input supply	Farmers based onion seed supply system is promoted. In 2008/09 3.5 qt of onion seed is produced in 0.25 ha of land. Five farmers have produced over 50,000 hot pepper seedlings and sold them at Birr 0.05- 0.20/seedling

Ada

Teff	Production technologies	<p>Three varieties of teff (CR-37, CR-354 and DZ-357-Quncho) demonstrated on FTCs. Teff Quncho Varieties scaled out in 20 PAs used by 9266 farmers covering 13,012 ha of land. Farmers said that they get 25-32 quintal of teff per ha while previously they used to get 8-12 quintal of teff per ha using other types of teff varieties. Thus, increase in production and income of farmers is resulted.</p> <p>Demonstration of seed multiplication for teff on farmers field has been done and with it improved management practices were included which are being used by farmers.</p>
Wheat	Production technologies	<p>Five varieties of wheat demonstrated on FTCs .Wheat variety HAR 1685 expanded in 22 PAs with 3504 farmers participation covered 2243 ha of land and another variety HAR 604 used in 5 PAs by 481 farmers on 334 ha of land and farmers said that they get 60-67 quintal of wheat per ha.</p> <p>Demonstration of seed multiplication for wheat on farmers field has been done and with it improved agronomic practices were included</p>

<p>Chickpea</p> <p>Lentil</p> <p>Faba bean</p>	<p>Production technologies</p>	<p>Four varieties of chickpea (Arerti, arbo, shasho and Marye or wereke) and Lentil varieties demonstrated on FTCs. Lentil variety Alamaya used in 12 PAs by 2144 farmers on 1236 ha of land and chickpea Variety Ararti used in 10 PAs by 739 farmers on 454.6 ha of land. Farmers said that they get around 50quntal of chickpea production per ha while previously they get half of it from a hectare of land using other chickpea varieties.</p> <p>Bio fertilizer for chickpea, faba bean and lentils was demonstrated on farmer's field. The farmers used it in 2008/09 and bio fertilizer use is one of the reasons for a higher increase in chickpea production as discussed above. However, in 2009/2010 bio fertilizer is not used due to lack of information where they can find the fertilizer except in Hidi PA where they have applied it for Lentils.</p> <p>Apron Star (seed dressing chemical) and inoculums for chickpea demonstrated on farmer's field. It was adopted by 7 farmers as seed multiplication sites plus for their production. Farmers said that the chemical contributed for the increase in production of chickpea. Inoculums for faba-bean demonstrated on farmers' field.</p> <p>Demonstration of seed multiplication for chickpea on farmers field has been done and with it improved agronomic practices like land preparation, rotation,</p>
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		pesticide use, weeding time etc were included
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Onion	Production technologies	<p>Adama Red variety of onion introduced with improved management practice of double row planting and furrow irrigation among women vegetable growers saving and credit group. Women groups for onion are satisfied in 2 rounds but this year (the third round) it is only some of them who continue planting onion on their own. One of the members in the onion group started onion and fruit nurseries and she has a plan to use it for the coming year and also to provide the group. In addition, from their saving which reach 5000, they give credit for those who are in short of money from the group with 100% interest rate.</p> <p>Motor pumps supplied to farmers on credit basis through Erer union to be used for vegetables. And it is now being used in Godino, Hidi, Kality and Denkaka PAs mostly for tomato and onion production.</p> <p>Onion seed production technique demonstrated on farmers field and farmers group organized along a river. Improved management practice of double row planting and furrow irrigation was introduced and being used by farmers.</p>
Fruits	(Variety, input supply)	<p>Grafted fruits (three varieties of Avocado, 3 varieties of orange, two varieties of Lemon, one variety of Banana and papaya) were introduced.</p> <p>Farmer nursery sites continued to supply grafted seedlings of avocado and</p>

		<p>mango. Farmers are satisfied and they purchase seedlings from these nurseries. But nursery owners complain about inadequate demand at local level due to limited awareness about the productivity, and they still need the support of the OoARD safety net program to facilitate marketing of seedlings</p>
Fruit	Input Supply	<p>Farmers based fruit nursery established for production of the newly introduced improved fruit varieties like mango and avocado(see above)</p>
Teff Wheat Chickpea	Input supply	<p>Farmer based teff, wheat and chickpea seed multiplication system introduced and it is being used. Seed purchasing program (seed platform) was established to solve the problem raised by seed producing farmers due to price variation given by Asella research center and Erer union, and panel discussion have been conducted by inviting different stakeholders from(DAs, woreda experts, farmers, Assela research, Erer union, East Shoa zone etc) with around 40 participants.</p>
Chick pea Vegetables Apiculture Fattening	Production technologies	<p>Yerer Union continued supplying chick pea seeds and it also include training and technical support. In addition, they are involved in credit facilitation for fattening, motor pump (for vegetables) and beekeeping (transitional beehive).</p>

Any type	Marketing	Market Bill boards have been introduced in FTCs to provide weekly market information of agricultural products and utilization of the billboards has improved.
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3.2 Livestock Commodities

Tigray Region

Alamata

Dairy	Production technologies	<p>Improved feeding, housing and other husbandry practices were promoted through study tours, trainings and follow-up advice service. Farmers are advised to use improved breeds and IPMS/OoARD facilitated the supply of 40 Begait breeds for 36 farmers in 5 PAs. Even though farmers and OoARD wanted to scale out to other farmers and PAs, it was not successful due to significant increase in the cost of the cows.</p> <p>Jersey and Holstein breed introduced using AI and bull service. Begait breed introduced for large ruminant dairy development (see also input supply).</p> <p>Improved forage species introduced. 600 cuttings of Napier grass, 19.5 kg of pigeon pea, 0.25 kg of buffle grass and 114 kg of cow pea and other forage species such as lablab and sunhemp were introduced</p>
Dairy	Input supply	<p>Private bull service introduced in one PA with one Holeystein/Friesian bull serving 4 PAs. After observing the success of this intervention, IPMS, OoARD and World Vision facilitated the availability of 4 exotic bulls by a private dairy farmer. World Vision purchased the 4 bulls and distributed them to 4 volunteer farmers in 4 PAs (Timuga, Selen Wiha, Limat & Gerjele) through Shewit Alamata Union</p>

		<p>Eestrus synchronization prior to AI service tested in 2008. 54 farmers brought 88 cows and 38 cows treated with hormone. 29 out of 38 showed signs and given AI service. Local cows served with Jersey semen and Begayet breeds served with Holstein semen.</p> <p>Swampy area previously used for uncontrolled grazing partly reclaimed for crop production in two PAs, and adaptability of forage species is tested on part of the reclaimed land in two PAs</p> <p>One FTC started distributing the seeds and cuttings of forage crops</p> <p>A private dairy farmer installed an animal feed processing plant for production of concentrate feeds with a capital of about 150,000 Birr. This private input supplier participated in the technology shopping tour, organized by IPMS, to Debrezeit in March 2008. The input supplier has started supplying concentrate feeds to buyers within and outside the PLW</p>
Dairy	Marketing	<p>A dairy cooperative (Desta milk marketing cooperative) established by OoARD/IPMS in 2005 with initial membership of 20 individuals have continued its activity. In 2007 membership increased to 135 individuals with an average daily milk collection of 120</p>

		liters.
Fattening	Production technologies	Fattening is promoted through better feed management and utilization practice promoted in 5 PAs. Farmers trained in improved fattening package and encouraged to practice fattening by providing credit to 31 farmers. A youth group with 24 members formed Addis Alem fattening group and started small ruminant fattening and reported encouraging results in terms of profit earning.

Astbi

Apiculture	Production technologies	<p>Apiculture interventions in Astbi involves bee forage development, colony production , skill development in modern bee keeping.</p> <p>In bee forage development, development of seasonal bee forage enrichments around bottom and slopy lands, and water points helped seasonal availability of best bee forage plants within the reach of bee colonies. Bee forage has been developed on 3,473 ha area closure and enriched on 582 ha sloping lands, 1,746 ha bottom lands and 1,417 ha irrigated sites Seasonal availability and cover-abundance of best bee forage plants increased within the reach of bee colonies</p>
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		<p>In colony splitting, the technique of colony splitting introduced through practical training. In this regard, farmers have started splitting colony by themselves; about 90 colonies have been splitted in different PAs in 2008/09.</p> <p>Promotion of modern beehive, bee forage development, and other modern apiculture methods was conducted together with training and follow-up services. The effort believed to improve productivity from about 5 kg/hive/year in 1997 to 80-100 kg/hive/year in 2007 and increase the number of modern beehives significantly.</p> <ul style="list-style-type: none"> At present there are about 19,272 honey bee colonies (6,012 colonies in modern and 13,260 in traditional hives, yielding an income of about Birr 18-21 million from honey and colony sale benefiting about 10,878 households (19% FHHs). <table border="1" data-bbox="548 1011 1392 1258"> <thead> <tr> <th data-bbox="548 1011 915 1125">Year</th> <th data-bbox="915 1011 1392 1125">No of beehive</th> </tr> </thead> <tbody> <tr> <td data-bbox="548 1125 915 1182">2004/05 (baseline)</td> <td data-bbox="915 1125 1392 1182">12,364 (17 % in modern beehives)</td> </tr> <tr> <td data-bbox="548 1182 915 1258">2008/09</td> <td data-bbox="915 1182 1392 1258">19,272 (31 % in modern hives)</td> </tr> </tbody> </table>	Year	No of beehive	2004/05 (baseline)	12,364 (17 % in modern beehives)	2008/09	19,272 (31 % in modern hives)
Year	No of beehive							
2004/05 (baseline)	12,364 (17 % in modern beehives)							
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Apiculture	Input Supply	Bee forage enrichment is done (see production intervention).						

		Community based colony splitting introduced in modern hives. This intervention is expected to make farmers less dependent on external colony sources and can generate additional income for those engaged in selling colonies. Farmers who received training on queen splitting have started queen splitting and so far have splitted about 90 colonies.
Apiculture	Marketing	Market linkage was created with farmers in Astbi and honey traders and processors in major towns. Telephone number of traders collected and shared with producers. Experts and farmers reported this intervention contributed to increased price of honey. Differences in honey price at farm gate and Mekelle narrowed from 40-45% to 10-20%
Dairy	Production technologies	The dairy development mainly focused on improved management practice and improving animal feed. As a means of improving grazing area management and improvement of area closure with cut and carry feeding system was promoted at the beginning of the project. Enrich/develop degraded sloppy lands with improved grasses (Phalaris and Rhodes ¹⁹) and forage legumes (Tree Lucerne and Sesbania) were also done. The response of grazing lands to fertilizer application was also demonstrated in 4 PAs so as to mitigate the expected loses of productivity due to repeated harvest of biomass. Establishment of Napier grass along the irrigated canals, river banks and gullies also took place. As a result of these interventions Baler and donkey pulled cart were introduced for hay making as a demonstration material

¹⁹ three accessions of improved Napier grass , Desmanthus vigratus, Medicago sativa (alfa alfa), Chloris gayana (Rhodes grass) Sesbania sesban, Casia struttii, Sesbania, Sesbania sesban, Eragrosis curvula introduced in farmers field, FTCs and nursery cites. Phalaris and Tagasaste species have been also planted to rehabilitate sloping lands and as a source of cut and carry feed for livestock.

in four PAs. 4 PAs²⁰ have transformed in to fully cut and carry system. Other PAs have particlaly changed to cut and cary system of feeding. About 4553 households in bottomlands and 1251 households in slope areas are reported to be beneficiaries of this best practice. With improved forage development interventions; dairy, fattening and also apiculture are believed to be encouraged and revitalized. With improved forage development, resource poor female headed households have better benefits from the forage plots. They rent their forage plots for 10-20 times more than the unimproved forage plots.

The number of improved dairy cows has increased from 122 in 2004/05 to 422 in 2008/09

Intervention type	Area (ha)	No. of PAs
Forage on degraded lands with intervention (harvested once/yr)	581	8
Forage on bottomlands: Year round cut and carry system of feeding	1746	13

²⁰ Habes, Barka Adi Sebha and Dibab Akorein

		Forage on bottomlands:5,764 16 Partial cut and carry system of feeding (harvested 3-4 times/yr)
Dairy	Input supply	Cut and carry feeding system for dairy (see production technologies). Three accessions of Napier grass have been planted in 7 FTCs and are serving as sources of planting materials to farmers. With regard to planting phalaris and legues in 2008 alone about 122,000 Phalaris splits and 14,700 legume shrubs were planted on 168 ha of grazing land, with the participation of 2,559 community members in 4 PAs

Amhara

Bure

Apiculture	Production technologies	Modern beekeeping in transitional and modern beehive, which includes colony transfer, bee forage development is promoted. The technique of colony splitting which is new technique in the PLW introduced in order to increase the availability of bee colonies. Eighteen farmers from 6 PAs received training on colony splitting and queen rearing techniques and three transitional hives were provided for the activity. So far 11 farmers (all
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		<p>male) started colony splitting effectively and they have splited 44 colonies in to 88 colonies in 3 PAs.</p> <table border="1"> <thead> <tr> <th>Types of hives</th> <th>Number of beehives 2006/07 (baseline)</th> <th>Number of beehives 2008/09</th> </tr> </thead> <tbody> <tr> <td>No of hives (traditional, transitional and modern)</td> <td>13,717 (14.1 % in modern)</td> <td>14, 773 (14.7 % in modern)</td> </tr> </tbody> </table>	Types of hives	Number of beehives 2006/07 (baseline)	Number of beehives 2008/09	No of hives (traditional, transitional and modern)	13,717 (14.1 % in modern)	14, 773 (14.7 % in modern)
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Apiculture	Input Supply	<p>Farmers were linked to beekeeping input supplier at Bahir Dar and subsequently, farmers purchased various accessories.</p> <p>Colony splitting introduced (see production intervention) 85 households in 16 PAs have splited 198.</p>						
Apiculture	Marketing	<p>Previously dysfunctional beekeepers cooperative (Kokeb bee product marketing cooperative), with 48 members (all men), is reorganized in 2007 and has become operational after advisory and training services were given for its members and officials. Membership grew to 282 and the cooperative involved in honey marketing. The project linked the cooperative with honey traders in different parts of the country.</p>						

Dairy	Production technologies	<p>Back yard forage development: Seeds of Vetch, Cow pea, Oats, Napier grass and Rhodes distributed to farmers for backyard forage development for dairy and fattening in 4 PAs. Farmers have started planting forage plants on their backyard. 177 (male-169, female-8) farmers in 11 PAs planted an area ranging 0.04-0.25 ha. Totally 22.925 ha of land is covered by improved forage species. Napier grass multiplication is also done in 4 FTCs besides farmers and government nursery. But due to land shortage it is not widely adopted by those who have large plot</p> <p>Urea treatment: Earlier urea treatment is demonstrated to 121 (male-117, female-4) farmers. However, adoption is not yet reported. High cost of urea and rejection by cattle is reported as low level of adoption.</p> <p>The practice of enclosure of natural grazing land was promoted to convince community members to practice enclosure of natural grazing land. Improvement reported on health, reduced additional feed, encourage fattening. 1050 (30 % female) farmers 8 PAs in an area of 63 ha started to enclose and distribute to members at harvest at equal rate. Baler is introduced for hay making as a demonstration material in two PAs in Arbisi and Wangedam at individual level but farmers are not using it as they sell hay at stand.</p>
Dairy	Marketing	Forty one people (3 female) were organized and formed Bure- Damot milk development and marketing cooperative; the coop got credit for purchase of cart, horse and

		refrigerator to improve marketing of products. The cooperative opened new milk selling café in Bure town. The volume of milk supplied to the shop and sold to users increased from 70-100l/day in the previous year to 150 – 200l/day now
Large ruminant fattening	Production technologies	<p>Large ruminant fattening using improved feeding, health and management practice promoted using credit fund for farmers who enrolled in the business of cattle fattening.</p> <p>IPMS project together with OoARD raised awareness about the possibility of year round cattle fattening through use of urea treated crop residue and other locally available feed resources. Moreover, investors have adopted the technology and knowledge and have started year round cattle fattening around Bure town. One of the trained DAs quit his government job and started his own cattle fattening activity</p> <p>Farmers started cattle fattening by feeding oilseed and cotton seed cakes purchased from Gonder. This practice is new to the PLW. The supply of industrial by products through private shops and cooperatives is facilitated (see input supply)</p> <p>The project distributed seeds of 10 forage species to cattle fattening farmers in 10 PAs to demonstrate the importance of backyard forage development. This has created demand for forage seed supply in some PAs. Consequently, IPMS project in collaboration with</p>

		<p>Andassa Research Center planned to supply seed of Rhodes grass.</p> <p>In 2008/09 223 farmers (male-163, female-60) participated in improved fattening in 7 PAs and about 1893 cattle fattened in the Woreda.</p>
Large ruminant fattening	Input Supply	<p>The practice of enclosure of natural grazing land was promoted to convince community to practice enclosure of natural grazing land (see input supply for dairy)</p> <p>The supply of industrial by products through private shops and cooperatives is facilitated. The project provided technical advice to individuals to supply industrial by products for dairy and fattening groups. Three farmer-traders provide industrial byproduct (wheat bran and Nough cake) to fattening groups. Fattening farmers also linked with oil milling factories. One trader also opened an industrial by product selling shop for cattle fatteners and dairy operators</p>
Large ruminant fattening	Marketing	<p>Cattle fattening farmers used to sell animals individually in the local market. However, IPMS/OoARD organized farmers as a cooperative (Andinet animal production, fattening and marketing cooperative) in order to sell their animals collectively and facilitate input supply. Credit access is facilitated and linkage was created with input suppliers and</p>

		potential buyers (military camp, meat processing company). This cooperative purchased cotton seed cake from Gonder and supplied it to its members. In addition, cattle fattening farmers have been linked with a locally available oil crop milling factory to get industrial by-products. But the cooperative hasn't yet helped in facilitating marketing.
Poultry	Production technologies	<p>To boost production, farmers were trained in poultry rearing, feed formulation from locally available feed resources, preparation of poultry rearing equipment from locally available materials and available technologies to improve the productivity of chicken</p> <p>To improve the supply of improved day old chicks in <u>Bure</u>, the establishment of a privately owned day-old chicken multiplication center was facilitated, including demonstrating the efficiency of a locally made incubator. This was further supported with a loan from ACSI's credit innovation fund</p> <p>Three youth organized for modern poultry production, facilitated supply of improved breeds. However, the group couldn't continue the activity. In addition to the frequent interruption of power supply, being engaged in other economic activities of the owners were mentioned as reasons for not functioning of the intervention.</p>
Poultry	Input Supply	Landless youth group supported to establish privately owned day-old chicken multiplication center and helped the demonstration of the efficiency of locally made incubator for day old chicken multiplication. However, the intervention is not continued

		(see production intervention).
Small Ruminant fattening	Production technologies	Sheep fattening using improved feeding and handling practice with credit promoted. IPMS project in collaboration with Andassa Research Center trained farmers, DAs and experts on improved sheep production technologies. Sheep breeding and fattening groups (women and youth) have been established in six model PAs. IPMS project released 420,000 birr for credit to support sheep breeding and fattening activities. 52 farmers (male-31, female-21) participated in improved fattening at Wundigi, Arbisi, Fetamsentom, and Bekotabo in 2008/09 and fattened 313 sheep

Fogera

Apiculture	Production technologies	<p>Modern apiculture is promoted by building the capacities of framers. Farmers trained the technique of colony splitting and trained farmers started colony production using the technique of queen splitting for 24 farmers. Honey extractor and press provided as a demonstration material. As a result of the various interventions, the number of transitional and modern beehive increased from 122 in 2004/05 to 1,141 in 2008/09.</p> <p>Though the technology is successful during the training, most farmers reported they failed to successfully split the colony by their own as the split bee colonies becoming strong.</p>
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		<p>Though farmers trained in modern apiculture, availability of beekeeping accessories and the ever increasing use of pesticide by vegetable production were reported as major challenges for the apiculture sector in the Woreda. Two private traders opened shops for supplying apiculture accessories, but they are seasonal.</p>
Dairy	Production technologies	<p>Intervention in the dairy sector include improvement in feed, breed improvement and health</p> <p>Intervention in feed improvement include enhancing the use of grazing land , introduction of backyard forage and improving the available feed using the practice of urea treatment.</p> <p>In grazing land improvement eradication of Amecela weed from grazing lands, oversaw grazing lands with grass and legumes forage species and introducing community management of grazing land for cut and carry system are the major components. As the case of the previous years, in the 2008 the project with the Woreda OoARD cleaned 19.5 ha of grazing land in four PAs by mobilizing community members. Ten individuals who have 3 ha of private grazing lands have also cleaned their grazing land.</p> <p>In an effort to introduce area closure, about 10 ha of communal grazing land in two PAs (4.5 ha in Shina and 5.5 ha in Kuhar) were enclosed after clearing the Amecla weed. The grazing land was divided and allocated to individuals and the first harvest took place.</p>

		<p>About 16 women who do not own livestock sold their share of grass to their neighbors. Samples taken from one PA (Kuhar) indicated that about 258 tones and 525 tones of fresh weight harvested during the first and second harvest respectively from an enclosed area of 5.5 ha and the grass is distributed among 183 individuals involved in the scheme. In another PA (Shina) a total harvest of 314 tones registered from an area of 4.5 ha and distributed to 126 members. Even though some farmers in some PAs are against the practice of area enclosure (thinking that it is against their tradition), in 2009, the practice expanded to other PAs in which community members in 11 PAs have cleaned Amecela weed from 136 ha of grazing land. Moreover, about 92 ha of land in 6 PAs have been brought under area enclosure benefiting 1270(136 women). In addition to improvement in quality of the grass , improvement in health condition and physical appearance of cattels, farmers reported that milk yild increased from 0/5-1 liter per day per lactation as a result of using the cut and carry system..</p> <p>The benefit of urea treatment using rice straw has been demonstrated in different PAs by IPMS/OoARD since the beginning of the project. Though, farmers who took part in the demonstration have reported tangible benefits such as gains in body weight and milk yield, this practice is hardly adopted by farmers. However, in 2008 11 farmers in three PAs have practiced urea treatment using their own resources. Increasing price of urea and the hard work associated in using urea treatment were mentioned as reasons for not adopting the</p>
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		<p>technology. As part of the effort in feed improvement Napier grass and three other forage species for backyard forage development introduced and promoted. Though about 25 farmers in three PAs have planted the grass in their plots, there is no recorded data with regard to the number of farmers who planted and the area covered by the forage species beyond the initial contact farmers. However, according to discussion with farmers and experts working in the OoARD the intervention has not gone as far as it should be due to little interest of farmers in allocating plots of land, planting and taking care of forage crops and lack of adequate site for multiplication of forage crops including FTCs.</p> <p>In breed improvement, pure Fogera breed and Holstein/Friesian (re) introduced through private bull service for large ruminant dairy development. Four Fogera breed bulls introduced in 4 PAs and one Holstein/Friesian bull is introduced in one PA in the form of private bull station. From the period it start giving service (Augst 2007) up to 2009, the Fogera bull serviced about 56 cows and about 39 calves were born. From the service 95 cows that were serviced by the Holstein/Friesian breed 11 calves were born. Due to better milk yield the Holstein/Friesian bull is preferable than the Fogera bull by farmers and the service charge is 30 birr per service whereas there is no payment for the Fogra bull</p> <p>Community based integrated Trypanosomosis control system was promoted in 6 PAs</p>
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		<p>during the beginning of the project. The system involves farmers' network for the use of trap net, pour-on chemical and other anti-parasitic and profilactic drugs. Even though success in terms of decreased population of biting flies was reported some two years ago, the intervention has not continued as there is no follow-up and sustainable input supply system. Based on the positive feedback, other NGOs like CARE has started similar interventions</p> <p>In previous year IPMS/OoARD facilitated the establishment of two dairy cooperatives at Alembeber and Woreta town. IPMS/OoARD provided training, and conducted market promotion. These cooperatives have continued collection and processing and marketing of milk and milk products. The cooperative at Woreta Town (Dehansit) is well functioning; it constructed its own shop and increased supply of milk to 100 lt/day (from 60 lt/day previously). However its members has decreased from 55 (6 women) in 2006/07 to 23 (6 women) in 2008/09. In 2007/08 it has registered a net annual profit of 3, 814 birr with a capital of 10,111.87 birr. The cooperatives at Alembeber have 25 (1 female) members. Problems of marketing and internal management nature reported and was only able to register birr 1, 973 net profit.</p>
Dairy	Input supply	<p>Private bull station established both for local (4 Fogera breed) and exotic (2 Holstein/Friesian) breed</p> <p>The four Fogera bulls owned by farmers in Woreta Zuria Kebele serviced 39 cows. So far,</p>

		<p>21 calves were born and the remaining 18 cows are still pregnant. These bulls were introduced in collaboration with ARARI. Local people don't generally appreciate the breed (as compared to the exotic breed) and so far no payments for services have been made</p> <p>One privately owned Holstein Friesian bull breed from Woreta Zuria Kebele serviced 39 cows during the breeding time. These cows belong to 30 cow owners and most of them are from Woreta town. Due to better milking yield the bull was highly preferable as compared to the Fogera breed by the cow owners and the service charge was 30 birr per service (9)</p> <p>Community based grazing land management using area closure and cut and carry system established (see production technologies)</p>
Dairy	Marketing	<p>In previous year IPMS/OoARD facilitated the establishment of two dairy cooperatives at Amedber and Woreta town. IPMS/OoARD provided training, and conducted market promotion. These cooperatives have continued collection and processing and marketing of milk and milk products. The cooperative at Woreta Town is well functioning; it constructed its own shop and increased supply of milk to 100 lt/day (from 60 lt/day previously). The cooperatives at Amedber weakened due to marketing and internal management problems.</p>
Fattening	Production	<p>The fattening intervention focus in promoting improved management of animals which</p>

	technologies	involves better feeding and housing for large ruminant fattening with the support of IPMS credit. In 2007, cattle fattening was promoted among 6 farmer groups. Though 100 % repayment was achieved, follow-up credit could not be delivered through the local lending institution (ACSI) following repayment problem faced with fishery group. However, farmers have continued the fattening activity using their own fund. Annual report of the OoARD showed that in 2008/09, about 1695 (21 female) farmers have been engaged in fattening of 308 cattle.
Fish	Production technologies	Improved fishing practice promoted through training and organizing farmers in to fishing groups for fishermen in two PAs. 49 fishermen grouped in to seven groups and provided with modern boat out board engine and fishing equipment for the groups with credit. In terms of marketing intervention, market linkage was made with Bahirdar fishery production and Marketing Corporation. The cooperation signed agreement with farmers on transportation and payment issues and farmers have started supplying fish to the cooperation. Market linkage was also made with private traders in Gonder, who latter opened branch collection center in Woreta Town. However, the groups failed to repay their debt as per the agreement and the creditor (ACSI) confiscated the fishing equipment from the groups.
Sheep	Production technologies	A domestic sheep breed called Washera breed introduced through community ram service Initially 3 rams were introduced, now hybrid of this breed reached over 90. Farmers reported higher birth weight of lambs (5-7 kg) and faster growth performance of the new

		breed than the local sheep breeds (3-4kg) About 90 hybrids were born.
Sheep	Input supply	Community managed ram service continued without charge is introduced for the Washera sheep (see production intervention)
Poultry	Production technologies	Two poultry groups have been established by the Woreda small-scale trade. These groups are organized as hatchery groups and bought their own hatchery. IPMS/OoARD is providing advisory service on the management of poultry and market linkage with farmers in the Fogera Woreda and beyond.

Metema

Fattening	Production technologies	<p>Large ruminant fattening using cut and carry system with improved housing, health and feeding system promoted through training, facilitating linkage and follow up advisory service. The activity which started in 2007 in one PA with few farmers has scaled out to 151 farmers in 13 PAs in 2008/09 and a total of 450 cattle fattened. The baseline data indicate there was no fattening of large ruminant fattening in 2004/05.</p> <p>To improve feeding, rice bran as animal feed promoted and participatory backyard forage development activity is initiated as demonstration in Awala PA with 500 cuttings of bana grass. Moreover, in an effort to promote timely collection of feed, Felech and Stover chopper is introduced as a demonstration material.</p>
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		To improve the local breeds, Borena breed is introduced through private bull service and AI service. Four Borena bulls introduced through private bull service. AI service is also given using Borena Semen through the use of oestrus synchronization in 4 PAs. Even though, the AI service is appreciated by farmers, the service could not be continued in the following years as the OoARD failed to recruit a regular AI technician due to budget shortage.
Fattening	Input supply	Private bull station established with the introduction of 4 Borena bulls serving two PAs (see production technologies)
Fattening	Marketing	A fattening cooperative is established with 40 members in Kokit PA. The cooperative is meant to facilitate input supply and marketing to its members. However, the cooperative has not yet become functional in these activities. The activities of illegal, unavailability of vaccination service nearby, getting export license for live animal trading were the major problems mentioned by members of the cooperatives.

SNNPR

Alaba

Apiculture	Production technologies	Improved bee keeping technologies in bee forage development, colony splitting, modern hive and site management is promoted with the help of IPMS credit. In addition to the first two PAs (Wanja & Galato) targeted for modern Apiculture development , the interventions
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		<p>are scaled out by providing training to 37 farmers (13 female) in two other PAs (Guba and Alem Tena). Farmers continued using modern apiculture production techniques including bee forage development (see also input supply)</p> <p>A technique of wax printing is promoted by providing three wax printer machines. Techniques of colony production using nuclei box introduced by training farmers (15 farmers, 7 women) and providing credit. However, because of the extended dry season & high rate of absconding, farmers have not yet started production of colonies. In addition to the long dry season, poor quality of the new modern beehives distributed in the market was mentioned as the major problem for the high rate of absconding which is reported as a challenge by farmers.</p> <p>The number of modern beehives in the Woreda has increased from 230 by 230 households (15 % female) in 2005 to 576 owned by 510 households (22 % female) in 2008</p>
Apiculture	Input Supply	<p>Local and exotic bee forages species²¹ and local bee forages introduced at farmers field and also planted in two FTCs. Up to 2008 19 farmers in five PAs and two FTCs planted the forage species. OoARD/IPMS established a communal bee forage demonstration site in Galato PA on 1/8 Ha land. The estimated area covered by bee forage has started from 1 ha</p>

²¹ Lenorous (exotic) , Trelucerne and Pahacelia (local)

		<p>in 2005 and reached to 6.25 ha in 2008.</p> <p>A technique of colony multiplication introduced. However queen rearing could not be practiced because bee colonies were weak due to drought in the production year. (see production interventions)</p> <p>Farmer to farmer bee forage sale system promoted and now informal bee forage seed marketing prevails among farmers. Farmers started selling bee forage seed to other farmers and OoARD at a price of 50 birr/kilo. In 2008 about 0.5 kg of seeds of Lenours is produced by farmers to be distributed to FTCs and farmers. 3 wax printer and honey extractors is provided as demonstration material to be operated by OoARD. Farmer to farmer wax sales system started and about 500 sheets of wax reported to be sold through such mechanism</p>
Apiculture	Marketing	<p>Linkage was created with honey processors, but since the offer price was lower than the local market farmers are selling locally. IPMS/OoARD facilitated the establishment of bee marketing cooperative. Since honey production was low due to the drought, the cooperative has not yet become functional to facilitate the expected collective marketing.</p>
Dairy sheep fattening	Production technologies	<p>Rural dairy groups (30 male farmers) are grouped to engage in improved dairy management practice. Forage seed multiplication was demonstrated for rural dairy group hay making is promoted. Peri-urban dairy group organized to promote improved dairy management practice. The group with 9 members (one female) is supported fodder</p>

		<p>intervention and technical advice from the project. Desho grass was introduced for the urban dairy group located in Zala Frere PA, along with provision of training on forage production and utilization. However due to disagreement among members, the group could not function as expected. In terms of improving breeds of dairy cows, IPMS/OoARD facilitated the introduction of Holstein Frisian breed for dairy through credit</p> <p>Sheep production using improved feeding and health promoted in three PAs with a total of 122 farmers (22 women) Each site has a forage site, a paravet for health problem and improved sheep breed (ram station), with a Bore breed (South African breed). On the other hand the women fattening group organized with 72 women in one PA, had intervention in grazing land improvement by planting Elephant grass strip. However, they are not functioning well. According to members of the group, they didn't get adequate follow-up support.</p> <p>Forage demonstration plots were established in two FTCs with forage species such as pigeon pea, desho grass, lablab, oats and Rhodes grass. The species were also provided to the private forage nursery site (see also input supply). In addition to this the method of hay making, urea treatment and MUB/MUM demonstrated. Though adoption of urea treatment is not yet reported, input supply of MUB/MUM is facilitated through private shops (see</p>
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		input supply)
Dairy	Input Supply	<p>Improved animal health promoted using community animal health service system introduced. Four of the six community animal health workers (paravets) have continued giving service in 22 PAs and have treated about 300 animals.</p> <p>Private forage seed distribution system through forage seed shopkeeper introduced & supported with credit. The shopkeeper has established a private seed nursery for local and exotic forage planting material production using a credit fund from IPMS. Forage seed shop continued to supply seeds for farmers in the Woreda.</p> <p>Private animal feed supplier shops established after obtaining a loan from IPMS. Private UMB sale system introduced in three shops. Two of the shop owners started producing UMB and poultry feed and have started selling UMB at birr 5.5 birr/kg and 6 birr for poultry feed. Despite the promotion work done by IPMS/OoaRD, the quantities sold were minimal and the owners doubt about continuing the work as it is not a viable business if markets are not improved. .</p>
Dairy	Marketing	Periurban dairy group organized (see production intervention for dairy)
Market	Market	Weekly market information collection and dissemination for major commodities has been introduced in three main market sites (Kulito, Besheno and Guba) using

		billboards. Except the initial establishment of the billboards by IPMS and LIVIA, all routine activities of data collection and posting are done by OoARD staff. Speakers were also used to disseminate market information in main market sites.
Poultry	Production technologies	<p>Two poultry groups were established in March 2007. Improved poultry feeding, feed production method and semi-intensive housing promoted in three PAs. In <u>Alaba</u>, semi-intensive poultry production focusing on exotic breeds and day old chicken) in 5 PAs with credit. The total number of farmers involved in poultry piloting increased to 80 (50% female). In group discussion however, farmers voiced their discontent about the intervention which had high mortality rate. Supply of medicines was said to be inadequate</p> <p>Hatchery using the Tegene incubator and water -charcoal hatcheries demonstrated for farmers engaged in poultry production. However, the interventions were not successful due to frequent power interruption.</p>
Poultry	Input Supply	<p>Hatchery using the Tegene incubator and water -charcoal hatcheries demonstrated for poultry (see production technologies)</p> <p>Two shop owners started producing and selling poultry feed (see input supply interventions for dairy)</p>

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Dale

Dairy	Production technologies	Improved management practice of dairy farm is promoted. New forage varieties (Falaris and Desho grass) introduced at FTC and farmers field. To facilitate marketing of dairy products a cooperative with 25 members established and provided with credit. Members of the cooperative went to Ada to share knowledge about operation of dairy cooperative. About 430 farmers from different PAs registered to sell their milk through the Aposto cooperative. Knowledge sharing is conducted with
Dairy	Input supply	New forage varieties introduced (see production interventions)
Dairy	Marketing	Dairy cooperative established (see production interventions)
Poultry	Production technologies	New poultry variety introduced and improved feeding and health promoted among farmers in the Woreda. Hay box brooder and runner introduced Eighty women farmers organized in 5 PAs supported with credit to produce 3 months old hens from day old chicks. The group trained about modern apiculture development including feeding, health and housing issues The women raised and sold 3,741(from the 4000 chickens) three month old hens to farmers, urban youth and egg producers households. The first phase of the intervention aimed at demonstrating input supply system was successfully completed with adequate

		facilitation for vaccines and feed ration provisions. All of the women have repaid their loan and on an average each woman has earned a gross profit of Birr 1,000. Despite the success of the first phase and great demand of the farmers, the system didn't continued during the next period.
Poultry	Input supply	Farmers' based pullet production and distribution system demonstrated (see production technologies)

Oromia

Goma

Apiculture	Production technologies	IPMS is working with 24 model farmers in 2 PAs with the objective of improving the overall production system with special emphasis on introducing the transitional hive and marketing potential. These farmers received trainings in beehive construction produced 27 transitional (Kenyan) top bar hives and 28 modern hives. One of the trained farmers specializes in hive production and farmers engage him to produce hives. These farmers have formed the "Wogin Gudina Honey Producers Association PLC." The association prepared their three year plan which includes production and marketing as well as a list of basic assets required for effective production of honey such as wax stamp and various types of processors. The association also collected capital amounting to ETB 2,900.00 by
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		selling shares to members and have a long term plan to expand members as well as capital by selling more shares. Bulbulo PA provided a small office to the honey producers association in the FTC located near the association members. To address shortage feed, bee forage seed of the Loloita species from Alaba was distributed to some bee farmers and beds for seedling rising were also established. Three bee farmers were provided with 300 Loloita seedlings and these are also well established. A new honey producer group with 20 members in Limu Sapa PA is established and supported thourh training and credit for the purchase of Kenya top bar.
Apiculture	Input supply	A business man who had an experience of distributing apiculture inputs was supported by the IPMS credit scheme to open apiculture input shop. T the shop is functional and provides basic apiculture inputs most required by honey producers in Agaro town. Bee forage is planted in FTCs to serve as planting source (see production intervention)
Apiculture	Marketing	In Goma, the model farmers voluntarily formed a honey producers association with the support of the Woreda cooperatives office (see production technology). Linkage is also made with SNV's BOAM project for future marketing of honey.
Poultry	Production technologies	In 2008 Asian Brown poultry breed was introduced in one PA s in three farmers found in three PAs. In 2009 1050 Asian Brown and 200 Fayoumi poultry breeds introduced in 4 PAs and four households and one urban youth association.
Small	Production	Small ruminant fattening using improved feeding, housing and health promoted, using

Ruminant fattening	technologies	community based insurance system with credit in one PA during 2008 with 120 farmers (5 sheep/household). In 2008/09 the activity scaled out to four PAs benefiting about 212 households. A total of 2040 and 1504 sheep fattened in 2008 and 2009 respectively. The first phase of sheep fattening which started in one PA provided valuable lessons with visible impact in small ruminant fattening intervention. The output of the intervention was displayed to six PAs during a one day farmer to farmer learning programme. As the result of this the OoARD has started scaling out to 4 PAs with credit from the revolving credit innovation fund by involving 154 farmers (53 % female)
Sheep fattening	Input supply	Concentrate supply Cotton seed meal from oil factory, which used to be transported to other areas previously, is introduced for small ruminant fattening group as a supplementary feed.

Meiso

Dairy	Production technologies	Enrichment of natural pastures and removal of weeds were promoted among farmers. However, the effort didn't go beyond the initial demonstration activities. Farmers said though they learned the benefit of pasture enrichment they didn't adopt the practice due to the drought situation which divert their attention to life saving activities. But two farmers in 1 PA enclosed and rehabilitated 2 ha of land
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		<p>Tree legumes²² , Herbaceous legumes²³ and grasses²⁴ introduced at farmers field in 15 PAs. FTCs were planted with different forage species to serve as demonstration site and serve as a source of planting materials. In total, 2,280 Napier grass cuttings were distributed to 69 farmers in 5 PAs. In addition, 3 FTCs (Tokkuma, Gorbo and Odabeldha) received Napier grass cuttings for demonstration purposes during fodder production and utilization training.</p> <p>Urea treatment is demonstrated for 36 farmers (all male) in 7 PAs. Farmers also trained to properly handle and use crop residues from ground nuts, haricot beans and cowpea and use it as supplement during dry season. 3 cereal straw choppers were also introduced in 3 FTCs to improve the intake of cereal straw (six)</p>
Dairy	Input supply	<p>FTCs planted with different forage species to provide farmers forage planting material (see production intervention)</p> <p>MUB/MUM supply system established (see input supply for fattening)</p>
Dairy	Marketing	<p>Milk collection group with 13 women member established and continued to collect and sell milk at Gorbu. They are linked with hotels and result rants.</p>

²² Sesbania, Leucena, Morenga

²³ Cow pea, buck wheat, Siratro, Macrotyloma axillaries, Pigeon pea, stylosanthes Scabra (seca), S. hamata and S. gramme, Silver leaf and Green leaf desmodiums

²⁴ napier grass, Rhodes grass

Fattening	Production technologies	<p>The use of shade and stall feeding for large ruminant fattening promoted since the beginning of the project. In 2007/08 a total of 1500 farmers and pastoralists in 30 PAs were believed to be engaged in cattle fattening. Improved animal health promoted using community animal health service (see input supply). MUB, ULB and MUM is introduced for dairy and fattening. The OoPRD continued demonstrating the use of UMB to farmers and pastoralists in 10 PAs. Urea treatment of straw and sorghum Stover demonstrated to 82 farmers (13 female) in 9 PAs. In the reporting period 116 farmers were trained by OoARD. Stover chopper is also introduced as a demonstration material. Construction of simple shade structures for stall feeding of fattened animals promoted and farmers reported in using them. Paravets are trained to provide basic treatment for livestock (see input supply)</p>
Fattening	Input supply	<p>Farmers to farmers forage seed and planting material supply system facilitated for cuttings/seeds of elephant grass sesbania, lucena, moringa, cowpea, buck wheat and rhodes grass</p> <p>Private input supply system for MUB/MUM established. In 2008, one supplier sold 1200 MUB alone.</p> <p>Paravets have started giving services to surrounding farmers. Out of the trained 18, 10 have started giving service but only two are effectively operating in 4 PAs</p>

Fattening	Marketing	<p>Market committee established at OoPRD used to provide market information by phone on demand. However this activity is stopped currently as it is taken up by Public Relation and Information Desk of the Woreda, which started broadcasting market information using radio broadcast.</p> <p>Animal fare is organized to promote fattening activities within the Woreda and encourage livestock traders to come to the Woreda. After this activity, farmers and DAs reported that the number of traders coming to the market has increased and it has also motivated farmers to engage in cattle fattening.</p> <p>Market linkage is created with Modjo Abators for small ruminant fattening group in Agamsa chali PA with 22 farmers. Even though they haven't started selling animals to the abattoir , they manage to sell animals so far through local assemblers</p> <p>Animal weighting service demonstrated at market place for small ruminant producers. So that they are informed about the weight of their animals and negotiate effectively with buyers</p> <p>The establishment of fattening cooperatives facilitated to increase negotiation power large and small ruminant fattening farmers. In Tokuma PA, 14 farmers (all male) formed market</p>
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		<p>group for large ruminant fattening, another market group also formed in Gode Chele and in Chacole PA two market groups with 30 members formed and strengthened.</p> <p>Market linkage is created with ELFORA and small ruminant fattening groups</p>
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Ada

Comoidty	Intervention type	Status of intervention
Fattening	Production technologies	Fattening using improved feeding, housing and health control promoted with credit. And especially the use of improved feeding has increased.
Beehive	Production technologies	Transitional beehive is supplied to farmers with credit through Erer union and farmers are satisfied. However, not all of the farmers repaid their credit.
Bulls station	Input Supply	Farmers are using the established private bull station but they are not satisfied since the bulls are not interest and not providing the expected services.
AI service	Input Supply	One of the two trained AI technicians is providing service but farmers are not satisfied and the service they get is not helping their cows to conceive. The other technician is no more providing the service.
Forage material	Input supply	Elephant grass, oats, veche supplied to farmers and FTCs. And these forage materials are being used as a demonstration materials in the FTCs. Farmers are using these forage materials. In addition, FTCs include other demonstration materials like teff, wheat, lentil, chickpea, faba bean, field pea, grass pea, maize, vegetables and fruits in the crop lands while ponds, micro basins, and terrace and check dams are some

		of the NRM activities.
Forage material	Input supply	FTCs in Ada provide planting materials of fodder species. (See fodder species introduction above)
Bull station	Input Supply	Private bull station established(see above)
AI service	Input Supply	Training and introducing private AI system(see above)
Any type	Marketing	The previously formed linkage between farmers in Denkaka PA and Ada Dairy Cooperative is functioning well. Milk collection farmers' continued to supply milk on daily basis.

4. Research

Approaches, methods, tools and processes developed, documented and promoted for knowledge management, capacity building, commodity development, gender, HIV/AIDS and environment are the expected outputs of the research component. Following this, the expected outcome of the research component is ‘ strategies, policy and technology options and institutional innovations developed both from research and lessons learned, documented and promoted in order to enhance market-oriented agricultural development; in view of this the project has conducted and completed various studies by the project staff, consultants, graduate students and partners from the NARS. From the 291 studies initiated by the project and its partners, about 186 completed up to 2009 (Table 4.1).

Table 4:1 Number of Completed Studies (up to end of 2008)

PLW	No. of Completed studies
Ada	25
Alaba	22
Alamata	19
Astbi	21
Bure	9
Dale	23
Fogera	23
Goma	6
Meiso	12
Metema	22
Other	7
Total	186

Various topics are covered by the completed studies. Production and marketing studies constitute the bulk of the completed studies. 35 and 30 percent of the completed studies are marketing and production related respectively. Issues related to knowledge management, extension/innovation, gender HIV/AIDS and environment are also included

in the completed studies. In an effort made to disseminate research findings, up to the end of 2009, the project published and distributed 14 of the completed studies as working paper of the project to members of NALC, RALC & WALC, and libraries of OoARDs of RARIs, BoARDs and OoARDs. Similarly 12 and 48 articles are submitted/accepted/published in scientific journals and conference contributions respectively. Moreover, to promote the project activities about 7 posters produced and distributed to different partners. Despite the fact that working papers are distributed to BoARD/OoARD, staff members either don't know about the availability of IPMS publication in their institutions or have not read them. Therefore, they are unable to comment on the relevance of IPMS publications for stockholders.

5. Summary and Conclusion

Since its launching in 2004/05, the IPMS project has been implementing interventions in all the four pillars of the project - knowledge management, innovative capacity building, commodity development and research. Previous M & E reports of the project documented achievements of output and outcome level results in the four intervention areas of the project. The M & E activities of year four (2008/09), conducted jointly by the project M & E team and OoARD staff, followed the project's Performance Measurement Framework (PMF) as a guide. The report is mainly based on data collected at different levels of the administration hierarchy from a wide range of stakeholders including farmers, DAs, experts, CBOs and the private sector. Secondary data was also used from the annual reports of the OoARDs, DAs'/experts' log book, six monthly reports, case studies and other reports of the project. The baseline data which was collected at the beginning of the project is also used to see the level of change in different performance indicators. This section of the report briefly presents summary and conclusions which are drawn from the main report.

In knowledge management, the project with its partners, have worked to identify knowledge gaps and develop/ promote IT and non-IT based enhanced knowledge sharing mechanisms. One of the knowledge management result is increased level of understanding and awareness of knowledge requirement for managing the market oriented commodities among public sector staff, farmers and other actors in the private sector. In this regard, farmers' inquiries about production, input supply and marketing of priority commodities have shown improvement. Quantitative analysis of the data indicated that the number of inquires forwarded by farmers about different aspects of market oriented commodities in sampled PAs is significantly higher in year four as compared to the situation during the baseline year. In the public sector, frequency of interface between different actors has increased. The data collected from SMS working in the OoARDs, have showed that the interface between OoARD and research institutes has improved in most PLWs, leading us to conclude awareness about the knowledge requirement to manage market oriented commodities has increased.

The report also discussed the establishment of various enhanced knowledge sharing mechanisms at different levels in order to facilitate improved access to information and knowledge. Field days, farmers' days, study tours; agricultural exhibitions etc are the type of non-IT based knowledge sharing mechanisms that are promoted by the project together with its partners. Among others, PA wide field/farmers' days is the most common non-IT based knowledge sharing mechanisms, which PAs in each PLW has on average organized two-to-three times in year four.

In regard to IT based knowledge sharing mechanisms a number of knowledge/information centers have been established at different levels. At federal level, the NAIRC (with an e-mail server and a web server for the Ethiopian Agricultural Portal) is established within MoARD. At regional and Zonal level information centers are established to provide offline content of the EAP at the RARIs, BoARDs and Zonal Departments of Agricultural and Rural Development. Woreda Knowledge Centers, which have been established with provision of reading materials, computers, and audio-visual equipment, have continued to be functional in serving as a source of information and knowledge. Similarly at PA level, knowledge centers are established in four model FTCs in each of the ten PLWs with ICT and audio visual equipment.

Operationalization of functional agricultural knowledge management system, highlighting innovations and appropriate technologies at Woreda and Federal levels is the expected outcome of knowledge management. The level of utilization of the above mentioned enhanced knowledge sharing mechanisms and the associated level of change in access to information were some of the outcome level indicators used. In this regard, utilization of non-IT based knowledge sharing mechanisms is found to be widespread and accepted by partners. Several cases have reported by different actors in different PLWs and some of such events have significantly impacted the adoption of new technologies/processes and institutional innovations. Among many such cases it is important to mention the action taken by farmers in Bure who adopted zero grazing after attending a study tour in Astbi; and an entrepreneur in Alamata who has invested about

150,000 birr and established livestock feed processing plant upon return from a technology shopping study tour in Ada.

Despite the progress that has been made with regard to establishing IT based knowledge sharing mechanisms, variation is reported in utilization of these facilities across regions, zones, Woredas and PAs:

- The WKC's that have been established at Woreda level are being used by OoARD staff for word processing and internet browsing using computers, an on spot reading and borrowing of books/manuals. They are also increasingly being used as a venue for conducting knowledge sharing events such as seminars, trainings and workshops. Though utilization of the WKC's is encouraging, the year 4 M & E report indicated some inadequacies that hindered effective use and sustainability. While most of the knowledge centers have appointed attendants (an improvement over the findings of the last M & E report), they do not have adequate budget to cover recurrent costs such as printer ink and other stationary materials. Most of them also lack systematic institutional linkages with domestic and international research or educational institutes which are potential source of relevant and up-to-date publications.
- The fact that increased number of MoARD staff starting to use the e-mail system is encouraging. However, the inability of the content managers to discharge their responsibility is a challenge for sustaining the EAP. Apart from the completion of provision of audio-visuals, ICT equipment and physical installation of the EAP at Region and Zone levels; utilization of the service of the knowledge centers is at its infant stage. Low level of awareness about the EAP as well as lack/shortages of reading materials and informative/educational CD/VCDs was identified as bottlenecks for making use of facilities.
- At PA level utilization of ICT and audio-visuals is reported in some of the FTC. Lack/shortage of informative/educational CD/VCDs, low level of IT literacy

among DAs, frequent failure of ICT tools and lack of local capacity for maintenance were identified as the most common challenges that hindered effective usage of these resources at the FTCs.

Another, result of the knowledge management component of the project is to improve access to information about market oriented commodities. The report highlighted improvement with regard to diversity in information source and information type (production, input supply, credit and marketing). Though DAs and other farmers are the major information providers to farmers, the share of CBOs, researchers and traders as information source has shown improvement. In general it is encouraging to see the widespread acceptance and usage of some knowledge sharing mechanisms such as seminars (by graduate students and staff members who participated in different workshops), field days, study tours and other farmer-to-farmer knowledge sharing mechanisms by DAs and SMSs as a means to disseminate information. Moreover, the fact that different PLWs have started to incorporate such events in their annual plans and allocate resources also suggests that some of the knowledge management approaches promoted by the project are being institutionalized, and are thus show early sign of sustainability.

The capacity building component of the project has had different interventions mainly related to physical, institutional and human capacity development through provision of demonstration materials as well as facilitating short and long term trainings to farmers, staff in public organizations, CBOs and other actors from the private sector. In this regard, the finding of year 4 indicated that the knowledge, awareness, understanding and skill of training participants working in the OoARD has improved in different technical and social subjects such as innovative extension methods, crop/animal production and marketing as well as cross cutting issues of environment, gender and HIV/AIDS. In terms of increasing participants' knowledge and skill, OoARD staff members who participated in the different IPMS/OoARD facilitated short term trainings gave an average rating of 3.6, leading us to conclude the different trainings have greatly contributed to increased level of awareness, understanding, knowledge and skill of

participants. Staff in OoARDs reported that they have started applying these knowledge and skills in the provision of extension service to farmers. Asked to what extent they incorporate the knowledge they gained in the provision of services to farmers, OoARD staff rated on average 3.3 on the scale of 1-to-5. Similarly, encouraging level of improvement in knowledge and skill is observed among farmers and other actors from the private sector who directly or indirectly participated in different capacity building events organized by IPMS/OoARD. According to farmers the different capacity building and knowledge management activities availed a number of new knowledge assets about best practices, improved varieties/breeds and other institutional innovations for input supply and product marketing.

The report also discussed the establishment and functioning of collaborative network arrangements between farmers, pastoralists, CBOs, public and private sector organizations. These arrangements enabled to better respond to market demands on the use of demand-driven agricultural technologies and services. Since the inception of the project, RALC and WALC are established at regional and Woreda level respectively to promote collaboration. Though it is not consistent across all PLWs, WALCs have conducted their regular meetings and they have played an active role in promoting participatory planning and stakeholder's collaboration for different interventions facilitated by IPMS/OoARD. On the other hand, RALCs were not able to conduct their regular meetings and they were weak in promoting collaboration and coordination of different actors. Similarly, most of the commodity platforms that were common institutional arrangements promoted by IPMS/OoARD were found to be not functional during the reporting period. Frequent staff turnovers (including WALC chairpersons), low level of interest of WALC/RALC members outside the agriculture sector, business of members (especially RALC Chairpersons and other members) to conduct meetings were some of the factors which hinder the well functioning of these institutional arrangements. Despite the above mentioned drawback, the early experience gained from working in platforms promoted the culture of engaging multi-stakeholder in ad-hoc committees to solve problems is observed in different PLWs. In addition to these networks institutional

arrangements, several bilateral linkages between farmers and input suppliers, traders, researchers and financing institutions are formed.

In general, the various capacity building interventions including provision of demonstration materials are believed to contribute to strengthened innovation capacity of farmers, community-based and private sector organizations. In this regard, quantitative measures, the responsiveness of the extension system from farmers' perspective for market oriented commodities has significantly improved in year four than the situation during the baseline year. According to farmers, the public extension system which conventionally deals more on food crops have increasingly started to engage in information supply, capacity building and linkage facilitation related to market oriented commodities. On the other hand the M & E report also pointed some bottlenecks that might affect sustainability of the capacity building interventions. The common problem that surface out in most of the PLWs is the inability of the public extension system to be consistently applying the innovative participatory extension approach jointly tested with IPMS. Especially farmers who are targeted by scaling out programs of the OoARD spoke highly against of the mass approach to extension which lack in depth trainings. DAs/SMSs also reported that , though they know the effectiveness of participatory, bottom up extension approach, they couldn't apply these approaches consistently beyond the IPMS/OoARD facilitated interventions due to some inhabiting factors, namely: overcrowded by unforeseen/unplanned works (usually not of extension related such as seminars, input distribution, credit collection etc), high number of farmers to be handled by a staff member, unavailability/inadequacy of dynamic system for availing complementary services such input supply and credit, lack of conducive environment and facility (frequent reshuffling of DAs, unavailability/inadequacy of transport facility, etc) and lack of motivation.

The commodity development component of the project identified and promoted different technologies, processes, and institutional innovations across the PLWs. These efforts have led to the adoption of a wide range of production technologies and process as well as innovative institutional arrangements for input supply and marketing. Interventions in

production technologies include introduction of new varieties /breeds, improved management practices, implements and chemicals for both crop and livestock commodities. In input supply interventions are mainly focused on introduction/strengthening of formal and informal business oriented input supply/service systems based on collective and/or private action. Similarly marketing interventions related to linking producers with potential market and introduction/strengthening of formal and informal business oriented processing/marketing systems based on collective and/or private action were done across the PLWs. As a result of these interventions, a number of innovations adopted by farmers, CBOs and other formal and informal private organizations. In this regard, the report indicated the success of these interventions in terms of the extent of adoption and highlighted the achievements and challenges of these interventions. Most of these interventions have gone far and are adopted by large number of farmers in and beyond the initial intervention PAs. These interventions have brought a significant change in production and productivity level of different market oriented commodities. For such type of interventions, both areas covered (no. owned for livestock commodities) and number farmers engaging in production of market oriented commodities have increased in year four as compared to the baseline.

However, the report also indicated the variation in the adoption and expansion of new technologies/process and institutional innovations across PLWs. In this regard the report noted some technologies/process and institutional arrangements that were extended proved to be failed to be adopted or their expansion is found to be slow. It was noted that there was no one single approach that ‘worked’ in regard to the adoption of certain innovations, nor was there only one reason why people take up other innovations. Bearing this in mind, farmers and those who work in extension mentioned some technical and institutional reasons why certain innovations are adopted or not adopted. But, generally the availability of affordable and easily accessible input supply options; favorable marketing situations as well as availability of strong extension services were identified as being important factors for success of some interventions.

In the research area, the project has conducted and completed various studies in knowledge management, capacity building, priority commodities and cross cutting issues of environment, gender and HIV/AIDS. These studies are conducted by the project staff, consultants, graduate students and partners from the NARS. Up to 2009, a total of 186 studies completed and 16 of them published and distributed as working paper. The rest 12 and 48 articles were submitted/accepted or/and published in scientific journals and conference proceedings respectively. However, despite the distribution of IPMS working papers, partners in the regions and Woredas either do not know about the research outputs or have not read them; therefore, they were unable to comment about the relevance of IPMS research outputs.

Annex 1: Selected Commodities and PAs

Region	PLW	Priority commodities	Selected PAs
Tigray	Astbi	Apiculture, Dairy, small ruminant fattening and vegetable (onion)	Golgol-nale, Habes, Hayelom and Felege Woyni
	Alamata	Onion, Papaya, Mango and Dairy	Kulugeze Lemlem, Tumuga, Gerjele, Laylay Dayou
SNNPR	Dale	Haricot bean, Coffee, Poultry and Avocado	Ajawa, D. Kege, Semen Mesenkela and Dagai
	Alaba	Teff, Haricot bean, small ruminant, apiculture	Galeto, Holegeba Cuke, Huletega Cherko, and Guba
Oromia	Meiso	Onion, large ruminant fattening, small ruminant fattening and dairy	Tokuma, Oda Keneni, Husei Adami, Billilo
	Gomma	Coffee, sheep fattening, poultry, avocado	Bashasa, Chedero susee-, Bulbuloo and Kilole kirkir
	Ada	dairy, chickpea, beef, apiculture	Denkaka, Godino, Gendegorba, Kaliti
Amhara	Bure	Avocado, wheat, Large Ruminant fattening, Apiculture	Zalema, Wangedam, Arbisi menfesawit and Wundgi
	Fogera	Dairy, Large Ruminant Fattening, onion and rice	Bebeks, Kuhar Michael, Tihua zakena and Woreta zuria, , ,
	Metema	Banana, Large Ruminant Fattening, papaya and pepper	Metema Yohannes, Kumer aftit, Gende Wuha, Kokit

Annex 2: List of Contacted Individuals

S.N.	Name	Gender	Responsibility	PA	PLW
1.	Almaz Afework	F	DA	Gerjele	Alamata
2.	Gufi Aleme	M	DA	Gerjele	Alamata
3.	Mekonnen Aleme	M	DA	Kulegize Lemlem	Alamata
4.	Abdulkadir Ousman	M	DA	Kulegize Lemlem	Alamata
5.	Brhane G/Mariam	M	DA	Kulegize Lemlem	Alamata
6.	Fantaye Reda	M	DA	Kulegize Lemlem	Alamata
7.	Mola Kalayou	M	DA	Limat	Alamata
8.	Zuriash G/Medhin	F	DA	S/Bekelsi	Alamata
9.	Meles Berhanu	M	DA	S/Bekelsi	Alamata
10.	Alemnesh Belay	F	Health Extension Worker	S/Bekelsi	Alamata
11.	Tikuye Nigus	M	DA	Timuga	Alamata
12.	Wendemu Alemu	M	DA	Timuga	Alamata
13.	Belay Gethanun	M	DA	Timuga	Alamata
14.	Amare Bati	M	DA	Timuga	Alamata
15.	Beletu Kahsay	F	DA	Timuga	Alamata
16.	Nuru Kahsay	M	DA	Timuga	Alamata
17.	G/egiziabher Kidanu	M	DA	Timuga	Alamata
18.	Ashenafi Molla	M	DA	Timuga	Alamata
19.	G/mariam Huluf	M	Planning Expert, OoARD	-	Alamata
20.	Mezgebe G/rufael	M	DA	Hayelom	Astbi
21.	Berhane G/mariam	M	DA	Hayelom	Astbi
22.	Kedir Nurhusen	M	DA	Hayelom	Astbi
23.	Kidane Kendeya	M	DA	Habes	Astbi
24.	Girmay Nigusse	M	DA	Habes	Astbi
25.	Selamwit Tadele	F	DA	Habes	Astbi
26.	Eboye Kidanu	M	DA	Ruba Feleg	Astbi
27.	Kiflom Abadi	M	DA	Felege Woyni	Astbi
28.	G/medin Kahsay	M	DA	Felege Woyni	Astbi
29.	Abreha Kefey	M	DA	Golgol-naile	Astbi
30.	Atakilit Haylay	M	DA	Golgol-naile	Astbi
31.	Tesfalem G/Kidan	M	DA	Golgol-naile	Astbi
32.	Marye Ashebir	M	Farmer	Gerjele	Alamata
33.	Seid Haji	M	Farmer	Gerjele	Alamata

34.	Azmera Abdu	F	Farmer	Gerjele	Alamata
35.	Belynesh Yirge	F	Farmer	Gerjele	Alamata
36.	Hiluf Terefe	M	Farmer	Gerjele	Alamata
37.	Abebe Kasa	M	Farmer	Timuga	Alamata
38.	Eyasu Kasaw	M	Farmer	Timuga	Alamata
39.	Abebe Muleta	M	Farmer	Timuga	Alamata
40.	Asefa Berhie	M	Farmer	Timuga	Alamata
41.	Asefa Kasa	M	Farmer	Timuga	Alamata
42.	Irkitu Tukuye	F	Farmer	Timuga	Alamata
43.	Molash Tukuye	F	Farmer	Timuga	Alamata
44.	Syoum Samu	M	Farmer	Timuga	Alamata
45.	Mogos Asmare	M	Farmer	Timuga	Alamata
46.	Gule Meresha	F	Farmer	Timuga	Alamata
47.	Birutawit Belay	F	Farmer	Timuga	Alamata
48.	Zenebu Wedajo	F	Farmer	Timuga	Alamata
49.	Gashaw Ayalew	M	Farmer	Timuga	Alamata
50.	Jemal Tahir	M	Farmer	Kulegize Lemlem	Alamata
51.	Darge Eyasu	M	Farmer	Kulegize Lemlem	Alamata
52.	Tedros haftu	M	Farmer	Kulegize Lemlem	Alamata
53.	Abadi Asfaw	M	Farmer	Kulegize Lemlem	Alamata
54.	Manasu Desalegn	F	Farmer	Kulegize Lemlem	Alamata
55.	Menbere Mekonnen	M	Farmer	Kulegize Lemlem	Alamata
56.	Aleme Tesfay	M	Farmer	Kulegize Lemlem	Alamata
57.	Mersiet W/Semayat	M	Farmer	Kulegize Lemlem	Alamata
58.	Embafreshi Tefera	F	Farmer	Kulegize Lemlem	Alamata
59.	Mengiste Mesele	M	Farmer	Kulegize Lemlem	Alamata
60.	Meselu Berhanu	F	Farmer	Kulegize Lemlem	Alamata
61.	Lemu Mehari	F	Farmer	Kulegize Lemlem	Alamata
62.	Marge Tegen	F	Farmer	Kulegize Lemlem	Alamata
63.	Mergeta Brhanu	M	Farmer	Laelay Dau	Alamata
64.	Darge Desta	M	Farmer	Laelay Dau	Alamata
65.	Moges Tadeg	M	Farmer	Laelay Dau	Alamata

66.	Bitana Nugus	M	Farmer	Laelay Dau	Alamata
67.	Debese Chokole	F	Farmer	Laelay Dau	Alamata
68.	Weser Girmay	F	Farmer	Laelay Dau	Alamata
69.	Tsehaynesh Berhe	F	Farmer	Laelay Dau	Alamata
70.	Dayma Berhe	M	Farmer	Laelay Dau	Alamata
71.	Teka Asheber	M	Farmer	Laelay Dau	Alamata
72.	Shwaye Abraha	F	Farmer	Laelay Dau	Alamata
73.	Amede Tadese	M	Farmer	Hayelom	Astbi
74.	Yilma G/Selasse	M	Farmer	Hayelom	Astbi
75.	G/medhin Teare	M	Farmer	Hayelom	Astbi
76.	Abreha Hagos	M	Farmer	Hayelom	Astbi
77.	Mulu Hagos	F	Farmer	Hayelom	Astbi
78.	Sendayo Teka	F	Farmer	Hayelom	Astbi
79.	Lemlem Kahsay	F	Farmer	Hayelom	Astbi
80.	Solomon Tadese	M	Farmer	Hayelom	Astbi
81.	Mehari Hesha	M	Farmer	Habes	Astbi
82.	Abreha Murtse	F	Farmer	Habes	Astbi
83.	Kiros Hadera	F	Farmer	Habes	Astbi
84.	Assefu Atsbeha	F	Farmer	Habes	Astbi
85.	Hadush Hailu	M	Farmer	Habes	Astbi
86.	G/medhin Hagos	M	Farmer	Habes	Astbi
87.	Haftoy Mezegebo	M	Farmer	Habes	Astbi
88.	Kiflom Tesfay	M	Farmer	Habes	Astbi
89.	G/micale Desta	M	Farmer	Habes	Astbi
90.	Mehari Kidanu	M	Farmer	Golgol naele	Astbi
91.	Nuguse Berhu	M	Farmer	Golgol naele	Astbi
92.	Shefena Gebre	F	Farmer	Golgol naele	Astbi
93.	Melake selam Tsfay Embay	M	Farmer	Golgol naele	Astbi
94.	G/silase G/medhin	M	Farmer	Golgol naele	Astbi
95.	Behane Mezgebo	M	Farmer	Golgol naele	Astbi
96.	Geday homes	F	Farmer	Golgol naele	Astbi
97.	Tshaynesh Neroyo	F	Farmer	Golgol naele	Astbi
98.	Kahsay W/Chae	M	Farmer	Golgol naele	Astbi
99.	Motaleka Desta	M	Farmer	Golgol naele	Astbi
100.	Hidrom Assefa	M	Farmer	Ruba Feleg	Astbi
101.	Giday Kahsay	M	Farmer	Ruba Feleg	Astbi
102.	Hadush Abreha	M	Farmer	Ruba Feleg	Astbi
103.	Kahasay nereg	M	Farmer	Ruba Feleg	Astbi
104.	Tsfay Abreha	M	Farmer	Ruba Feleg	Astbi
105.	Atsbeha Nugese	M	Farmer	Ruba Feleg	Astbi
106.	Mebrehit Girmay	F	Farmer	Ruba Feleg	Astbi

107.	Kalyau Mehari	M	Expert, pathology & weed management), OoARD	-	Alamata
108.	Darge Tukye	M	Knowledge Center Attendant, OoARD	-	Alamata
109.	Tewdros Zerfu	M	AI Technician, OoARD	-	Alamata
110.	Gebreanania Girmay	M	Expert, Livestock, OoARD	-	Alamata
111.	Mebrehatu G/Silase	M	Crop expert, OoARD	-	Alamata
112.	Afeworki G/mariam	M	Expert, Irrigation, OoARD	-	Alamata
113.	Berihun Tafere	M	Expert, Forage Development, OoARD	-	Alamata
114.	Tadesse Gemay	M	Expert, Environment, OoARD	-	Alamata
115.	Tesfay G/Egziaber	M	Expert & WALC member	-	Alamata
116.	Fistum G/Egziaberh	M	ICT Technician and Knowledge Center attendant, Zone Administration, Maychew	-	-
117.	Abraham Desalegn	M	Head, Capacity Building, Zone Admin. Maychew	-	-
118.	Kahsay Negash	M	Office Manager, Eastern Zone Administration, Adigrat	-	-
119.	Berhe Fisha	M	RALC Chairperson for Tigray Region, BoARD, Mekele	-	-
120.	Betelhem Lukas	F	Coordinator , Knowledge Center, BoARD, Mekele	-	-
121.	Alem Mehari	F	Knowledge Center attendant,	-	-

			BoARD, Mekele		
122.	G/egziabher G/Yohannes	M	Director General, TARI, Mekele	-	-
123.	Kidane Mariam G/hawaria	M	Expert, OoARD	-	Dale
124.	Belyneh	M	WALC Chairpeson	-	Dale
125.	Melese Matewos	M	DA	Debub Quge	Dale
126.	Adagna Ademe	M	DA	Debub Quge	Dale
127.	Tesema Yottamo	M	DA	Ajwa	Dale
128.	Mola Tesfaye	M	DA	Bera Tedecho	Dale
129.	Samuel Mena	M	DA	Bera Tedecho	Dale
130.	Melese Matewos	M	DA	Debub Kege	Dale
131.	Adagnua Ademe	M	DA	Debub Kege	Dale
132.	Gizachew Tadesse	M	DA	Gane	Dale
133.	Meseret Gessesse	F	DA	Gane	Dale
134.	Bizuayehu Gurara	M	DA	Semen Mesenkela	Dale
135.	Kasa Kayesso	M	DA	Dagia	Dale
136.	Solomon Dukamo	M	DA	Dagia	Dale
137.	Liminu Enkinbi	M	Farmer	Dagia	Dale
138.	Doniso Gorsima	M	Farmer	Dagia	Dale
139.	Bizuneh Bokerna	M	Farmer	Dagia	Dale
140.	Kinabo Keyito	M	Farmer	Dagia	Dale
141.	Gebiba Erikiba	M	Farmer	Dagia	Dale
142.	Getachew Gebre	M	Farmer	Dagia	Dale
143.	Getachew Erkiba	M	Farmer	Dagia	Dale
144.	Beguda Berchisa	M	Farmer	Dagia	Dale
145.	Hailu Harekamo	M	Farmer	Debub Kege	Dale
146.	Tekelu Bonta	M	Farmer	Debub Kege	Dale
147.	Asamye Alatu	F	Farmer	Debub Kege	Dale
148.	Daraye Berasa	F	Farmer	Debub Kege	Dale
149.	Bekele Benata	M	Farmer	Debub Kege	Dale
150.	Asfaw Aregta	M	Farmer	Debub Kege	Dale
151.	Kebede Keilafu	M	Farmer	Debub Kege	Dale
152.	Daniel Daka	M	Farmer	Debub Kege	Dale
153.	Adisu Seresa	M	Farmer	Debub Kege	Dale
154.	Beyane Benatu	M	Farmer	Debub Kege	Dale
155.	Alemu Deketra	M	Farmer	Debub Kege	Dale
156.	Tseahy Mekera	F	Farmer	Debub Kege	Dale
157.	Aenealem Yenka	F	Farmer	Debub Kege	Dale
158.	Birhanu Harigiso	M	Farmer	Gane	Dale
159.	Almaz Bassa	F	Farmer	Gane	Dale
160.	Hailu Kayesu	M	Farmer	Gane	Dale

161.	Betebo Boea	M	Farmer	Gane	Dale
162.	Kilo Keyeso	M	Farmer	Gane	Dale
163.	Danchele Kaweto	F	Farmer	Gane	Dale
164.	Addisu Baye	M	Farmer	Gane	Dale
165.	Zelege Deron	M	Farmer	Gane	Dale
166.	Martha Bona	F	Farmer	Semen Mesenkela	Dale
167.	Tigist Mengesha	F	Farmer	Semen Mesenkela	Dale
168.	Kilo chora	F	Farmer	Semen Mesenkela	Dale
169.	Mekonnen Boko	M	Farmer	Semen Mesenkela	Dale
170.	Gabe Gonsamo	M	Farmer	Semen Mesenkela	Dale
171.	Almaz Miteku	F	Farmer	Semen Mesenkela	Dale
172.	Hayiso Hamato	M	Farmer	Semen Mesenkela	Dale
173.	Gebiso Burke	M	Farmer	Semen Mesenkela	Dale
174.	Jemal Mohhamed	M	DA	Mekalla	Alaba
175.	Abdela Aman	M	DA	Mekalla	Alaba
176.	Dejene Lemencho	M	DA	Alem Tena	Alaba
177.	Bogalech Ajelo	F	DA	Alem Tena	Alaba
178.	Esegenet Teshome	F	DA	Huletega Choroko	Alaba
179.	Kiterya Zeni	F	DA	Huletega Choroko	Alaba
180.	Zerihun Awoke	M	DA	Anshia	Alaba
181.	Natnaiel Tesfay	M	DA	Anshia	Alaba
182.	Bekele Oumer	M	DA	Mierab Goretancoh	Alaba
183.	Mesinu Arega	F	DA	Mierab Gorenticho	Alaba
184.	Fitsum Girma	M	Expert, Marketing, OoARD	-	Alaba
185.	Zinash W/Michael (Dr. DVM)	F	Expert, DVM	-	Alaba
186.	Eskendir Asemhagen	M	Expert, Extension, OoARD	-	Alaba
187.	Hailu Alemu	M	Planning expert		Alaba
188.	Miftah Hassen	M	Information and documentation	-	Alaba

			office		
189.	Getachew Eshete	M	Seed Multiplication Expert, OoARD	-	Alaba
190.	Mesfin Zeleke	M	Seed Multiplication Expert, OoARD	-	Alaba
191.	Belete Temesgen	M	Farmer	Galeto	Alaba
192.	Gezahege Bekele	M	Farmer	Galeto	Alaba
193.	Agonafer W/Tsadik	M	Farmer	Galeto	Alaba
194.	Makada Bamud	F	Farmer	Galeto	Alaba
195.	Sunka Temesgen	F	Farmer	Galeto	Alaba
196.	Alemitu Pijama	F	Farmer	Galeto	Alaba
197.	Shelene Jemal	F	Farmer	Galeto	Alaba
198.	Desalech Korma	F	Farmer	Galeto	Alaba
199.	Alemenesh Seaid	F	Farmer	Galeto	Alaba
200.	Beletech Nigatu	F	Farmer	Galeto	Alaba
201.	Mazegia Nigatu	M	Farmer	Galeto	Alaba
202.	Derga Nuryie	M	Farmer	Holegoba Cuke	Alaba
203.	Yemago Awol	M	Farmer	Holegoba Cuke	Alaba
204.	Abiso Habib	M	Farmer	Holegoba Cuke	Alaba
205.	Muche Ebrahim	M	Farmer	Holegoba Cuke	Alaba
206.	Begna Mohammed	M	Farmer	Holegoba Cuke	Alaba
207.	Kedir Abdela	M	Farmer	Holegoba Cuke	Alaba
208.	Abdela Hasen	M	Farmer	Holegoba Cuke	Alaba
209.	Erkate Dona	F	Farmer	Holegoba Cuke	Alaba
210.	Kedir Gadisa	M	Farmer	Holegoba Cuke	Alaba
211.	Nesir Sallo	M	Farmer	Holegoba Cuke	Alaba
212.	Befata Abde	M	Farmer	Holegoba Cuke	Alaba
213.	Shefeha A/kadir	M	Farmer	Holegoba Cuke	Alaba
214.	Ismael Ahemed	M	Farmer	Holegoba Cuke	Alaba
215.	Merima Ebrahim	F	Farmer	Holegoba Cuke	Alaba
216.	Madina Bushura	F	Farmer	Holegoba Cuke	Alaba
217.	Ababa Shifa	M	Farmer	Huletega Cherko	Alaba
218.	Jemal Baburo	M	Farmer	Huletega Cherko	Alaba
219.	Mutiba Hajibamumd	M	Farmer	Huletega Cherko	Alaba
220.	Elifa Hajibamud	F	Farmer	Huletega Cherko	Alaba
221.	Nido Oumer	F	Farmer	Huletega Cherko	Alaba

222.	Bamud Kedir	M	Farmer	Huletega Cherko	Alaba
223.	Dibayo Ahemedin	M	Farmer	Huletega Cherko	Alaba
224.	Mahamednur Adise	M	Farmer	Huletega Cherko	Alaba
225.	Husinu Ame	M	Farmer	Husie Adami	Meiso
226.	Ali Daba	M	Farmer	Husie Adami	Meiso
227.	Jemal Juya	M	Farmer	Husie Adami	Meiso
228.	Yasin Muml	M	Farmer	Husie Adami	Meiso
229.	Aliye Adem	M	Farmer	Husie Adami	Meiso
230.	Disi Alishu	M	Farmer	Husie Adami	Meiso
231.	Addila Bussu	M	Farmer	Husie Adami	Meiso
232.	Haliya Adem	M	Farmer	Husie Adami	Meiso
233.	Fatuma Yesuf	F	Farmer	Husie Adami	Meiso
234.	Ahemed Juya	F	Farmer	Husie Adami	Meiso
235.	Sheh Abrhim Hussien	M	Farmer	Oda Kenneni	Meiso
236.	Abraham Ahemed	M	Farmer	Oda Kenneni	Meiso
237.	Mohamed Abdule	M	Farmer	Oda Kenneni	Meiso
238.	Mengiste Tadese	M	Farmer	Oda Kenneni	Meiso
239.	Milion Taye	M	Farmer	Oda Kenneni	Meiso
240.	Mohamed Ahemedo	M	Farmer	Oda Kenneni	Meiso
241.	Hiwot Tota	F	Farmer	Tokuma	Meiso
242.	Yasin Ahemed	M	Farmer	Tokuma	Meiso
243.	Haji Mohamed Yessuf	M	Farmer	Tokuma	Meiso
244.	Mohammed Ibro	M	Farmer	Tokuma	Meiso
245.	Oumer Adem	M	Farmer	Tokuma	Meiso
246.	Fatuma Husine	F	Farmer	Bililo	Meiso
247.	Ahemed Oumer	M	Farmer	Bililo	Meiso
248.	Taju Seido	M	Farmer	Bililo	Meiso
249.	Ahemed Sherif	M	Farmer	Bililo	Meiso
250.	Fatuma Oumer	F	Farmer	Bililo	Meiso
251.	Jemal Nure	M	Farmer	Bililo	Meiso
252.	Nura Tune	M	Farmer	Bililo	Meiso
253.	Fatuma Abdulahe	M	Farmer	Bililo	Meiso
254.	Ousman Ademe	M	Farmer	Bililo	Meiso
255.	Elsay Setye	F	DA	Bililo	Meiso
256.	Meseret Engda	F	DA	Bililo	Meiso
257.	Abdulaziz Seid	M	DA	Bililo	Meiso
258.	Ahemed Abirham	M	DA	Oda Bela	Meiso
259.	Mohamed Ousman	M	DA	Oda Bela	Meiso

260.	Elisa Tefere	F	Knowledge Center Attendant	-	West Hararge Zone , OoARD
261.	Jemal Daniel	M	A. OoARD/WALC Chair	-	Meiso
262.	Mekonnen Zewdu	M	Team Leader, Animal Health, OoARD	-	Meiso
263.	Mohamed Kemal	M	Cooperative Head, Mesio Woreda Administration & WALC member	-	Meiso
264.	Moges Gashaw	M	Cooperative Office, Expert, Mesio Woreda Administration & WALC member	-	Meiso
265.	Foad Tabit	M	Cooperative Office, Expert, Mesio Woreda Administration & WALC member	-	Meiso
266.	Aynalem Berhanu	F	Expert, Early Warning , OoARD	-	Meiso
267.	Yohannes Legese	M	Expert, , Forage Development, OoARD	-	Meiso
268.	Tesema Admasu	M	Expert, Agronomy, OoARD	-	Meiso
269.	Daniel Tadese	M	Expert, Horticulture, OoARD	-	Meiso
270.	Mesfin Eshetu	M	Expert, Water harvesting, OoARD	-	Meiso
271.	Kedir Yasin	M	Expert, Natural Resource , OoARD	-	Meiso
272.	Eyob Alemayhu	M	Expert, Early Warning , OoARD	-	Meiso
273.	Aynalem Gezahgne	M	RALC Chairperson, BoARD	-	Amhara Region, Bahirdar

274.	Mulualem Ayalew	M	ICT expert, W. Gojam Zone OoARD	-	Bahirdar
275.	Kassahun Asefa	M	ICT expert- W. Gojam Zone OoARD		Bahirdar
276.	Bayou Esa	M	IT Service head, BoARD	-	Bahirdar
277.	G/kidan G/yes	M	Farmer	Metema Yohannes	Metema
278.	Amare Jegne	M	Farmer	Metema Yohannes	Metema
279.	W/gebriel G/kiros	M	Farmer	Metema Yohannes	Metema
280.	Yigzaw Desta	M	Farmer	Metema Yohannes	Metema
281.	Desalgne Biru	M	Farmer	Metema Yohannes	Metema
282.	Yigzaw Berhe	M	Farmer	Metema Yohannes	Metema
283.	Sisay Asres	M	Farmer	Metema Yohannes	Metema
284.	Mehari Hagos	M	Farmer	Metema Yohannes	Metema
285.	G/Michael G/Egziabher	M	Farmer	Metema Yohannes	Metema
286.	Seid Musa	M	Farmer	Metema Yohannes	Metema
287.	Temesgen Mesele	M	Farmer	Gende Wuha	Metema
288.	G/meskel Arahaya	M	Farmer	Gende Wuha	Metema
289.	Aleka G/medin G/girogis	M	Farmer	Gende Wuha	Metema
290.	Sisay Belay	M	Farmer	Gende Wuha	Metema
291.	Ali Ibrahim	M	Farmer	Gende Wuha	Metema
292.	Nigus Chekle	M	Farmer	Gende Wuha	Metema
293.	Zamicael G/Egziabher	M	Farmer	Gende Wuha	Metema
294.	Temesgen Bekele	M	Farmer	Kumer Aftit	Metema
295.	Aychew Mengiste	M	Farmer	Kumer Aftit	Metema
296.	Melkie Tadesse	M	Farmer	Kumer Aftit	Metema
297.	Adanae Dinku	M	Farmer	Kumer Aftit	Metema
298.	Tesfaw Semgne	M	Farmer	Kumer Aftit	Metema
299.	Girazmach Baude	M	Farmer	Kumer Aftit	Metema
300.	Tezera Asfaw	M	Farmer	Kumer Aftit	Metema

301.	Mulualem melki	M	Farmer	Kumer Aftit	Metema
302.	Sendeku Boga	M	Farmer	Kumer Aftit	Metema
303.	Sonia Zergaw	F	Farmer	Kumer Aftit	Metema
304.	Wondimu Tadese	M	Farmer	Kokit	Metema
305.	Shiferaw Tadese	M	Farmer	Kokit	Metema
306.	Wasi Ketema	M	Farmer	Kokit	Metema
307.	Destaw Adego	M	Farmer	Kokit	Metema
308.	Kasahun Gebreye	M	Farmer	Kokit	Metema
309.	Abebe Tsege	M	Farmer	Kokit	Metema
310.	Kasa Asege	M	Deputy Head OoARD & WALC member	-	Metema
311.	Fasil Mamo	M	DA	Shinfa	Metema
312.	Gettu Aboye	M	Expert, Horticulture & Fruit	-	Metema
313.	Tekeba Tababal	M	Deputy Head, North Gonder Zone OoARD	-	Gonder
314.	Hasen Ismael	M	WKC attendant	-	Fogera
315.	Getenet Tarik	M	WALC Chairperson	-	Bure
316.	Worku Mulat	M	WALC Chairperson	-	Fogera
317.	Abebe Anagaw	M	D/ head OoARD, South Gonder Zone	-	D. Tabor
318.	Solomon Hagos	M	Expert, horticulture, OoARD	-	Fogera
319.	Habte W/Silase	M	Expert, Forage, OoARD	-	Fogera
320.	Aragachew Kasa	M	Expert, Forage, OoARD	-	Fogera
321.	Niguse Assefa	M	Expert, Crop, OoARD	-	Fogera
322.	Biyadge Wube	M	Expert, Irrigation, OoARD	-	Fogera
323.	Yeshi Delegasa	F	Women affairs, expert, OoARD	-	Ada'a
324.	Lemma Negera	M	Input supply, expert, OoARD	-	Ada'a
325.	Assefa Deribesa		Input supply process owner, expert, OoARD	-	Ada'a

326.	Mohamed Adebe	M	Livestock, expert, OoARD	-	Ada'a
327.	Adisu Melka	M	Natural resource department, expert, OoARD	-	Ada'a
328.	Wendemu Takele	M	Agronomy, expert, OoARD	-	Ada'a
329.	Menda Ayalewe	M	Irrigation and horticulture department, expert, OoARD	-	Ada'a
330.	Bekele Soboka	M	Extension, expert, OoARD	-	Ada'a
331.	Adawerke Worku	F	Finance, expert, OoARD	-	Ada'a
332.	Admasu Abera	M	DA	Godino	Ada'a
333.	Adane Hayelu	M	DA	Godino	Ada'a
334.	Werkeneshe Yetefu	F	DA	Kality	Ada'a
335.	Tigist Abate	F	DA	Kality	Ada'a
336.	Tefera Seyume	M	DA	Kality	Ada'a
337.	Zemenaye Asefa	F	DA	Denkaka	Ada'a
338.	Tsehay Tilahun	F	DA	Gendegorba	Ada'a
339.	Tesfaye Bedo	M	DA	Hidi	Ada'a
340.	Tarike Bezu	F	DA	Dre	Ada'a
341.	Berhanu Abebe	M	DA	Dre	Ada'a
342.	Deneku Chala	M	DA	Ude	Ada'a
343.	Amani Konde	F	Women affair office	-	Ada'a
344.	Aster Eshetu	F	Women affair office	-	Ada'a
345.	Terefe Tesfaye	M	Farmer	Gendegorba	Ada'a
346.	Demere Bekele	M	Farmer	Gendegorba	Ada'a
347.	Mekonnen Gurmo	M	Farmer	Gendegorba	Ada'a
348.	Urgecha Bedada	M	Farmer	Gendegorba	Ada'a
349.	Belayenesh Bayu	F	Farmer	Gendegorba	Ada'a
350.	Asegedech Abebe	F	Farmer	Gendegorba	Ada'a
351.	Abera Deme	M	Farmer	Gendegorba	Ada'a
352.	Seleshi Mojo	M	Farmer	Gendegorba	Ada'a
353.	Tulu Daie	M	Farmer	Gendegorba	Ada'a
354.	Sisay Aboye	M	Farmer	Gendegorba	Ada'a
355.	Girma Degefa	M	Farmer	Gendegorba	Ada'a
356.	Bekele Balcha	M	Farmer	Gendegorba	Ada'a
357.	Degu Adecha	M	Farmer	Gendegorba	Ada'a

358.	Werku Jema	M	Farmer	Gendegorba	Ada'a
359.	Tigist Weyecha	F	Farmer	Gendegorba	Ada'a
360.	Emebete Tesema	F	Farmer	Denkaka	Ada'a
361.	Berhanu Negasa	M	Farmer	Denkaka	Ada'a
362.	Endale Belaye	M	Farmer	Denkaka	Ada'a
363.	Regasa Dadi	M	Farmer	Denkaka	Ada'a
364.	Atenafe Kidane	F	Farmer	Denkaka	Ada'a
365.	Bedelu Mengestu	M	Farmer	Denkaka	Ada'a
366.	Balecha Chebesi	M	Farmer	Denkaka	Ada'a
367.	Getachew Tesema	M	Farmer	Denkaka	Ada'a
368.	Sisaye Aserat	M	Farmer	Godino	Ada'a
369.	Demese Ejere	M	Farmer	Godino	Ada'a
370.	Mesfin G/Meskel	M	Farmer	Godino	Ada'a
371.	Behayelu Mengestu	M	Farmer	Godino	Ada'a
372.	Demese Chamisa	M	Farmer	Godino	Ada'a
373.	Teshome Sida	M	Farmer	Godino	Ada'a
374.	Solomon Sida	M	Farmer	Godino	Ada'a
375.	Zenashe Arage	F	Farmer	Godino	Ada'a
376.	Geremewe Sahele	M	Farmer	Godino	Ada'a
377.	Mekona Wodajo	M	Farmer	Godino	Ada'a
378.	Abenet Wendemu	M	Farmer	Godino	Ada'a
379.	Tigist Fekeru	F	Farmer	Godino	Ada'a
380.	Senayet Meteku	F	Farmer	Godino	Ada'a
381.	Meserete Bekele	F	Farmer	Godino	Ada'a
382.	Muluneshe Bekele	F	Farmer	Godino	Ada'a
383.	Yeshi Temesegen	F	Farmer	Godino	Ada'a
384.	Senafekeshe Yegeletu	F	Farmer	Godino	Ada'a
385.	Negatuwa Megera	F	Farmer	Godino	Ada'a
386.	Yami Gemechu	M	Farmer	Kaliti	Ada'a
387.	Getu Alemu	F	Farmer	Kaliti	Ada'a
388.	Workeneshe Dadi	F	Farmer	Kaliti	Ada'a
389.	Dekere Abayu	F	Farmer	Kaliti	Ada'a
390.	Kebede Taddesse	M	Farmer	Kaliti	Ada'a
391.	Wondewosene Abebe	M	Farmer	Kaliti	Ada'a
392.	Tadesse Abebe	M	Farmer	Kaliti	Ada'a
393.	Lemma Wurge	M	Farmer	Kaliti	Ada'a
394.	Kefele Meresha	M	Farmer	Kaliti	Ada'a
395.	Werke Gurema	F	Farmer	Kaliti	Ada'a
396.	Asefa H/Mariam	M	Farmer	Kaliti	Ada'a

397.	Gemechu Bedasa	M	Farmer	Kaliti	Ada'a
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Annex 3: Performance Measurement Framework of the IPMS Project

ANNEX 2: PERFORMANCE MEASUREMENT FRAMEWORK (REVISED JUNE 26, 2009) FOR IMPROVING PRODUCTIVITY & MARKET SUCCESS OF ETHIOPIAN FARMERS

Result Expectations	Performance Indicators	Data Sources	Methods & Techniques of Data Collection	Frequency of Data Collection	Roles and Responsibility
<p>Impact:</p> <p>Improved agricultural productivity and production within functional market-oriented agricultural production systems in and beyond the PLWs.</p> <p><i>On the Right are Possible Performance Indicator to serve us baseline for Post-Project Impact Evaluation by External Evaluators:</i></p>	<p>[Baseline; End-of-Project (EoP) targets; Fiscal Year (FY) targets; Six-month targets]</p>	<p>(individuals or organizations from which the data is obtained)</p>	<p>(what methods & techniques will be used to collect data)</p>	<p>(how often does data have to be collected for management & reporting purposes)</p>	<p>C – who collects data A – who analyzes data R – who reports on analyses D – who makes decisions if decisions are required</p>
	<p>1. % increase in cultivated area under market oriented crops.</p> <p>Baseline: Targets: EoP & FYs</p>	<p>OoARD DAs PA officials</p>	<p>Review of records Group discussion Key informant interview</p>	<p>Project Year (PY) 4 PY 5 (before Project completion)</p>	<p>Monitoring and Evaluation team</p>
	<p>2. % increase in households growing the market oriented crop commodities</p> <p>Baseline: Targets: EoP & FYs</p>	<p>OoARD DAs PA officials</p>	<p>Review of records Group discussion Key informant interview</p>	<p>PY 4 PY 5</p>	<p>Monitoring and Evaluation team</p>
	<p>3. % increase in market oriented livestock enterprises</p>	<p>OoARD DAs</p>	<p>Review of records Group discussion</p>	<p>PY 4</p>	<p>Monitoring and Evaluation team</p>

	Baseline: Targets: EoP & FYs	PA officials	Key informant interview	PY 5	
	4.%increase in households involved in market oriented livestock enterprises Baseline: Targets: EoP & FYs	OoARD DAs PA officials	Review of records Group discussion Key informant interview	PY 4 PY 5	Monitoring and Evaluation team
	5. % increase in the volume of the market oriented commodities, crop and/or livestock, which is sold. Baseline: Targets: EoP & FYs	OoARD DAs PA officials	Review of records Group discussion Key informant interview	PY 4 PY 5	Monitoring and Evaluation team
	6. % increase of women headed households in market oriented agricultural production (crop/livestock) Baseline: Targets: EoP & FYs	OoARD DAs PA officials	Review of records Group discussion Key informant interview	PY 4 PY 5	Monitoring and Evaluation team
	7. Extent of use of sustainable land management practices (like soil erosion control, soil fertility, water and grazing land management)	OoARD DAs PA officials	Review of records Group discussion Key informant interview	PY 4 PY 5	Monitoring and Evaluation team

	Baseline: Targets: EoP & FYs				
	8. % increase in households who use/adopt improved technologies for the market oriented commodities (varieties/breed, implements, fertilizer, chemical and best practices. Baseline: Targets: EoP & FYs	OoARD DAs PA officials	Review of records Group discussion Key informant interview	PY 4 PY 5	Monitoring and Evaluation team
	9. Change in attitude or behavior about HIV/AIDS Baseline: Targets: EoP & FYs	OoARD DAs PA officials	Review of records Group discussion Key informant interview	PY 4 PY 5	Monitoring and Evaluation team
	10. % increase in yield for crop and livestock market oriented commodities Baseline: Targets: EoP & FYs	OoARD DAs PA officials	Review of records Group discussion Key informant interview	PY 4 PY 5	Monitoring and Evaluation team
	11. % of women in valued- added activities involving market oriented commodities.	OoARD DAs PA officials	Review of records Group discussion	PY 4	Monitoring and Evaluation team

	Baseline: Targets: EoP & FYs		Key informant interview	PY 5	
	12. % increase in households who have access to input supply and financial services Baseline: Targets: EoP & FYs	OoARD DAs PA officials	Review of records Group discussion Key informant interview	PY 4 PY 5	Monitoring and Evaluation team
	13.% increase in private suppliers of input and financial services Baseline: Targets: EoP & FYs	OoARD DAs PA officials	Review of records Group discussion Key informant interview	PY 4 PY 5	Monitoring and Evaluation team
	14. Extent to which IPMS approach has strengthened farmer marketing groups (including cooperatives) Baseline: Targets: EoP & FYs	OoARD DAs PA officials	Review of records Group discussion Key informant interview	PY 4 PY 5	Monitoring and Evaluation team
	15.%increase in farmer marketing groups(including cooperatives)	OoARD DAs PA officials	Review of records Group discussion Key informant interview	PY 4 PY 5	Monitoring and Evaluation team

	Baseline: Targets: EoP & FYs				
	16. % increase in farmer to farmer input suppliers and supply groups Baseline: Targets: EoP & FYs	OoARD DAs PA officials	Review of records Group discussion Key informant interview	PY 4 PY 5	Monitoring and Evaluation team
	17. Amount of revenue generated by the introduction and promotion of the market oriented commodities at district level. Baseline: Targets: EoP & FYs	OoARD DAs PA officials	Review of records Group discussion Key informant interview	PY 4 PY 5	Monitoring and Evaluation team
	18. Extent of spread of market oriented commodities to neighboring Woredas Baseline: Targets: EoP & FYs	OoARD DAs ZoARD Neighboring OoARD	Interview	PY 4 PY 5	Monitoring and Evaluation team
	19. Extent of spread of IPMS approaches to neighboring Woredas	OoARD DAs ZoARD	Interview	PY 4 PY 5	Monitoring and Evaluation team

	Baseline: Targets: EoP & FYs	Neighboring OoARD			
Outcome # 1: Functional agricultural knowledge management system operationalized at Woreda & Federal levels, highlighting innovations and appropriate technologies.	1. Extent of utilization of knowledge-based approaches to developing marketable commodities. Baseline: Targets: EoP & FYs	- Communities (of farmers and/or pastoralists in PLWs. The same structure as used in the baseline survey will be used to establish group interviews)	- Group Interviews	-PY 3 -PY 4 - PY 5	- Under the management of the IPMS Performance Measurement Officer (PMO), PM Assistants (PMAs) prepare data collection instruments in collaboration with RDOs, RDAs, and FAs. PMAs, under the PMO, will be responsible for the collection, analyzes and reports on data collected. - IPMS management and/or Steering Committee (SC) make decisions as required.
	2. Level of change in access to information by Woreda, Regional and Federal levels Baseline: Targets: EoP & FYs	- Woreda level: OoARD, WALC, & NGOs - Regional level: BoARD & RALC Chairperson - Federal level: NALC - Private sector	- Interviews	- PY 3 -PY 4 - PY 5	- PMAs (PMAs will supervise and participate in data collection, analyzes and reports on data collected)

	<p>3. Usefulness of information received by farmers, institutions and organizations.</p> <p>Baseline: Targets: EoP & FYs</p>	<ul style="list-style-type: none"> - Communities - Woreda level: OoARD & NGOs - Regional level: BoARD & RALC Chairperson - Federal level: NALC & MoARD 	<ul style="list-style-type: none"> - Group Interviews - Interviews <p><i>(Interview questions need to define “usefulness”)</i></p>	<ul style="list-style-type: none"> - PY 3 -PY 4 - PY 5 	<ul style="list-style-type: none"> - PMAs
<p>Outputs that contribute primarily to Outcome #1.</p> <p>Output # 1.1:</p> <p>Increased understanding and awareness of the knowledge requirements for managing the new commodities of farming systems in the PLWs.</p>	<p>1. Extent of inquiries by women and men farmers about different options for production and marketing of market oriented commodities.</p> <p>Baseline: Targets: EoP & FYs</p>	<ul style="list-style-type: none"> - Communities - DAs 	<ul style="list-style-type: none"> - Group interviews - Interviews (and possible review of records or activity logs) 	<ul style="list-style-type: none"> - Annually, beginning in PY 2. 	<ul style="list-style-type: none"> - PMAs
	<p>2. Frequency of interface between Woreda OARD, Regional BoARD, MoARD, Regional & National Agriculture Research Institutions (RARIs and NARIs) & private sector.</p> <p>Baseline: Targets: EoP & FYs</p>	<ul style="list-style-type: none"> - Office of Agriculture and Rural Development (OoARD) at Woreda level - Regional BoARD - Federal MoARD -Regional & National Agriculture Research Institutions (RARIs and NARIs) -Private sector 	<ul style="list-style-type: none"> - Interviews and/or document review for all data sources 	<ul style="list-style-type: none"> - Annually, beginning in PY 2. 	<ul style="list-style-type: none"> - PMAs

Output # 1.2: Increased availability of knowledge in various forms.	1. Number of knowledge assets (e.g., best practices, improved varieties and institutional innovations) made available to women and men farmers and to Woreda level organizations. Baseline: Targets: EoP & FYs	- Communities - DAs - Woreda OoARD	- Group Interviews - Interviews and review of documents - Interviews	- Annually, beginning in PY 2.	- PMAs
	2. Presence of ready access points (persons or tools) to information sources. Baseline: Targets: EoP & FYs	- FTCs - OoARD - BoARD or Planning Officer - MoARD - IPMS Office	- Interviews - Interviews - Interviews - Interviews - Review Project records	- Annually, beginning in PY 2.	- PMAs
Output # 1.3: Enhanced knowledge sharing systems established.	1. Extent of dissemination of available knowledge. Baseline: Targets: EoP & FYs	- Communities - Woreda OoARD - Woreda Knowledge Centre (WKC) - DAs	- Group Interviews - Interviews - Interviews - Interviews and review of documents	- Annually, beginning in PY 2.	- PMAs

	<p>2. Frequency of knowledge sharing [e.g., at meetings, farmers' days, FTCs, Communities of Practices, exhibitions, conferences as well as amongst various Stakeholder organizations (e.g., NALCs, RALCs, WALCs and private sector organizations)].</p> <p>Baseline: Targets: EoP & FYs</p>	<ul style="list-style-type: none"> - FTCs - OoARD and/or WALC - BoARD and/or RALC - MoARD and/or NALC - Ethiopian Agricultural Research System (EARS) 	<ul style="list-style-type: none"> - Interview DAs - Interviews - Interviews and/or review records of WALC & RALC meetings - Interviews - Interviews and/or surveys 	<ul style="list-style-type: none"> - Annually, beginning in PY 2. 	<ul style="list-style-type: none"> - PMAs
<p>Output # 1.4:</p> <p>National Agricultural Information Resource Centre (NAIRC) established & operationalized within MoARD.</p>	<p>1. Presence of a central repository of information on priority commodities that is easily accessible by Stakeholders.</p> <p>Baseline: Targets: EoP & FYs</p>	<ul style="list-style-type: none"> - MoARD - BoARD - OoARD 	<ul style="list-style-type: none"> - Interviews and/or physical inspection - Interviews and/or physical inspection - Interviews and/or physical inspection 	<ul style="list-style-type: none"> PY 3 PY 4 PY 5 	<ul style="list-style-type: none"> - PMAs

	<p>2. Extent to which information available on priority commodities addresses issues of technology, extension services, credit information & services, marketing, & input supply.</p> <p>Baseline: Targets: EoP & FYs</p>	<p>- MoARD</p> <p>- BoARD</p> <p>- OoARD</p>	<p>- Interviews</p> <p>- Interviews</p> <p>- Interviews</p>	<p>PY 3</p> <p>PY 4</p> <p>PY 5</p>	<p>- PMAs</p>
<p>Output # 1.5:</p> <p>ICT networks and infrastructure established & operationalized.</p>	<p>1. Presence of ICT network & infrastructure established and operationalized at different levels.</p> <p>Baseline: Targets: EoP & FYs</p>	<p>- MoARD</p> <p>- BoARD</p> <p>- OoARD</p> <p>- IPMS Office</p>	<p>- Interviews for all levels</p> <p>- Document reviews for all levels</p> <p>- Physical inspection for all levels</p> <p>- Document reviews</p>	<p>- PY 3</p> <p>-PY 4</p> <p>- PY 5</p>	<p>- PMAs</p>
	<p>2. Extent to which Woreda office personnel, women and men, are able to search for desired information at the Ethiopian Agricultural Portal (EAP) and from other relevant sources.</p> <p>Baseline: Targets: EoP & FYs</p>	<p>- MoARD</p> <p>- BoARD</p> <p>- OoARD</p> <p>- WKC</p>	<p>- Interviews for all levels</p> <p>- Document reviews for all levels</p> <p>- Physical inspection for all levels</p>	<p>- PY 3</p> <p>-PY 4</p> <p>- PY 5</p>	<p>- PMAs</p>

Outcome # 2: Strengthened innovation capacity of farmers, pastoralists, community-based and private sector organizations, and agriculture and natural resource management public organizations to support the development of small-holder, market-oriented agricultural production systems.	1. Extent of coordination, linkages, activities and/or communications between actors. Baseline: Targets: EoP & FYs	- OoARD - IPMS Office - CBOs - Private sector organizations - EARS - NGOs	- Interviews and/or review reports - Review 6 month activity reports - Interviews - Interviews - Review reports - Interviews	- PY 3 -PY 4 - PY 5	- PMAs
	2. Level of responsiveness of the extension system, including FTCs, to the needs of women and men farmers. Baseline: Targets: EoP & FYs	- Communities - DAs - OoARD	- Group Interviews - Interviews & review Annual Work Plans - Interviews & review planning documents and reports	- PY 3 -PY 4 - PY 5	- PMAs
	3. Level of satisfaction of women and men farmers with the technical & institutional support they receive from the public organization. Baseline: Targets: EoP & FYs	- Communities	- Group Interviews	- PY 3 -PY 4 - PY 5	- PMAs

<p>Outputs that contribute primarily to Outcome #2.</p> <p>Output # 2.1:</p> <p>Increased knowledge, awareness, understanding and skills of staff in public organizations, in the Ministry, and in Research & Educational institutions (including possible post-graduate candidates) to enhance their capacity to better respond to the needs of farmers (training in specific technical and social subjects such as: environmental studies, gender equality, HIV / AIDS, information and communication sciences, innovative extension, agronomy, marketing, and crops and animal production).</p>	<p>1. Extent to which staff in public organizations incorporate innovative methods in the provision of services to women and men farmers.</p> <p>Baseline: Targets: EoP & FYs</p>	<p>Staff, men and women, in public organizations, such as:</p> <ul style="list-style-type: none"> - OoARD - BoARD - MoARD - NARI (EARS) - DAs (TVET) - IPMS Office 	<p>- Interviews and/or review of Work Plans and reports of public organizations.</p>	<p>- Annually, beginning in PY 3.</p>	<p>- PMAs</p>
	<p>2. Level of satisfaction of women and men farmers & pastoralists with the services delivered to them by CBOs & private sector organizations.</p> <p>Baseline: Targets: EoP & FYs</p>	<p>- Communities</p>	<p>- Group Interviews</p>	<p>- Annually, beginning in PY 3.</p>	<p>- PMAs</p>

<p>Output #2.2:</p> <p>Increased knowledge, awareness, understanding and skills of women and men farmers, pastoralists, and staff from Community-Based Organizations (CBOs) and from private-sector organizations serving the PLWs.</p>	<p>1. Level of awareness, knowledge and skills of farmers and pastoralists on specific technical and social subjects.</p> <p>Baseline: Targets: EoP & FYs</p>	<ul style="list-style-type: none"> - Communities - CBOs - Private sector organizations 	<ul style="list-style-type: none"> - Group Interviews - Interviews - Interviews 	<p>- Annually, beginning in PY 3.</p>	<p>- PMAs</p>
<p>Output # 2.3:</p> <p>Collaborative network arrangements between farmers, pastoralists, CBOs, public and private sector organizations developed to better respond to market demands on the use of demand-driven agricultural technologies and services.</p>	<p>1. Presence of functional institutional arrangements that promote collaboration and coordination amongst various actors.</p> <p>Baseline: Targets: EoP & FYs</p>	<p>Heads of Bureaus and Sector Experts at:</p> <ul style="list-style-type: none"> - OoARD - BoARD - MoARD - IPMS Office 	<ul style="list-style-type: none"> - Interviews at the Woreda, Regional and Federal levels. - Review of planning documents - Review reports 	<p>- Annually, beginning in PY2.</p>	<p>- PMAs</p>

	<p>2. Extent to which these functional institutional arrangements promote collaboration and coordination amongst various actors in order to respond to and learn from market-oriented agricultural development.</p> <p>Baseline: Targets: EoP & FYs</p>	<ul style="list-style-type: none"> - OoARD - BoARD - MoARD - Private sector organizations - RARIs 	<ul style="list-style-type: none"> - Document reviews focusing on, e.g., shared plans and activities - Interviews - Interviews & review documents 	<ul style="list-style-type: none"> - Annually, beginning in PY2. 	<ul style="list-style-type: none"> - PMAs
<p>Outcome # 3:</p> <p>Appropriate technologies, innovative input supply – output marketing, and financial services adopted in order to improve agricultural productivity and market success in the PLWs.</p>	<p>1. Number of institutions providing innovative new agricultural support systems (e.g., extension, input supply, credit and marketing)</p> <p>Baseline: Targets: EoP & FYs</p>	<ul style="list-style-type: none"> - Communities - OoARD - PA Administration including DAs 	<ul style="list-style-type: none"> - Group Interviews - Interviews & review reports - Interviews 	<ul style="list-style-type: none"> - PY 3 -PY 4 - PY 5 	<ul style="list-style-type: none"> - PMAs
	<p>2. Extent to which technologies are sensitive to gender, HIV/AIDS, environment and sustainability issues.</p> <p>Baseline: Targets: EoP & FYs</p>	<ul style="list-style-type: none"> - Communities - OoARD - PA Administration including DAs 	<ul style="list-style-type: none"> - Group Interviews - Interviews & review reports - Interviews 	<ul style="list-style-type: none"> - PY 3 -PY 4 - PY 5 	<ul style="list-style-type: none"> - PMAs

	3. Extent to which OoARD and DAs adopted IPMS approaches	- Communities - OoARD - PA Administration including DAs -External observer	Group discussion Key informant interview	-PY 4 - PY 5	Monitoring and Evaluation team
Outputs that contribute primarily to Outcome #3. Output # 3.1: Ten PLWs established in four (4) regions that are strategically linked to the priorities of the Woreda & Regional Development Plans.	1. Ten PLWs with analyses or diagnoses and Annual Work Plans completed. Baseline: 0 PLWs Targets: EoP-10 & FYs	- IPMS Office	- Review completed Annual Work Plans	Annually, beginning in PY 2.	- PMAs
	2. Extent to which PLWs' Annual Work Plans are integrated with the priorities of the Woreda and Regional Development Plans. Baseline: Targets: EoP & FYs	- WALC Chairperson - RALC Chairperson - NALC Chairperson - IPMS office	- Interviews and review Annual Work Plans of WALC, RALC & NALC - Review completed Annual Work Plans	Annually, beginning in PY 2.	- PMAs
Output # 3.2: Appropriate technologies, processes and institutional innovations identified & promoted.	1. Number of appropriate technologies and processes identified & promoted. Baseline: Targets: EoP & FYs	- IPMS office	- Document review	- Annually, beginning in PY3.	- PMAs

	2. Number of institutional innovations identified & promoted (e.g., extension, input supply, credit, marketing) Baseline: Targets: EoP & FYs	- IPMS office	- Document review	- Annually, beginning in PY3.	- PMAs
Outcome # 4: Strategies, policy & technology options, and institutional innovations developed (from both research and lessons learned), documented and promoted in order to enhance market-oriented agricultural development.	1. Number of priority commodities for which technology options are developed, documented and promoted. Baseline: Targets: EoP & FYs	- IPMS Office - Woreda OoARD - BoARD	- Review Project documents and reports to capture scaling-up and out. - Interviews - Interviews	- PY 3 -PY 4 - PY 5	- PMAs
	2. Number of strategies, policy options and institutional innovations for knowledge management, capacity building, input/output marketing or services, developed, documented and promoted for market-oriented agricultural development. Baseline: Targets: EoP & FYs	- IPMS Office - Woreda OoARD - BoARD - MoARD - EARS	- Review Project documents and reports to capture scaling-up and out. - Interviews - Interviews - Interviews - Interviews	- PY 3 -PY 4 - PY 5	- PMAs

	<p>3. Number of all kinds of publications, media coverage or other outlets that promote IPMS strategies, policies & technology options, and institutional innovations.</p> <p>Baseline: Targets: EoP & FYs</p>	<p>- IPMS Office</p>	<p>- Review Project documents, studies and reports</p>	<p>- PY 3 -PY 4 - PY 5</p>	<p>- PMAs</p>
	<p>4. Extent to which IPMS publications are requested by Stakeholders.</p> <p>Baseline: Targets: EoP & FYs</p>	<p>- IPMS Office -Publication unit in ILRI -Woreda Knowledge Center(WKC) - Woreda OoARD</p>	<p>- Review Project documents and reports - Interviews - Interviews - Interviews -Interviews</p>	<p>- PY 3 -PY 4 - PY 5</p>	<p>- PMAs</p>
<p>Outputs that contribute primarily to Outcome #4.</p> <p>Output # 4.1:</p> <p>Approaches, methods, tools and processes for knowledge management developed, documented and promoted.</p>	<p>1. Number of completed studies on approaches, methods, tools and processes for knowledge management.</p> <p>Baseline: Targets: EoP & FYs</p>	<p>- IPMS office</p>	<p>- Review Project documents, studies and reports</p>	<p>-Annually, beginning in PY 2.</p>	<p>- PMAs</p>
	<p>2. Number of promotional events on knowledge management.</p> <p>Baseline: Targets: EoP & FYs</p>	<p>- IPMS office</p>	<p>- Review Project documents, studies and reports</p>	<p>- Annually, beginning in PY 2.</p>	<p>- PMAs</p>

	<p>3. Extent to which approaches, methods, tools and processes for knowledge management are relevant to Stakeholders.</p> <p>Baseline: Targets: EoP & FYs</p>	<ul style="list-style-type: none"> - Communities - OoARD - RARIs - MoARD - EIAR - Private sector - IPMS office 	<ul style="list-style-type: none"> - Group Interviews - Interviews & review documents - Interviews & review documents - Interviews & review documents - Interviews & review documents - Interviews & review documents - Interviews - Review Project documents, studies and reports 	- Annually, beginning in PY 2.	- PMAs
<p>Output # 4.2:</p> <p>Approaches, methods, tools and processes for capacity building developed, documented and promoted.</p>	<p>1. Number of completed studies on approaches, methods, tools and processes for capacity building.</p> <p>Baseline: Targets: EoP & FYs</p>	- IPMS office	- Review Project documents, studies and reports	- Annually, beginning in PY 2.	- PMAs
	<p>2. Number of promotional events on capacity building approaches.</p> <p>Baseline: Targets: EoP & FYs</p>	- IPMS office	- Review Project documents, studies and reports	- Annually, beginning in PY 2.	- PMAs

	<p>3. Extent to which approaches, methods, tools and processes for capacity building are relevant to Stakeholders.</p> <p>Baseline: Targets: EoP & FYs</p>	<ul style="list-style-type: none"> - Communities - PA including DAs - OoARD - Private sector - BoARD - MoARD - IPMS office 	<ul style="list-style-type: none"> - Group Interviews - Interviews & review documents - Interviews - Interviews - Interviews - Interviews - Review Project documents, studies and reports 	<ul style="list-style-type: none"> - Annually, beginning in PY 2. 	<ul style="list-style-type: none"> - PMAs
<p>Output #4.3:</p> <p>Approaches, methods and processes for market-oriented priority commodities including technologies and institutional arrangements developed, documented and promoted.</p>	<p>1. Number of completed studies on selected priority commodities.</p> <p>Baseline: Targets: EoP & FYs</p>	<ul style="list-style-type: none"> 1. IPMS office 	<ul style="list-style-type: none"> - Review Project documents, studies and reports 	<ul style="list-style-type: none"> - Annually, beginning in PY 2. 	<ul style="list-style-type: none"> - PMAs
	<p>2. Number of promotional events on priority commodities.</p> <p>Baseline: Targets: EoP & FYs</p>	<ul style="list-style-type: none"> - IPMS office 	<ul style="list-style-type: none"> - Review Project documents, studies and reports 	<ul style="list-style-type: none"> - Annually, beginning in PY 2. 	<ul style="list-style-type: none"> - PMAs

	<p>3. Extent to which completed studies on priority commodities are characterized for application outside of the PLWs.</p> <p>Baseline: Targets: EoP & FYs</p>	<p>- IPMS office</p> <p>- OoARD</p> <p>- BoARD</p>	<p>- Review Project documents, studies and reports</p> <p>- Interviews and review reports</p> <p>- Interviews and review reports</p>	<p>- Annually, beginning in PY 2.</p>	<p>- PMAs</p>
<p>Output # 4.4:</p> <p>The inter-relationships between the environment and agricultural productivity and production understood, documented and promoted.</p>	<p>1. Number of completed studies on the inter-relationships between the environment and agricultural productivity and production.</p> <p>Baseline: Targets: EoP & FYs</p>	<p>- IPMS Project</p>	<p>- Review Project documents, studies and reports</p>	<p>- Annually, beginning in PY 2.</p>	<p>- PMAs</p>
	<p>2. Number of promotional events on the environment.</p> <p>Baseline: Targets: EoP & FYs</p>	<p>- IPMS office</p>	<p>- Review Project documents, studies and reports</p>	<p>- Annually, beginning in PY 2.</p>	<p>- PMAs</p>

	<p>3. Extent to which documented agri-ecological relationships are relevant to PLWs, TVETs and to FTCs</p> <p>Baseline: Targets: EoP & FYs</p>	<ul style="list-style-type: none"> - PA including DAs - OoARD - FTCs - TVETs 	<ul style="list-style-type: none"> - Interviews - Interviews - Interviews with Development Agents at FTCs and review curriculum - Interview TVET Department of Natural Resources Instructors 	<ul style="list-style-type: none"> - Annually, beginning in PY 2. 	<ul style="list-style-type: none"> - PMAs
<p>Output # 4.5:</p> <p>The inter-relationships between gender equality and/or HIV/AIDS and agricultural productivity and production understood, documented and promoted.</p>	<p>1. Number of completed studies on the inter-relationships between gender equality and/or HIV/AIDS and agricultural productivity and production.</p> <p>Baseline: Targets: EoP & FYs</p>	<ul style="list-style-type: none"> - IPMS office 	<ul style="list-style-type: none"> - Review Project documents, studies and reports 	<ul style="list-style-type: none"> - Annually, beginning in PY 2. 	<ul style="list-style-type: none"> - PMAs
	<p>2. Number of promotional events on gender equality and/or HIV/AIDS.</p> <p>Baseline: Targets: EoP & FYs</p>	<ul style="list-style-type: none"> - IPMS office 	<ul style="list-style-type: none"> - Review Project documents, studies and reports 	<ul style="list-style-type: none"> - Annually, beginning in PY 2. 	<ul style="list-style-type: none"> - PMAs

	<p>3. Extent to which documented gender equality and/or HIV/AIDS and Woreda or local level agricultural productivity and production relationships are relevant to PLWs and incorporated into the curriculum at TVETs and at FTCs.</p> <p>Baseline: Targets: EoP & FYs</p>	<ul style="list-style-type: none"> - PA including DAs - OoARD - FTCs - TVETs 	<ul style="list-style-type: none"> - Interviews - Interviews - Interviews with Development Agents at FTCs and review curriculum - Interview TVET Department of Natural Resources Instructors 	<ul style="list-style-type: none"> - Annually, beginning in PY 2. 	<ul style="list-style-type: none"> - PMAs
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