

DALE PILOT LEARNING SITE DIAGNOSIS
AND PROGRAM DESIGN

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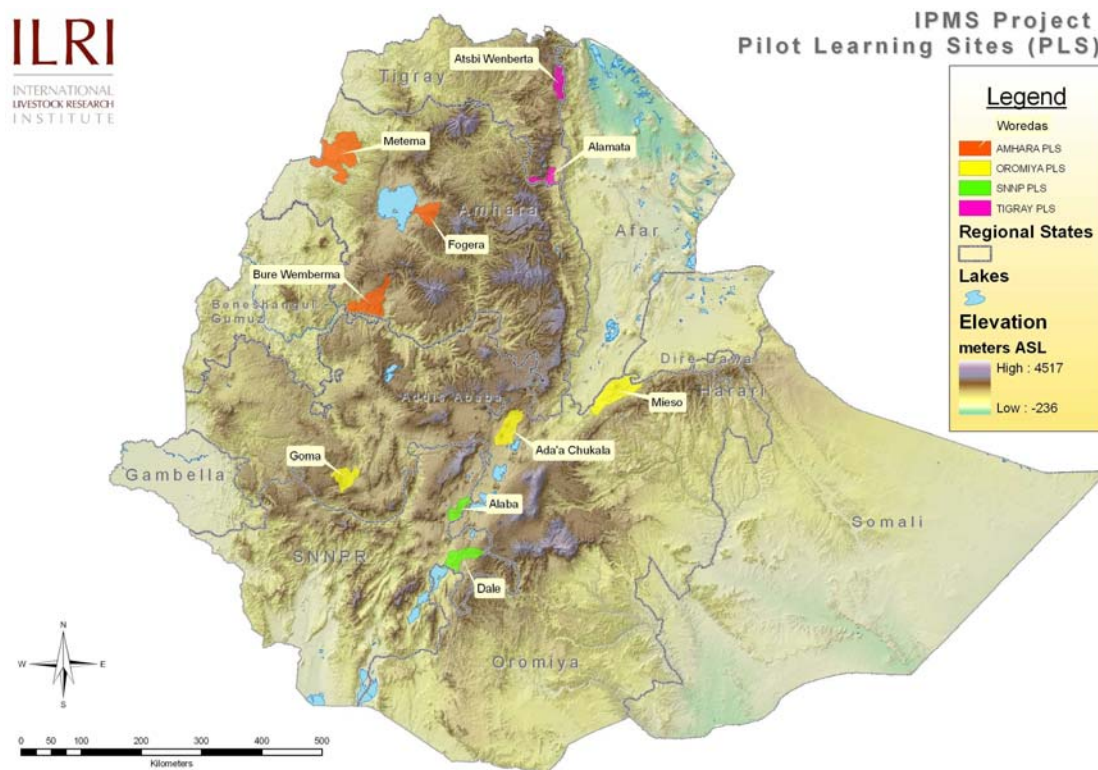
Dale Pilot Learning Site diagnosis and program design

By IPMS team (names)

1. Introduction

The International Livestock Research Institute (ILRI) and the Ministry of Agriculture (MoA) initiated a 5 year project in June 2004 with the financial assistance from the Canadian International Development Agency (CIDA). The project, entitled: "Improving productivity and market success" (IPMS) of Ethiopian farmers, aims at contributing to a reduction in poverty of the rural poor through market oriented agricultural development.

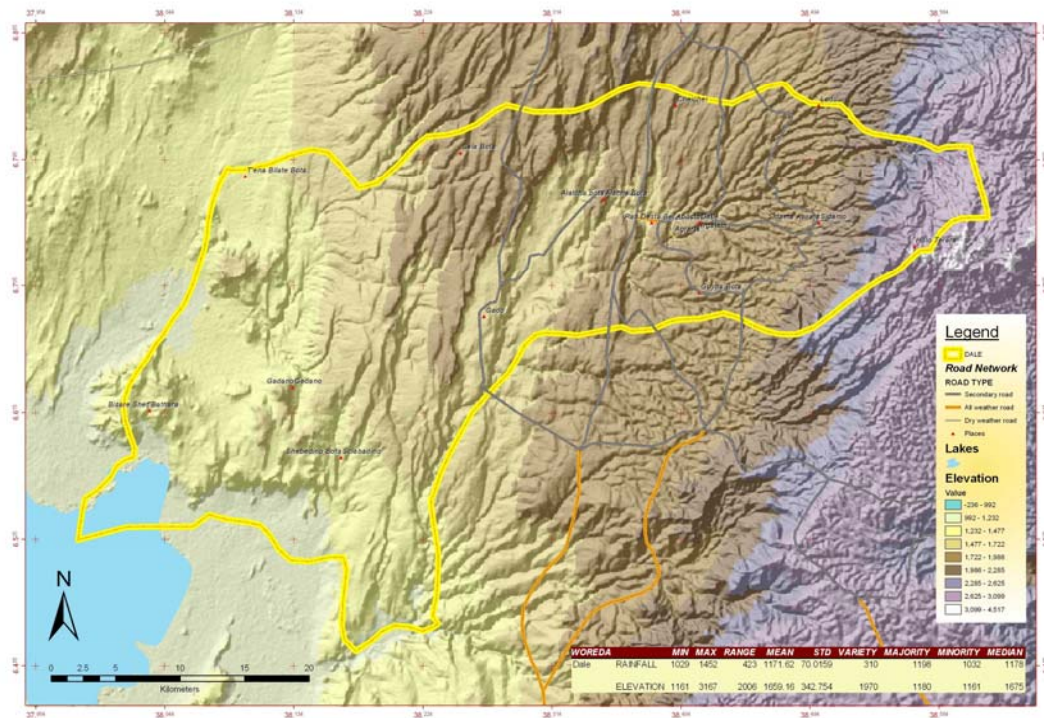
The IPMS project will assist by bringing knowledge on technologies generated by International and National Research Institutes as well as from other sources to the attention of the technology transfer agents and the farming community. It will also facilitate the feedback on these technologies. Such assistance will be provided to 10 pilot learning sites (PLS) across the country; (See map 1) Dale district is one of the 10 sites selected. To further enhance the utilization of such knowledge and the introduction of technologies, the IPMS project will also provide assistance to extension, input supply, marketing and finance institutions, including cooperatives. Such institutional support will be in the form of technical assistance, capacity building, supply of demonstration and training materials, some limited funds for innovative institutional arrangements and studies aimed at developing innovative institutional arrangements.



2. Farming system, crop and livestock priorities

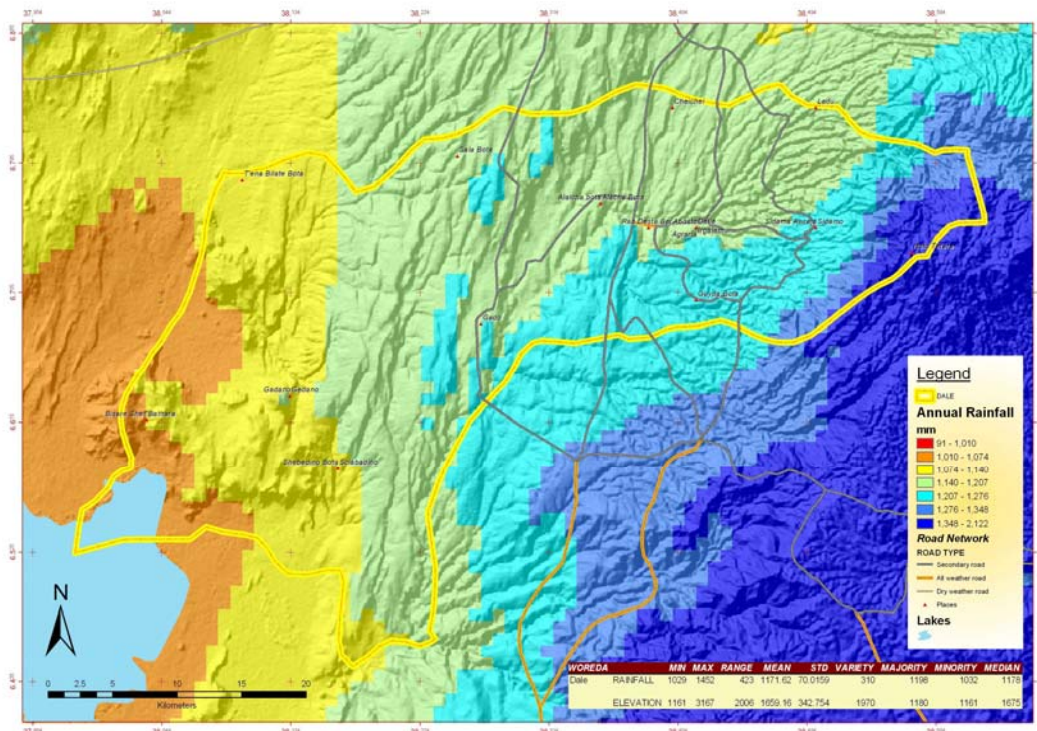
2.1 Description of Dale Woreda

Dale Woreda is one of the ten Woredas in Sidama zone of SNNPR with a total area of 1,411 km², at about 320 km south of Addis. The Woreda is subdivided into 76 Pas. According to CSA (2003), the population of the Woreda is estimated at 369548 of which women account for 57.6% of the population. The altitude of the Woreda ranges from 1170 around Lake Abaya to the west, while reaching to about 3200 m asl in the eastern part of Woreda. The altitude at Yirgalem is 1765 m asl. Dale is the biggest Woreda in Sidama zone. (See Map 2).



Map 2. Elevation map of Dale woreda

The mean annual rainfall (1989-1998) at Awada Research sub-centre in Yirgalem is 1314 mm. Rainfall does decline from the highlands in the east to lowlands in the west (See map 3).



Map 3. Rainfall Map of Dale Woreda

There are two cropping seasons in the area. Belg (short rainy season) from March to April and Meher (main rainy season) from June to September. Belg rains are mainly used for land preparation and planting long cycle crops such as maize and seedbed preparation for Meher crops. The Meher rains are used for planting of cereal crops like barley, teff, wheat and vegetable crops. Meher rains are also responsible for the growth and development of perennial crops such as enset, coffee and chat.

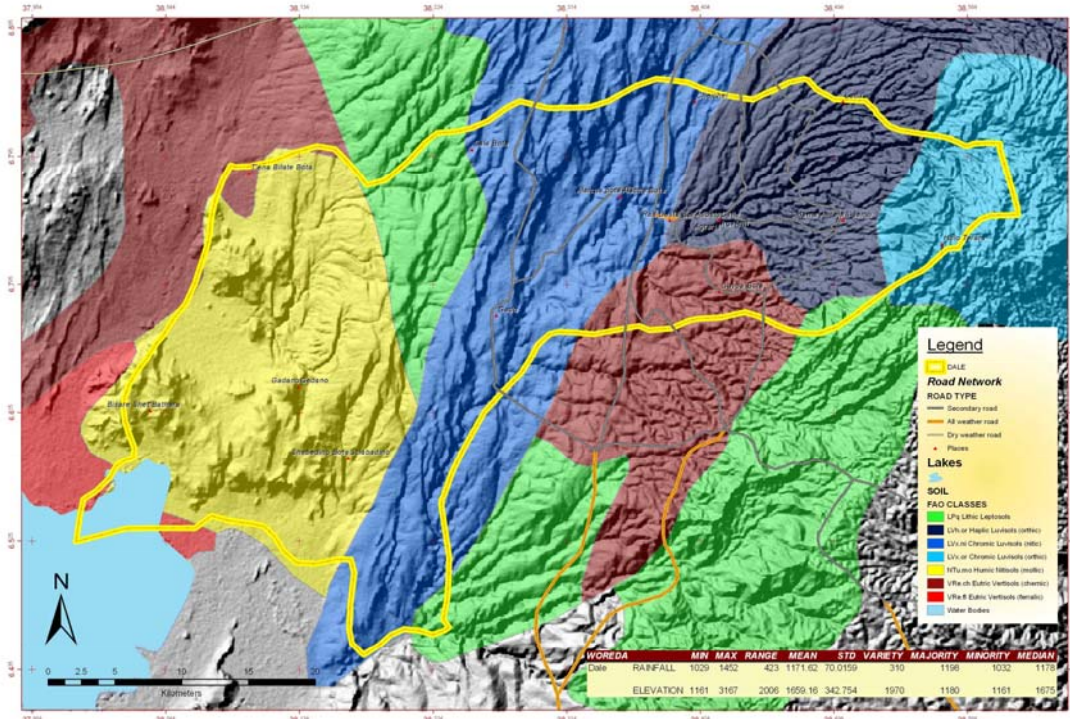
Livestock also play a major role in crop production in areas of the mid highlands and lowlands for cereal production (draught power) in addition to meat and milk and prestige.

2.2 Priority Farming systems

Two main farming systems can be found in Dale PLS.

Garden coffee, enset, and livestock (hereafter referred to as coffee/livestock system)

The system is found east of the main road transecting Dale from north to south. The terrain is hilly and soils are red (Nitosols) (See map 4).



Map 4. Soils map of Dale Woreda

Rainfall is higher and more reliable than in the dry midlands haricot bean/livestock system. The farming system is composed of garden coffee, enset, and cattle, which are tethered and kept for manure and production of dairy products. Other crops in the system are haricot beans (as an intercrop), yam, cereals, fruits, mainly avocado and bananas. Because of the perennial nature of the crop and the small holding size (between 0.25-0.5 ha per family), hand hoeing is the predominant method of cultivation.

Cereals, enset, haricot beans, garden coffee, livestock (hereafter referred to as haricot bean/livestock system)

This system is found west of the road transecting Dale from North to South. The terrain varies from relatively flat to hilly. Black soils (Pellic Vertisols) are commonly found on the flat areas and red soils on the slopes. Rainfall is lower and more erratic than in the coffee system. This system is dominated by cereals (maize, teff) rotated with haricot beans. Enset is cultivated near the homesteads. Garden coffee is grown in small patches, on the red soils. Extensive grazing areas are found, which are used for herding the oxen, cattle and goats. Average farm size is estimated at 1.5 ha. The farmers use oxen for their cultivation.

Besides these 2 major systems, two smaller systems can be found, one in the extreme east at the high altitude where farmers grow horticultural crops (shallots) and one in the extreme west, near Lake Abaya where a pastoralist system is found.

2.3 Priority crop commodities

The government is clear in its strategy for a market led development in that it has chosen two crops i.e.

- Coffee
- Haricot beans (white variety-Awash 1)

According to the available statistics, the area under coffee is 15,375 ha and to total of 9.3 million kg of red cherry purchased in 2002/03 (5.7 million in 2003/04. Garden coffee improvement will be pushed predominantly in the coffee/livestock system. A total of 42 PAs have been targeted for this specialization (Map3). However, there are 59 PAs where coffee is grown.

While this strategy is in line with the already existing farming system, it is also important to reduce the risk of depending on coffee as the only source of cash income. To diversify the cash income several crop and livestock (see 3.3) options may be considered. Based on the recommendations of the workshop participants the following crop commodities were recommended: i) Fruit trees (avocado, banana, papaya and mango), all of which are already present in the coffee/livestock system, ii) spices (cardamom, ginger) and iii) pineapple

The commercialization of the haricot beans is targeted for the haricot bean/livestock farming system. The area und beans at the moment is still small i.e, 2,300 ha and the estimated production is 670 tons. A total of 22 PAs are targeted for specialization (Map 3). The government intends to commercialize the haricot bean for export purposes, using the Awash 1 variety (small white seeds). This is a new introduction to the area which can either be added to and/or replace the area already sown with the local red Wollayta variety.

To reduce dependency on only one cash crop, diversification of cash income sources should be pursued including livestock based ones (see 3.3) and crops. Based on the recommendations of the workshop the following commodities were selected: i) Irrigated onions (government is presently promoting water harvesting technologies (ponds) for small scale horticultural crop production) ii) teff, iii) soy bean

2.4 Livestock priorities

The main livestock species in the Woreda are cattle, goats and sheep. The livestock resources are cattle – 225,698 (82,666 local cows and 1584 crossbred dairy animals, 80% are in in urban and peri-urban areas); sheep – 30,152; Goats – 31,443; Poultry – 218,923; Horses – 2,498; Mules – 431; Donkeys – 16,321; Beehives – 10,949.

Production systems range from extensive system in the lowlands (haricot bean/livestock system) to intensive tethered system in the major coffee/livestock system. Sheep production is important in the Dega areas, cattle, sheep and goat production is major in the mid-altitudes and goat, cattle, and sheep production are important in the lowland and Kolla areas. Land preparation is mainly done by oxen power in the coffee/livestock system or human power using hoe in the coffee/livestock, depending on land size, availability of oxen. Oxen ownership is very low and farmers share their oxen for plowing. In the Woreda, only 16% of the farmers have a pair of oxen, 26% have one ox and 58% have no oxen. There is a large resource of production of skins and hides in the Woreda. However, only 37% of

the marketable skins and hides were officially marketed in 1996 (Ethiopian Calendar). There is a plan to increase the proportion of marketable skins and hides to 70% in three years. Production of fattened cattle, goat and sheep has great potential and there is a plan to enhance meat production in the Woreda. The idea of introduction of single ox technology or donkey power is feasible particularly in the light soil areas as there is no cultural barriers in their use. The poultry production system is traditional using local birds.

The market-led priority livestock commodities incorporated in the Woreda development plan are:

1. Dairy Production
2. Meat production from fattened ruminants (mainly cattle and goats)
3. Skins and Hides
4. Poultry production

Apiculture is identified as a potential commodity for development, but the flowers of the toxic plant, Euphorbia, is alleged to be killing bees and there is an urgent need to investigate the problem and develop possible solutions.

3. Institutions

3.1 Marketing

Cooperatives

The cooperatives organization desk of Dale Woreda organized under the three teams of cooperatives organization and expansion, audit and finance, and marketing, credit and insurance, is mandated for the organization and development of cooperatives in the Woreda. There are 15 multipurpose cooperatives, of which 12 are organized based on the new cooperatives law and are registered. The 12 cooperatives have about 29, 295 members (nearly 50% of rural households of the Woreda), of which 1,002 are females. The remaining three multipurpose cooperatives are in the process of being organized according to the new law in order to be registered. All registered multipurpose cooperatives are members of the Sidama Coffee Farmers Cooperative Union (SCFCU). In addition to the multipurpose cooperatives an urban dairy cooperative is operating in the Woreda (see dairy analysis table). One irrigation cooperative and a rural dairy cooperative are in the process of establishment.

The multipurpose cooperatives' primary activity is coffee marketing. These cooperatives purchase red cherries from farmers, process and sale coffee beans. The 12 registered cooperatives sell their coffee to the union. The multipurpose cooperatives own and operate 23 coffee pulpers/de-hullers. Private traders in the Woreda operate another 34 pulpers/de-hullers. Three cooperatives are already certified for organic coffee production, while another 5 cooperatives are in the process of finalizing their certification.

In addition to coffee marketing the multipurpose cooperatives are also involved, in limited way, in fertilizer supply, grain mill services, marketing of hides and skins, and credit supply linked to supply of inputs and marketing.

The cooperatives have started hiring professional managers as of last July, before which all cooperatives were managed by a committee of elected officials. The hired manager reports to the committee of elected officials, but is mandated to run the business activities of the cooperatives on a day-to-day basis. However, the authority and responsibilities of the managers is not quite clear at the moment.

The concerns regarding cooperative organization and development in the Woreda relate to the capacity of the cooperation desk itself and the capacity and operation of the cooperatives. The desk has only 8 of the required 18 professional positions filled. Of special concern is the limited number of cooperative organizers. Other concerns of the cooperative organization desk include lack of office equipment such as computers and typewriters and shortage of transport facilities.

Some of the multipurpose cooperatives have limited financial capacity and are indebted. The outstanding debts are now barriers for new loans. Other concerns of the multipurpose cooperatives include inefficiency of committee management, variability of coffee prices, and low sense of ownership of members.

Others

Besides the multi purpose and specialized cooperatives, private traders play a major role in the marketing of all crop (except coffee) and livestock products. It was estimated that although the cooperatives sale of coffee has increased, about 2/3 of the washed coffee is still sold through the private sector.

3.2 Input supply

Woreda input supply desk

The Woreda input supply desk is organized with four expert positions, viz., input credit and distribution, crop seeds multiplication, forage seeds multiplication, and farm implements and chemicals. The functions of the input supply desk include facilitating input credit to farmers, collect credit repayment through development agents (DAs), and supervise farmer seed multiplication schemes. The desk also serves as a member of the Woreda credit committee which approves credit requests of farmers.

The inputs provided to farmers through the input supply desk include fertilizer (for maize, teff, wheat), improved seeds (maize, teff, wheat and beans), limited farm implements, livestock for fattening and production from local purchase (oxen, sheep and goats), improved poultry, improved beehives, post-harvest technology, and horticultural seeds as they become available in the form of aid.

Only two of the four expert positions of the input supply desk are currently filled. Moreover, the involvement of DAs in the collection of repayments detracts the DAs activities as development agents. To date access to input by women has been low. The need for fertilizer (for maize, teff and wheat) is greater than the supply. The availability of farm implements is especially much lower than the demand for it. Especially in the hoe-culture system, since human labour is used to prepare the land, the shortage of implements such as hoes and spades is serious. In addition to shortage in quantity, farmers complain about the quality of the available implements whenever they are available.

The absence of regular supply of horticultural crops was seen to be another concern of farmers. Especially the absence of seedlings and planting materials for fruit trees was mentioned as a serious constraint for the development of fruit crop production. Although the need for input credit was consistently observed to be higher than the supply, farmers have not been completely able to pay down payments.

Others

As mentioned previously, the other major player in the supply of inputs are the multi purpose cooperatives (see 3.1). Farmers also start playing a role in the production and supply of seeds and planting materials (see crop table analysis). The supply of inputs and services for livestock, including supply of improved breeds, AI services, bull stations and veterinary services and feed are described in the livestock analysis tables.

3.3 Rural Finance

Micro finance institutions

Two micro-finance institutions operate in Dale Woreda, viz., Sidama Micro-finance Institution (SMFI) and Omo Micro-finance Institution (OMFI). While OMFI operates regionally, SMFI operates only in the Sidama zone. The activities for which credit is provided in rural areas include fattening of livestock, down payment for fertilizer credit, dairy, handicraft and services. SMFI has active clients of 2,365, of which 711 are female, and has disbursed about Birr 5.5 million in the Woreda since its establishment in 1998. OMFI has active clients of 1,547, of which 224 are female and has disbursed about Birr 4.1 million since its establishment in 1997.

Both micro-finance institutions use group collateral approach. While OMFI uses loan groups and loan centres (groups of groups), SMFI uses only loan groups. In both institutions, the PA is involved in initial screening of loan requests. In the case of SMFI, the PA chairperson approves request for the credit before the institution accepts the request for further screening and processing. In the case of OMFI, a credit and saving committee, chaired by the PA chairperson, approves loan requests before they get to the institution. Both micro-finance institutions give training and education on credit and saving before they disburse loans. The OMFI organizes women borrowers separately from men. In both cases, not more than one family member can get credit from the institution. SMFI requires that both the husband and wife sign for the credit while the OMFI requires only the borrower signing for the loan. The minimum loan offered by OMFI is Birr 50, while the maximum is Birr 5000. The minimum loan offered by SMFI is Birr 1000, while the maximum is Birr 5000.

In both institutions, people under the age of 18 or above the age of 60, the landless and the unmarried are not eligible for credit. SMFI requires 1% of the principal as a payment for insurance against the death of the borrower. In the case when the borrower dies, the family members are not held responsible to pay the debt. On the other hand, the OMFI does not require insurance against death payment and family members are held responsible for debt payment upon death of the borrower.

There are differences in repayment schedules between the two institutions. The SMFI requires that repayment be made every 15 days, plus Birr 10 saving deposit. The OMFI offers two types of loans: term loan and regular loan. Term loans are paid at end of term, including interest. Repayments for regular loans are made according to the terms of agreement made. The repayment rate of both institutions is currently above 95%.

Both institutions mentioned that their major concern is the shortage of loan fund. Both institutions have not been able to provide credit services to farmers who are eligible and apply for loan. Other concerns of the rural finance system include lack of transport facilities for staff to reach communities, recurrent drought which renders borrowers unable to repay credit, and poor saving culture of farmers. The lack of linkage between the credit institutions and the agricultural extension service was seen as a major gap in coordinating the activities of the extension service with the credit supply.

Others

Besides the micro finance institutions, credit for inputs is also provided through the multi purpose cooperatives (see 3.1) and the Woreda input and credit desk (see 3.2). Seven saving and credit cooperatives have also been established and 2 more are being registered. Credit for financing of crops, in particular coffee, is provided through commercial and government banks.

3.4 Agricultural extension

The Agriculture Desk in the Woreda conducts the agricultural extension service in the Woreda, which is one of the desks under the Rural Development Coordinating Office. The agriculture desk is structured under four sections: crop production, livestock production, natural resources development and protection, and coffee and spices, and coffee inspection. The crop production section has five teams; livestock production section, three teams; natural resources development and protection, two teams; and the coffee and spices, and coffee inspection has three teams. The teams in the livestock production include livestock processing and marketing, livestock husbandry and forage development, and animal health.

Development agents (DAs) in the Woreda are involved in the distribution of inputs supplied to farmers on credit, and collection of down payments and credit repayments. The involvement of DAs in such activities does not go along with their mandates as agents of technology and knowledge transfer, and their mission of agents of development. This situation seems to have been recognized by officials at different levels and plans are that DAs will be relieved of their involvement in credit distribution and collection.

There is high mobility of the DAs resulting in discontinuity of operations. DAs also complain about the incentive and reward system currently applied. Other concerns of the extension system include inadequate number of DAs and subject matter specialists, low level of training of DAs, shortage of operational budget, and shortage of transportation facilities. Of particular concern at the Woreda level is the lack of coordination of the extension system with the micro-finance institutions operating in the Woreda. An overview of the staff is provided in the following table.

Table 1. Staffing of Dale Woreda Office of Agriculture and Rural development

Desk (Department)	Level of education.	Number
Crop production Technical Coordination	12+2; 12+4	13; 1
Natural Resources	12+4; 12+2	2; 3
Livestock Production	12+2; 12	5; 1
Coffee production	12+2; 12+4	7; 1
Cooperatives	12+3; 12+2; 12+1; 12+9 months	2; 8; 1; 9
Development Agents	12	149
Extension Supervisors	12	25

Currently 25 FTCs have been constructed and 11 more are planned for this fiscal year.

3.5 HIV/AIDS services

The Dale Woreda HIV/AIDS Prevention and Control Office (HAPCO) was established in 1994 with 3 staff. It closely works with other institutions such as NGOs, Idir, Youth Associations, government offices, etc. The office provides training and awareness creation in order to change the attitude of people. There is a woreda level HAPCO general assembly composed of Administrator (chair), Health Desk (secretary), Woreda organizing offices (like Rural Development, Finance and Economy Development), Woreda executive desk heads, etc. amounting to about 125 people. A woreda level executive board also present which is composed of head of desk, head of HAPCO, 3 people from the executive desks, 1 representative from the woreda congress, 1 from women's association, etc. consisting of about 14-15 people in total. In order to reduce the spread of the disease, the woreda HIV/AIDS office has received birr 329,560 grant from the Federal government and distributed to PAs. This money was spent for creating awareness, care for HIV+ (in cash and material form, including for creating sustainable income), establishment of youth entertainment facilities, training of mid-wives and support for anti-AIDS clubs. Among the cultural factors enhancing the spread of HIV/AIDS in Dale woreda are the practice of girl and boy circumcision, inheritance of wife by brother, rape especially due to night markets, polygamy, etc. In addition, it is cultural that if a divorced woman apologizes to her ex-husband she should be accepted and remarried by the husband even if she or he was remarried because it is a cultural norm in the area. This aggravates the spread of the disease. Prostitution is not much It was reported that the HIV prevalence rate in Dale is about 3.7%, while it is 13% in the Region.

Currently, there exist 7 strong anti-AIDS clubs in Yirgalem town while 5 other functional clubs exist in the rural areas. Awareness creation is done at funeral places, festivals, etc. The other approach to create awareness is to encourage the community to deliberate on the HIV issue. This approach is called Community Capacity Enhancement (CCE). The premise is that people have to decide by themselves. In addition, Ersho, an association of HIV+ persons from both rural and urban areas, is involved in awareness creation.

It was not possible to quantify the effects of all these activities of the office. However, there are indications that people in the town are using condoms more and more, even though it is still considered as a taboo in the rural area. On the other hand people are also requesting HIV test before marriage and people in the rural areas have started not to use razor blades together.

The problems of the office include shortage of manpower (currently operating at 50% of the number of experts required), transportation problems (only 1 motorbike available), lack of commitment of the different offices and lack of efficiency of the board.

4. Priority commodity description, analysis and potential interventions

The following tables provide a brief description of production, input supply and marketing aspects of the priority commodities together with areas requiring attention and potential interventions as suggested by farmers and professionals during the Woreda planning workshop. In addition, the possible institutions to be involved in executing these activities are also shown.

Table 2 Coffee

Production

Farmers grow their coffee in small plots varying in size from 0.2 to 0.25 ha; a few farmers have larger plots, up to 0.5ha. A distinction can be made between garden (homestead) plots and field plots. In the garden plots, farmers keep the old Sidama land races, while in the field plots they grow improved introduced varieties. The latter varieties have been introduced in the late seventies with the help of the Coffee Improvement Project (CIP). The Sidama land races are generally vigorous in growth while the CIP selections vary in vigour.

The CIP project was initiated by the previous Government to combat Coffee Berry Disease (CBD), which had seriously affected the Sidama land races which belong to the Typica type of Arabica coffee. A total of 13 CBD resistant selections from the south west of the country (Jimma), which are Bourbon type of Arabica coffee, have been introduced. The accessions introduced were:

- | | |
|----------|----------|
| 1. 74112 | 8. 75227 |
| 2. 74110 | 9. 7454 |
| 3. 7440 | 10. 7487 |
| 4. 74148 | 11. 744 |
| 5. 74140 | 12. 741 |
| 6. 74165 | 13. 754 |
| 7. 74158 | |

The proportion of improved selections versus the land races varies between Kebeles (and Woredas) depending on the presence of road infrastructure. Farmer interviewed (Shewe PA) near the road reported up to 90% of their coffee being from improved varieties. Farmers also reported that the introduction of new varieties in the past (during the previous government) depended on the membership of cooperatives; non members (usually) did not receive seedlings.

Farmers reported to manage their improved plots better than the local plots (especially spacing). It was observed that the coffee grown in the fields was less mixed/shaded than in the garden plots. Cow manure is commonly used to fertilize the coffee trees. Coffee pulp from the de-hulling factories is also distributed to members of the service cooperative and used for composting. Farmers intercrop the coffee with haricot bean (red Wolayta variety). Various shade trees (in particular *Melitia ferugina*) can be observed, as well as some fruit trees (farmers reported some negative effects). Women participate in the weeding and harvesting activities.

Yields are reported to be between 4 to 5 qt of clean coffee/ha. To boost the production, the extension has embarked on a program of de stumping old coffee trees and replanting with CBD resistant varieties, in particular the introduced selections which were best adopted to the Dale Woreda (selections 74112 74110, 7440, 74148 and

74140). This is expected to raise yield to 8 qt of clean coffee/ha. Along with these, use of composting (organic farming) and quality improvement through follow up, training of farmers, timely input supply are also planned.

Areas which need to be addressed	Potential interventions	Responsibilities/tasks
Old trees – poor production potentials	De stumping	Woreda agriculture desk–extension
	Replacement with new varieties (priority for Sidama varieties – see marketing)	EARO research on new selections Woreda agriculture desk – extension on establishment of new coffee trees
Irregular bearing of land races	Selection and breeding	EARO - research
CBD infestation of land races (dependent upon rainfall), Effect of soil fertility on CBD infestation rate and many other factors unknown	Selection/ breeding and management practices	EARO – research and TA on management Woreda agriculture desk – extension on management
Coffee wilt disease	Management of diseased trees	EARO – TA on disease management Woreda agriculture desk – extension on diseased tree management
Die back (yellowing) of improved varieties	Increase shade trees, for medium and long term	EARO/ICRAF – TA on shade/soil fertility management Woreda agriculture desk – extension
Poor coffee quality as a result of poor agricultural practices	Improve economic viability of the coffee crop Increase farmer knowledge on improving coffee quality	EARO – study economics of small farmers coffee production –also see marketing EARO - TA on Good Agricultural Practices (GAP) Woreda agriculture desk–extension
Poor soil fertility management	Introduce/develop organic farming practices	EARO/ICRAF – TA on organic coffee farming including use of shade trees Woreda agriculture desk - extension

Input supply

The strategy of the government is to promote organic coffee production hence no fertilizers are used. At the moment farmers are also not interested in using fertilizers and other cash inputs, due to the low coffee price. For the supply of seeds, the extension service maintains seed orchards of the improved (CIP introduced) selections. Five of these varieties are now targeted for the replanting program i.e. (74112, 74110, 7440, 74148 and 74140). The seeds are supplied (at Birr 4/kg) to client farmers (327 farmers in total) who produce bare root seedlings. These are used on their own farms as well as sold to neighbouring farmers at 0.10 to 0.15/seedling. The

client farmers are normally near to a stream and/or other water source to ensure proper water management in the nursery. The on farm seedling production system was initiated with the help of the CIP and is now operational for 3 years.

Besides the farmer seedling production, the extension service itself also raises seedlings in polythene tubes in collaboration with some cooperatives. These seedlings are sold to the farmers (in particular in drier areas) for 0.15/seedling. The share of seedlings being raised by the extension services is rapidly declining. For the current year 303,000 seedlings are expected to be raised through the extension service and 1.9 million through the farmer system.

It was noted that besides the improved (introduced) varieties, the extension services also maintain some conservation sites with indigenous land races. One of the sites within the Ferro service cooperative is maintaining 13 locally identified land races in the nursery. In addition the EARO station in Awada also maintains 320 selections of the Sidama land races. Selection and breeding activities on these selections has resulted in the eminent release of 2 CBD resistant varieties from Yirga Cheffe (selection 1377 and 85238).

Areas which need to be addressed	Potential interventions	Responsibilities/tasks
Poor quality seedlings from on farm nursery	Strengthen on farm seedling production system	EARO/ICRAF – study on-farm nurseries (including economic assessment) and provide recommendations for improvement, including TA for appropriate management and capacity building Woreda agriculture desk/farmers – implement
Selections used for replanting	Increase improved use of land race selections – see marketing	EARO - provide improved land race varieties (see production)
Supply of shade trees	Increase on farm supply of multi purpose shade trees	EARO/ICRAF – Provide TA for on farm tree seedling nurseries Woreda agriculture desk/farmers – introduce on farm tree nurseries

Marketing

Marketing of crops is through the cooperative system as well as through private traders. While these cooperatives are multi purpose in nature, they mainly deal with coffee marketing. Finance to purchase coffee from their members is obtained from 3 sources i.e. the Commercial Bank of Ethiopia, the Development Bank and the Sidama Coffee Farmers Cooperative Union (SCFCU). Private traders obtain loans from the commercial banks such as Dashen and Abyssinia Bank.

Eighty five percent of the coffee is washed coffee all of which is sold in the export market; the remaining 15% is sun-dried coffee which is partly consumed locally and partly sold to the Addis central market. The share of the cooperatives in the sale of washed coffee varies by cooperative. In 2003/4 about 1 million kg of clean coffee was sold through the cooperatives and 1.85 million through private traders. All the

cooperative sell their coffee through the SCFCU, which was established in July 2001.

Recently, cooperatives have started registering themselves for organic certification, Three of the cooperatives are now officially registered (Ferro, Shewe and Hunkute) and another 5 are in the process of registering. The certification entitles the cooperatives to a fixed price which is presently \$ 1.41/lb (FOB/Djibouti).

The price of coffee has varied considerable between years. In the nineties farmers used to receive up to Birr 3.5/kg of red cherries. Two years ago it was 0.7/kg initially and reached Birr 1.25/kg, while in the past year it was purchased at Birr 1.0/kg (some cooperatives paid dividend up to Birr 0.5/kg) and reached Birr 1.60/kg.

Areas which need to be addressed	Potential interventions	Responsibilities/tasks
World market price fluctuations Low prices at the moment	Create contract type farming linkages through certification	Cooperative Department, SCFCU – increase organic, fair trade and area certification of cooperatives and linkages with potential buyers
	Diversify cash income activities	See other commodities
Sidama coffee originality	Promote the original Sidama coffee	SCFCU – promotional activities
Poor credit worthiness of primary cooperatives	Improve efficiency and effectiveness of coffee marketing	Cooperative Department, SCFCU – marketing activities and preparation of business plans
	Increase other economic activities of the cooperatives	Cooperative department, SCFCU – introduce other marketable commodities (haricot beans, others)

Table 3: Haricot beans**Production**

This crop is grown as an intercrop in the garden coffee,(coffee/livestock system) and as a rotational crop in the haricot bean/livestock system. Plot sizes are small and usually less than 0.25 ha. Land preparation is by hoe in the coffee/livestock system and by animal traction in the cereal/livestock system. Women participate in planting, weeding and harvesting.

The variety grown and preferred by farmers is red Wolayta which is mainly for home consumption. No fertilizer is used; neither do the farmers use improved seeds. Yields were reported to vary depending on rainfall and management from 4.2 qt/ha to 18 qt/ha To promote the export of haricot bean, the extension service has started to concentrate on the introduction of the white Awash 1 variety. The extension service has distributed 200 qt of seeds to 860 farmers. No down payment was collected and farmers are expected to repay the extension service in full after the harvest.

Areas which need to be addressed	Potential interventions	Responsibilities/tasks
Poor genetic potential of existing varieties	Select and introduce new better yielding varieties	ARC/EARO – variety selection/testing CIAT – facilitate introduction improved germplasm
Moisture stress due to erratic rainfall (especially in the cereal/livestock system)	Introduce water stress resistant varieties (with export potentials) Provide extension on appropriate <i>in situ</i> water management	See above SARI/CIAT to provide TA on appropriate technologies and capacity building Woreda agriculture desk – extension
Mass movement of soil after rainfall (especially in the cereal/livestock system)	Introduce community watershed management program	ILRI theme 5 to provide TA for design and capacity building Woreda agriculture desk-extension
Poor crop husbandry management	Provide extension on crop husbandry practices	CIAT/SARI – provide TA and capacity building on appropriate practices Woreda agriculture desk-extension
Poor soil fertility	Test use of bio fertilizers Provide recommendations on use of organic/inorganic fertilizers	National Soil Research Laboratory SARI/CIAT to provide TA on use of fertilizers
Oxen power deficiency partly due to trypanosomiasis	Introduce trypanosomiasis control measure, including credit scheme for purchase of drugs Introduce single ox/donkey tillage	ILRI theme 4 provide TA on appropriate technologies – see livestock SMFI/OMFI – to operate credit scheme Woreda agriculture desk – Implement program
Pests (cutworm, stem)	Introduce pest	ARC/CIAT provide TA and

borer)	management and pest resistant varieties	capacity building on pest control Woreda agriculture desk – extension
Input supply		
<p>No fertilizers are presently used for the red Wolayta variety. Fertilizers in general can be supplied through the Input supply desk and/or the cooperatives. Farmers use their own seeds and/or buy from the market. Biofertilisers have been tested in a number of locations in the country by the National Soils Research Center in Addis, which has a (limited) capacity to produce inoculums. The cost of dressing seeds with inoculums is estimated at Birr 80-100/ha.</p> <p>For the new Awash 1 variety, the Ethiopian Seed Company/Woreda input supply desk has contracted 240 farmers in the haricot bean/livestock system to produce seeds. The standard multiplication plot is 0.25 ha, however farmers can have more than one plot. A total of 57 qt of seeds has been distributed together with the recommended fertilizers (DAP). Farmers made a down payment of 25% and contracts were made through the PA administration to buy the seeds from the farmers at a premium of 15% above the market price.</p>		
Areas which need to be addressed	Potential interventions	Responsibilities/tasks
Lack of sufficient improved seed varieties	Organize on-farm seed supply system	AERO/EARO/CIAT– provide TA on formation on farm seed multiplication system Woreda agriculture desk – extension
Supply of bio fertilizers (inoculums)	Supply of inoculums for seed dressing (for research and later on for extension)	National Soils Research Centre – produce inoculums SMFI/OMFI – to provide credit to purchase inoculums (after testing)
Fertilizers supply in adequate	Strengthen fertilizers supply system through cooperatives and private sector	Input supply desk Cooperatives organization desk Private sector
Marketing		
<p>Farmers in the haricot bean/livestock system sell only very small quantities of beans in the local market to private traders (held every 5 days). Prices are reported to be between Birr 100 -200/qt. Women are allowed to sell (even) smaller quantities to cover household expenses. The white varieties are not favored in the local market.</p> <p>The newly introduced Awash 1 variety will be purchased by the Ethiopian Seed Company at the market price Plus 15% premium. The seeds provided through the extension service are also expected to be purchased with the help of the Government.</p>		
Areas which need to be addressed	Potential interventions	Responsibilities/tasks
Linkages with market partners and marketing arrangements	Facilitate linkages of farmers with private exporters and/or Farmers cooperative Union Develop contract farming with private sector	Regional Export Promotion Agency and Regional/Zonal Agriculture Bureau to organize workshops/meetings with private sector and facilitate contract farming

	through cooperatives	
Product quality: problems occur as a result of threshing practices and early harvesting	Introduce proper threshing and harvesting practices	Woreda agriculture desk – extension on appropriate harvesting and threshing
Storage problems- weevils	Assess and introduce improved storage technologies	SARI/EARO – technology assessment Woreda agriculture desk/Coop – extension
Insufficient capacity of FU and cooperatives to enter haricot business	Strengthen the capacity of the FU and cooperatives to purchase and sell beans, including collection and storage facilities	Coop. Dept to facilitate capacity building and business planning Commercial Banks to provide loans to purchase crop and finance required infrastructure.

Table 4: Other Potential Crop Commodities for the coffee/livestock system		
Production (fruits – avocado, banana, mango, papaya, pineapple, spices (ginger and cardamom))		
Avocado is commonly grown in the coffee/livestock farming system; however the number of trees per farm or PA is low. The trees are easy to establish and no major production problems are experienced. Greek Orthodox missionaries introduced many of the potentially important fruit trees and spices in Shefina PA. Pineapple (smooth Cayenne) has been tested at the EARO station at Awada and is well adapted. Earlier attempts to introduce pineapples failed due to lack of knowledge.		
Areas which need to be addressed	Potential interventions	Responsibilities/tasks
Poor potential of existing varieties	Introduce and test new varieties	EARO/ICRAF supply of improved germ plasm (see input supply) Woreda agriculture desk – extension
Competition between fruit trees and other components (in particular coffee) – existing varieties too tall	Introduce dwarf varieties Introduce pruning management practices	EARO/ICRAF – supply of germ plasm and provide TA on management practices Woreda agriculture desk - extension
Production and economic potentials of old new varieties unknown.	On –farm introduction/evaluation of new varieties	EARO/ARC/ICRAF – on farm research, including economic assessment existing varieties
Management of old and new varieties inadequate resulting in losses and poor yields (rotting, flower/fruit drop)	Introduce appropriate management practices	EARO/ICRAF – TA on management practices and capacity building Woreda agriculture desk – extension
Competition between fruit trees and other components (in particular coffee)	Introduce pruning management practices	EARO/ICRAF – provide TA on management practices
Input supply		
The Bureau of Agriculture maintains some nurseries from where it distributes tree seedlings for farmers. For example, during 2003/04 there were over 248,000 seedlings distributed to farmers.		
Areas which need to be addressed	Potential interventions	Responsibilities/tasks
Supply of high quality planting materials (after market assessment and on farm evaluation)	On-farm program of multiplication of planting material (spices and fruits)	EARO/ICRAF – TA for establishing cooperative/on farm nurseries system and capacity building including grafting
Marketing		
Avocadoes are sold in the local market and to private traders, who sell them in Wondo Genet. Market potentials of all other products need to be explored. A considerable market for pineapple exists in the neighbouring Aleta Wondo Woreda (for export to Germany). The spice market is still very small and only local.		
Areas which need to be addressed	Potential interventions	Responsibilities/tasks
Market potentials for all fruits and spices	Review the existing and potential market for the commodities (fruits, spices)	Regional and zonal agricultural and marketing agencies and cooperatives to conduct studies EARO/ICRAF to provide TA
Linkage with market partners limited resulting in poor negotiating power	Facilitate linkage between producers, cooperatives and private sector	Regional and zonal agricultural and marketing agencies and cooperatives to organize workshops with private sector
Poor Marketing system	Form horticultural market groups and develop contract farming.	Woreda agriculture desk, Cooperative Department to facilitate group formation EARO/ICRAF to provide TA

Table 5: Other Potential Crop Commodities in the haricot bean/livestock system		
Production (onion, teff and soya bean)		
In the past year, the Government has launched a program to introduce small scale pond irrigation schemes for horticultural production such as onions. No field experience exists. The involvement of women in this production system is potentially high. Teff is partly grown for commercial reasons. No detailed assessment is made of this crop since the IPMS project will have a focused teff program in the Ada PLS. At a later stage farmers from Dale can be linked to the Ada PLS to benefit from lessons learned. Soya bean is a new crop and the analysis for this commodity is similar to the haricot beans (see table 2). This section presents analysis for onion.		
Areas which need to be addressed	Potential interventions	Responsibilities/tasks
Lack of varieties	On –farm introduction/evaluation of varieties	EARO/Melkassa- provide varieties ARC/Woreda agriculture desk – on farm research
Lack of knowledge on managing irrigated onions and other horticultural crops	Increase knowledge on management of irrigated crops	ARC/EARO to provide TA and capacity building on crop mngt Woreda agricultural desk - extension
Economic potential of onions under irrigated conditions is still unknown	Small scale pond irrigation schemes for horticultural production.	Assessment of economic viability of small scale irrigation.
Input supply		
No organized supply system exists for the supply of onion seeds/planting materials. For the proper functioning of the irrigated system, farmers should also have access to proper tools including water cans. These inputs are presently supplied through the input supply office and private shops. The (external) inputs (cement, PVC pipes and plastic sheets) for the small pond irrigation scheme in the haricot bean/livestock system are provided by government.		
Areas which need to be addressed	Potential interventions	Responsibilities/tasks
Supply of planting materials (after market assessment and on farm evaluation)	Introduce on-farm program of multiplication of planting material	Woreda agriculture desk, cooperatives – organize on-farm nursery program
Supply of farm implements for irrigated agriculture	Strengthen the system for supply of farm implements through cooperatives and private sector	SMFI/OMFI to provide loans to private sector and/or cooperatives.
Marketing		
The market potential for horticultural crops from the small scale irrigation ponds in the haricot bean/livestock system are also to be explored		
Areas which need to be addressed	Potential interventions	Responsibilities/tasks
Market potentials for commodities	Review the existing and potential market for the commodities (onions, soya bean)	Regional and zonal agricultural and marketing agencies and cooperatives to conduct studies
Linkage with market partners limited resulting in poor prices	Facilitate linkage between producers, private sector	Regional and zonal agricultural and marketing agencies to organize workshops with private sector

Poor Marketing system	Form horticultural market groups and develop contract farming.	Woreda agriculture desk, Cooperative Department to facilitate group formation EARO/ICRAF to provide TA
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Table 6: Dairy**Production**

The cattle population in the Woreda is estimated at 225,698, of which about 82,666 are local cows and 1584 are crossbred dairy animals. Dairy production is mainly based on local Zebu cows in rural areas and on crossbred (Zebu x Friesian) cows around urban areas. (A good quality high grade dairy cow currently fetches about 3000-4000 Birr in urban areas and a crossbred cow (50%) fetches between 1200-2000 Birr in rural areas) Ownership of cows per household in lowland (Kolla) areas ranges from 10-20 cows; mid-altitude (Woinadega) is 1-6 cows and in the highland (Dega) areas is 1-3 cows and in peri-urban and urban areas is 2-3 cows.

About 80% of the dairy cows are found in urban and peri-urban areas (coffee/livestock system). Emphasis in this system is on milk production. Between 1987 and 1995 the Smallholder Dairy Development (SDD) Project of the Ministry of Agriculture supported by FINNIDA was implementing a dairy development program in Awassa Zuria, Shebedino and Dale Woredas. A number of farmers benefited from the project through purchase of crossbred dairy animals, forage development, artificial insemination and bull station services, animal health services, milk marketing through formation of milk units with some milk processing facilities, training and other related activities. Besides the production of milk, manure production for nutrient cycling is important for the coffee/livestock based production system. Animals are mainly tethered around the homestead and cut and carry feeding system is practiced.

In the lowland areas (haricot bean/livestock system), consumption of goat milk is a common practice; dairy animals are mainly kept for utter production. Animals are commonly grazed and stall fed in the evenings.

Areas which need to be addressed	Potential Interventions	Responsibility/task
Poor genetic potential of local breeds	Improve genetic potential breeds Also see input supply	EARO/MoA – provide improved genetic resources ILRI – facilitate supply of improved germplasm (biotechnology methods??)
Inadequate knowledge on dairy management	Increase knowledge on dairy management (production, housing, milk handling, processing)	EARO/ILRI – provide knowledge and capacity building Woreda agricultural office - extension
Dry season fodder shortages	Introduce (protein rich) fodder technologies	EARO/ILRI – provide germ plasm and build capacity Woreda agricultural office - extension
Waste disposal system for manure in urban/peri-urban systems (coffee/livestock system)	Training on waste handling and management	EARO/ILRI – provide TA and capacity building Woreda agriculture desk - extension
Trypanosomosis in rural lowland areas and other killer disease such as pasurellosis, blackleg.	Introduce effective vaccination and trypanosomosis control program	Theme 4 of ILRI – provide TA and capacity building Woreda agriculture desk – implement program

	Also see input supply	
Input supply		
<p>To improve the genetic make up of the cows the government provides AI services (started in 1979 and 4 AI technicians are presently employed), and supply of improved genotypes through the Woreda input desk. Government also assisted in the establishment of private bull stations (4)</p> <p>In the Strategic Plan Management (SPM) it is planned to have 36 crossbred 60 Zebu heifers, 12 improved bulls.</p> <p>There is no feed supply system.</p> <p>Animal health delivery services and supply of drugs is organized by the government.</p> <p>Supply of handling and processing equipment for milk processing is supplied through special projects</p>		
Areas which need to be addressed	Potential areas of intervention	Responsibility/task
Inadequate and sustainable supply of improved local and exotic genotypes (high price of improved breeds – eg. Heifer – 3-4000 Birr);	<p>Increase supply of improved local and exotic genotypes</p> <p>Introduce community based animal genetic improvement program</p>	<p>EARO/ILRI - provide knowledge and capacity building</p> <p>Woreda agriculture desk - extension,</p>
Lack of AI/bull stations in potential lowland areas (AI service limited to roadside and urban areas)	<p>Study dairy potential areas (see marketing) and provide community based service</p> <p>Provide loans for bull station owners</p>	<p>EARO/ILRI - provide TA and capacity building</p> <p>SMFI/OMFI to provide loans</p> <p>Woreda agriculture desk – extension</p>
Shortage of feeds	Develop feed resources (feed market, seed/seedling production) and appropriate feeding systems – coops	<p>EARO/IILRI - provide knowledge</p> <p>Woreda agriculture desk - extension</p>
Inadequate animal health services	<p>Consider paravets to provide animal health services and supply drugs</p> <p>Provide loans for private health technicians and drugs vendors</p>	<p>EARO/ILRI – provide capacity building</p> <p>SMFI/OMFI to provide loans for private suppliers</p> <p>Woreda agriculture desk,</p>
Lack of modern handling, processing equipment for dairy products (including butter churns)	<p>Improve handling, processing, storage and transportation facilities through cooperatives</p> <p>Provide loans for supplying butter churns (for haricot bean/livestock system)</p>	<p>EARO/IILRI - provide TA</p> <p>Commercial banks to provide loans</p> <p>Cooperatives – to implement</p>
Credit		
There is limited credit facility mainly for the purchase of dairy cows through micro finance and cooperatives.		
Areas which need to be addressed	Potential areas of intervention	Responsibility/task

Extension service is not linked with credit institutions	Study credit system and options Strengthen cooperatives Access existing coop/union resources for dairy development; strengthen cooperatives Increase access to credits	Agriculture desk, Woreda/Zonal Administration, Cooperatives desk
25 % down payment for other livestock is too high for dairy	Increase role of micro finance institution (on down payment required)	Micro finance institutions
Marketing		
<p>Since the termination of Finish AID to the SDD project, the milk units have been discontinued. However, milk production in urban and peri-urban areas has continued to be a major activity. Currently, some of the previous members are organizing themselves to re-establish the milk unit. There is a small dairy producers cooperative in Yirgalem town established by seven private dairy farmers. They have about 12 cows and 8 young heifers and three milk shops in town. The major products sold are fluid milk and yoghurt. In Yirgalem town the price of milk is 2-2:50 Birr/liter; butter – 21-28 Birr/kg and ayib - 8-10 Birr/kg. Milk is sold directly to consumers in Yirgalem town, while butter is the main marketable product in rural markets.</p>		
Areas which need to be addressed	Potential areas of intervention	Responsibility/task
Insufficient information on supply and demand for milk and the economics of small scale commercial dairy processing and marketing. (coffee/livestock)	Conduct feasibility study for small scale dairy processing and marketing system including potential milkshed and market opportunities in Awassa, Dale, and Dilla (including the butter system)	ILRI theme 3 to provide TA for study
Poor demand for milk – partly due to low purchasing power of consumers and lack of marketing (coffee/livestock)	Conduct promotional work (dairy show, milk days, posters, leaflets, radio) – to enhance demand (target children, students, women)	Cooperative Woreda agricultural desk
No small scale commercial dairy collection, processing and marketing system exist, resulting in price fluctuations and high transaction cost. (coffee/livestock system)	Develop small scale commercial dairy collection, processing and marketing system (subject to findings feasibility system) including strengthen dairy marketing cooperative, reorganizing farmers and bring milk unit close to town, develop smallholder market-oriented production system thru strengthening rural-urban linkage, increase collection, processing and storage capacity	ILRI – to provide TA Cooperative Desk Commercial Bank to provide loans
High post harvest loss, lack of processing equipment or milk units (haricot bean/livestock system)	Avail ILRI butter churn to rural farmers and provide training. Also see input supply	ILRI to provide knowledge/capacity building Woreda agricultural office - extension
Lack of infrastructure such	Develop milk and butter marketing	Woreda agricultural

as roads, distance from main milk markets (haricot bean/livestock)	system in lowland areas Establish milk collection units and strengthen rural-urban linkage	office Cooperatives
Absence of quality control and standards, informal market	Introduce quality control system Provide training on dairy production, milk handling, processing and marketing – focus on women	EARO/ILRI to provide TA and capacity building

Table 7: Meat

Production

Production of fattened cattle, goat and sheep has great potential in the Woreda, and there is a plan to enhance meat production in the Woreda. The Sidama Development Program supported goat breeding and fattening scheme in 1999 for women in the lowland areas. Initially 15 women received 30 female goats and in 2000 E.C. additional 53 women received 106 goats. These women managed to earn money through sales of 6 to 8 goats per year. Subsequently, the agriculture desk followed this procedure and in 2003, 146 women received 292 goats and currently, 169 women are involved in goat breeding/fattening with 800 goats. Currently, there is a plan to involve 610 households in fattening/breeding package. The package involves 4 female and one male goat/sheep for breeding or 5 male goats for fattening per household. The cattle fattening package is two oxen per household per cycle. These farmers are distributed in 22 PAs and about 63 farmers will be involved per PA. At the moment, 45 households are engaged in oxen fattening, 83 in goat fattening, and 37 in sheep fattening. The 25% down payment for goat, sheep and ox fattening is Birr 500, 600 and 720, respectively. Farmers were given an 18 days training.

Areas which need to be addressed	Potential areas of intervention	Responsibility/task
Poor animal genetic resources for fattening – local breeds are small in size	Examine potential introduction and use of Boran cattle breed, involve private traders system for the supply of animals, consider terminal crossbreeding for larger animal production	Woreda agriculture desk, Dehub University
Traditional production system with limited market orientation, weak fattening culture (poor quality)	Train on fattening techniques	EARO/ILRI to provide knowledge/capacity building support Woreda agriculture desk-extension
Feed, water shortage, shrinkage of grazing land – problem is more serious in the lowlands	Develop and strengthen different strategies of feed resources development, feed conservation systems	EARO/ILRI/ICRAF to provide germ plasm and capacity building support Woreda agriculture desk - extension
Poor feeding system and technology	Training including women	EARO/ILRI to provide knowledge/capacity building support Woreda agriculture desk - extension

Diseases such as pasturellosis, trypanosomosis, ectoparasites, (shortage of drugs, poor vet service)	Develop trypanosomosis program Organise effective input and veterinary service delivery system (see input supply)	Woreda agriculture desk, Theme 4 of ILRI ICIPE, ESTC plan (SIT)
Input supply		
See production description and the input supply system for dairy		
Areas which need to be addressed	Potential areas of intervention	Responsibility/task
Shortage of supply of animal genetic resource	Examine and establish mechanisms for sustainable animal genetic resource supply (also see dairy)	EARO/ILRI to provide knowledge Woreda agriculture desk,
Shortage of feed supply	Establish service/producer coop to supply concentrate feeds, supply of seeds and germplasm, develop community based seed /seedling production system	EARO/ILRI/ICRAF to provide knowledge and capacity building Woreda agriculture desk - extension
Shortage of drugs, poor quality contraband drugs, limited animal health services	Develop effective animal health services, train paravets, improve supply of drugs through cooperatives Provide loan funds	EARO/ILRI to provide knowledge/capacity building support Banks/micro finance to provide loans for drug traders Woreda agriculture desk Private sector
Credit		
Limited credit facility for the fattening scheme is availed through cooperative desk. Farmers are expected to complete 2-3 cycles of fattening per year and there will be a saving and credit system. Repayment schedule is at the end of the year. OMO/Sidama micro finance institutions provide limited loans to farmers for animal fattening. OMO micro-finance institution provides some credit for urban women dairy farmers.		
Areas which need to be addressed	Potential areas of intervention	Responsibility/task
Lack of adequate financing system	There were some unsuccessful experiences in repayment in the past due to lack of linkage of financing institutions with the agriculture desk. Engage micro finance institutions to provide credit for meat production	Agriculture desk, microfinance institutions, Woreda Administration
Marketing		
Marketing is done on individual basis in local rural markets.		
Areas which need to be addressed	Potential areas of intervention	Responsibility/task

Limited market information, resulting in low prices	Develop market information through Yirgalem Radio station and share with farmers	ILRI to provide TA Woreda agriculture Desk, Woreda/Zonal Administration
Limited linkages with traders	Increase linkages with local and export market system	ILRI to provide TA Agriculture desk
Poor quality of animals for export market	See production	Agriculture desk

Table 8: Skins and hides		
Production		
Hides and skins are produced from the animals raised for dairy and meat production (see description of those production systems).		
<i>Areas which need to be addressed</i>	<i>Potential areas of intervention</i>	<i>Responsibility/task</i>
Poor quality skins and hides as a result of: traditional treatment of sick animals, traditional branding of animals, ticks and other external parasites	Improve farmer management of skin and hides through appropriate management of animals	EARO/ILRI to provide knowledge/capacity building Woreda agriculture office – to provide extension
Poor slaughter practice, handling, processing and storage by rural abattoir	Improve slaughterhouse practices	EARO/ILRI –to provide knowledge/capacity building Agriculture desk
Poor slaughter houses and slabs including facilities	Improve/increase rural abattoirs and slaughter slabs in consultation with service coop and private butchers	City administration, Agriculture desk Financing institutions to provide loans
Use of skins and hides for household use	Encourage sale of hides and skins through awareness	Agriculture desk
Input supply		
Very limited input supply system. Salt supplied by traders. Slaughter equipments and facilities not sufficient; Supply of DDT banned. Supply of alternative chemicals to minimize post harvest storage losses is none existent. There is shortage of acaricides and spray equipments.		
<i>Areas which need to be addressed</i>	<i>Potential areas of intervention</i>	<i>Responsibility/task</i>
Salt supply is not sufficient	Involve service cooperatives in hides and skins business	Cooperative desk, Agriculture desk, private traders Finance to supply loans for input supply traders
Slaughter equipments like knives, mobile frames and other facilities not sufficient	Increase supply of equipment through service coop and private shops	
Supply of DDT and/or other chemicals to minimize post harvest storage is not available	Consultation with appropriate authorities, involvement of cooperatives and the private sector	
Shortage of acaricides against ticks, manpower and spray equipments	Train paravets from the community (see dairy and meat production)	
Credit		
<i>Areas which need to be addressed</i>	<i>Potential areas of intervention</i>	<i>Responsibility/task</i>

No micro finance institution supporting such activities in villages, and for cooperatives and traders	Create linkage between micro finance institutions, traders and service coop	Agriculture desk, Woreda Administration
Marketing		
Marketing of hides and skins is mainly organized through private traders. In 2004, 4,500; hides, 4,754 sheep skin, and 2,600 goat skin were marketed Hides are mainly from Yirgalem slaughter house which has a store, while the skin are mainly from private traders who have their own small stores. One cooperative has just started getting involved in hides and skins marketing. Three more cooperatives are planned to start involvement in hides and skins marketing in 2005. Despite the Large resource of production of skins and hides in the Woreda, only 37% of the marketable skins and hides were officially marketed in 2003. The SPM envisions increasing these to 70% in three years. Some cooperatives have just started collection and marketing activities		
Areas which need to be addressed	Potential areas of intervention	Responsibility/task
Low prices as a result of limited market information, distortion of market price information and confusion of farmers by brokers and intermediaries, lack of negotiating power	Develop market information system, explore possible use of Yiralem Radio Station Including traders and brokers in the development plan	Woreda Administration, Agriculture Desk
Inability to collect all skins and hides produced – only one trader in Yirgalem town Illegal collection (only 37% passes through the legal system). Transport problem. Absence of locally collecting bodies; lack of price negotiation power	Involve cooperative in rural areas with collection of hides and skins and link with private trader. Explore use of students/schools for collection, education/ information Educate thru posters, leaflets and market information around clinics, FTCs, markets Performance based Incentive and reward system to coops	Agriculture desk
Poor quality skins	Training, exchange programs, visits, linkage with tanneries, exporters, tanneries, etc	Agriculture desk
Lack of credit facilities for trade	Increase access to credit	Cooperative desk, agriculture desk Banks to provide loans
Poor quality of skins and hides (also see production)	Introduce quality based pricing system. Introduce quality based pricing system in consultation with traders	TA for capacity building on skin and hide quality Agriculture desk - extension

Table 9: Poultry production		
Production (Eggs/Meat)		
In rural areas, poultry (eggs/meat) are produced by scavenging backyard production with local chicken. No extension activity on local chicken; some extension activities (pilot package) on genetic improvement program for egg production have just started with 25, 50, 100 chicken - comprehensive package (housing, feeding, health management) - 26 Birr/chicken; 25% down payment (no credit for those who request for less than 25 chicken); Regular extension package RIR – one male and 1 female; 10 Birr/chicken; no credit facility; Limited credit facilities (high down payment) for package only; Traditional network of marketing from rural to urban areas.		
Areas which need to be addressed	Potential areas of intervention	Responsibility/task
Traditional low input system	Provide appropriate technologies, especially to women and children	EARO/ILRI to provide knowledge and capacity building Agriculture desk - extension
Attack by predators	Proper housing system	
Poor growth and egg laying performance	Supply improved genotypes	
High chicken mortality due to diseases	Vaccination, improved animal health services	
High post harvest losses; storage problem	Marketing cooperatives	
Poor genetic potential	Introduce of appropriate technologies for genetic improvement– (chick rearing; hay box tech); Lack of knowledge	
Input supply		
Limited input supply of improved genotypes which includes vaccination only. There is no drug and feed supply system		
Areas which need to be addressed	Potential areas of intervention	Responsibility/task
Poultry package with improved genotypes just started	Enhance and expand activities	Agriculture desk
Shortage of pullets and day old chicks	Increase supply from Awassa and private poultry multiplication centers	
Lack of vaccines, drugs	Involvement of cooperatives and private sector	Agriculture desk, cooperatives and private sector Banks to provide loans to purchase Agriculture desk
Shortage of appropriate feeds	Involvement of cooperatives and private sector	
Credit		
Credit system just started along with package. This involves 25% down payment at the start and repayment at the end of the year.		
Areas which need to be addressed	Potential areas of intervention	Responsibility/ task

There has been no credit facility – Recently, credit available for package	Improve and expand credit facility outside the package (involve micro finance)	Agriculture desk. Micro Finance
Marketing		
Marketing is done on individual basis in rural markets.		
<i>Areas which need to be addressed</i>	<i>Potential areas of intervention</i>	<i>Responsibility /task</i>
Low prices	Organize marketing cooperatives and linkages with private traders	Agriculture desk and Cooperative desk
Lack of markets		
Eggs collected from small rural markets and sold in bigger towns		
Poor quality of eggs due to storage problem		

5 Outline of program of work Dale PLS

5.1 Priority commodities and natural resource management technologies

During the project's first year, attention will be focused on innovative technology practices and institutional innovations for the following priority commodities and their supporting NRM technologies.

Coffee/livestock farming system

Crops: Coffee, Fruit trees, Spices

Livestock: Cattle (milk, hides), poultry

NRM technologies: organic coffee production with mulch and shade

The possibilities of bamboo commercialisation were discussed. At present bamboo is not marketed, however some use is made of it in the neighbouring Woreda. There is a potential for selling bamboo as poles, stakes for beans and furniture making. A market study is required before going into a commercialisation strategy

Haricot bean/livestock system

Crops: Haricot beans, Irrigated vegetables

Livestock: Cattle (butter, hides), Goat (meat, skins), Poultry

NRM technologies: trypanosomes control, *in situ* water harvesting/conservation, pond irrigation system

Based on the knowledge captured and the lessons learned during the initial implementation of the innovation program some of the priorities commodities may be dropped, while others may be added.

5.2 PLS knowledge management – general (RBM code 100 series)

To improve the capturing and sharing of knowledge on priority commodities and the supporting NRM technologies in the PLS, the state of knowledge and knowledge requirements will have to be assessed on a continuous base during the project life. (The initial PRA and the subsequent assessments will form an integral part of this process).

The knowledge will be synthesized and assembled at the federal level in a Resource Information Centre using electronic data base formats.

To share this knowledge with institutions and communities, various processes and mechanisms will be used including the distribution of appropriate printed materials (manuals, training materials, posters, and leaflets in the local language), radio programs, local exhibitions etc.

To link the PLS institutions with the Resource Information Centre, electronic linkages with the Woreda Agricultural Desk will be established. This effort will have to be integrated and synchronized with other activities in this field i.e. Woreda Net, School Net and Agri Net. Dale was one of the test woredas for this project and received 3 computers, 1 printer and 3 staff members were trained, however the system is not

operational now. Similarly, all equipments for Woreda Net are also available and some are even installed but still is not operational. The there is one staff trained to operate the system, but not to setup, configure and maintain the system. There is a high School with an operational school-Net. It is receiving lessons from Educational Media Agency (EMA) in Addis Ababa. About additional 28 class rooms have got plasma TVs and are connected to the network but there are problems in transmitting to all class rooms at a time. In addition, there are 10 Dell Pentium 4 Computers for Internet browsing and training purposes but are not configured and connected to the system.

Simultaneously innovative ways of creating a culture of knowledge capturing and horizontal knowledge sharing between the actors in the PLS and between the actors at PLS and the regional and federal level will have to be developed – see section 3 on capacity building.

Table 10. Project support for PLS knowledge management system

Activities	Target	Responsible
(100) Continuous assessment of current state of knowledge requirements based on field work (see 5.4) and meetings	Woreda institutions	Woreda institutions involved in extension, input supply, micro finance, cooperatives, marketing under the supervision of project staff
(100) Collection and synthesis of data for PLS (GIS) database	Woreda	Project staff with Woreda Agricultural office
(100) Preparation of extension materials and methods and training materials *	Woreda institutions and farmers	Research and development partners with the help of project funding.
(100) Purchase and installation of computers and hard ware	Woreda Agricultural office	Project staff
(100) Training of staff in electronic knowledge management	Staff member agricultural office.	Project staff

* For details see commodity program described in section 5.4. – indicated with code 100

5.3 PLS public institutional capacity building (RBM code 200 series)

To introduce the project, and to train public institutional staff in innovative technology transfer methods, inter-institutional collaboration and cross cutting themes like gender and environmental assessment, various trainings will be conducted for Woreda staff. (Materials for such training will be prepared by the project with the help of consultants and contributions from the project partners). To stimulate the integration with private institution staff, some of the staff of the private institutions will also be involved in this training. The training will be continuous during the project life

and the effectiveness of the training will be assessed regularly. Lessons learned will become an integral part of follow up training events.

Table 11 Potential Woreda staff to be included in the innovative methods training

Agricultural desk	
-Crop coordination	8
-NRM	5
-Livestock	6
-Coffee production and processing	8
-Cooperatives	10
-Input supply	5
Micro finance institutions	5
Women affairs office	1
HIV/AIDS office	1

The FTC staff (involved in the program) will be trained by Woreda extension specialist, and some other specialists (gender, natural resource management), and they will in turn use these concepts during their daily work with the farmers and communities (see section 5.4).

Use of these innovative methods by FTC staff will be monitored and evaluated by the project staff and form the basis for adjustment in future trainings (see before).

Besides the building of the capacity of the Woreda and FTC staff in the use of innovative methods and institutional arrangements, technical training on the priority commodities, including new production methods/techniques, farmer/group/cooperative based input supply and marketing systems will be provided (Materials for such training will be prepared by the project with the help of consultants and contributions from the project partners). Details for such training are included in the PLS sustainable livelihood development activities described in section 5.4.

An integral part of the capacity building activities at the Woreda level is the development of the FTCs. In the initial phase the project will support these FTCs with printed materials (see knowledge management) and demonstration materials in support of the priority commodities and supporting NRM technologies (see section 5.4 for details).

While many capacity building activities have been undertaken for public staff by numerous projects operating in Ethiopia, the actual use of the increased capacity by the staff in their daily work is often minimal because of a host of other bottlenecks and a lack of reward for those staff which have made progress despite the presence of these bottlenecks.

The project will introduce various other capacity building initiatives at the PLS level to alleviate some bottlenecks in order to facilitate the introduction of technologies and institutional innovations. This will include the supply of credit funds and financial and technical support for market studies and linkages for priority commodities and operational cost of experts to supervise and guide the DA staff at FTC level. These activities are integrated in the PLS sustainable livelihood activities (see section 5.4).

The project will furthermore set aside some funds for rewarding experts and FTC staff which have been made good progress in technology and institutional innovations. One potential reward may be in the form of visits to places of interest (this will be introduced in the second project year).

Finally, an integral part of the PLS capacity building support is to create a learning system between the region and the PLS and to create an inter-institutional learning system at the Woreda and FTC level. To facilitate this arrangements the project has established Regional and Woreda level Advisory and Learning Committees (RALCs and WALCs). A budget will be made available to use/develop various learning mechanisms including field visits and small workshops. An integral part of this learning will be the sharing of knowledge between the regions and institutions concerned.

Table 12 Project support for PLS general* capacity building support

Activities	Target	Responsible
(200) Training and follow up in innovative methods	Woreda staff and FTC staff	Project staff and consultants
(200) Training and follow up in gender	Woreda staff and FTC staff	Project staff and consultants
(200) Training and follow up in environmental assessment	Woreda NRM staff and FTC staff	Project staff and consultants
(200) Development of a reward system for institutional staff	Experts and FTC staff	Project staff and WALC and RALC
(200) RALC and WALC learning activities including field visits and workshops	RALC and WALC	Project staff

* Commodity and or technology specific support to Woreda staff institutions and FTCs is described in section 5.4.- indicated with code 200.

5.4 PLS sustainable livelihood development (RBM code series 300)

The project will concentrate its efforts on introducing innovative technology (practices) and institutional innovations with farmers and communities near Farmer Training Centers (FTC) which have a potential for the identified priority commodities and supporting NRM technologies (see Tables 13a,b,c)

Table 13a FTCs with potential for priority commodities and NRM technologies in the coffee/livestock system*

FTC	Coffee/NRM	Fruits/NRM	Spices	Milk/hides	Poultry
Hunkute	X	X	X		
Bokasso	X	X			
Gajaba	X	X	X	X	
Boa Badagalo	X	X	X		
Hariilo	X	X			
Godiya	X	X			
Wicha	X	X			
Bera Chale	X	X			
Warra	X	X		X	
Dagiya	X	X		X	
Wachio	X	X			X
Hida Kaliite	X	X		X	X
Dehub Kege	X	X			
Dehub mesenkale	X	X		X	
Gane	X	X		X	X
Halakana	X	X	X	X	X

*As identified by Woreda staff

Table 13b FTCs with potential for priority commodities in haricot bean/livestock system*

FTC	Haricot	Irrigated vegetables	Butter	Goat (meat and skin)	Poultry
Tula Gorbe	X	X	X		
Sagano	X	X	X		
Sale Kebado	X	X	X		
Arada Gale	X	X	X	X	X
Aleta Sodo	X	X	X		X
Chanco	X	(diversion)	X	X	

* As identified by Woreda staff

Table 13c FTCs with potential for NRM technologies in haricot bean/livestock system*

FTC	Trypanosomes	Irrigation	Soil and water management
Tula Gorbe	X	X	X
Sagano	X	X	X
Sale Kebado	X	X	X
Arada Gale	X	X	X
Aleta Sodo	X	X	X

Chanco	X		X
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*As identified by Woreda staff

An initial set of potential interventions were determined during the Woreda planning workshop (see chapter 4) and an initial set of activities was designed with regional and Woreda representatives and partner institutions in the national planning workshop. At the start of the implementation of the project communities will be consulted about the identified priority commodities by FTC as well as the proposed activities.

The following sections deal with activities on the priority commodities which are envisaged to be accomplished within the first year of the project's life.

5.4.1 Coffee (coffee/livestock system)

Marketing

To increase the income from coffee marketing, a strategy of improving coffee quality will be pursued together with a strategy for increasing the share of "true" Sidama coffee (see chapter 4).

A study of the existing coffee quality at the farm and pulper level will be conducted to design innovations and a capacity building program for Woreda and FTC staff and staff involved in the processing of coffee (cooperatives and private).

Based on the results of the study a training program will be designed which include Good Agricultural Practices (GAP), including (post) harvest handling at the farm level.

At the pulper level (private as well as cooperative) level, capacity building will focus on improvement of processing and storage of the coffee. Since emphasis will be put on the reintroduction of Sidama varieties (also see input supply) attention will also have to be paid on methods for identifying and separating Sidama coffee.

Table 14 Project support for coffee marketing

Activity	Target	Responsibility
(400) Study on coffee quality at farm and pulper level, including the identification of Sidama varieties.	Private and cooperative pulpers in the coffee system	Project staff/students and CTA expert in collaboration with Woreda coffee quality experts
(200) Training in on-farm coffee quality improvement and GAP	Woreda quality control team (1 team leader, 4 experts) plus 16 FTC staff	Awada/Jimma RS staff
(300) Farmer training and program follow up (in FTCs) in quality	Farmers in or near the 16 FTCs in the coffee system	FTC staff, guided by Woreda/project staff and Awada RS staff

improvement and GAP		
(300) Facilitate training of processing staff, in quality improvement, including the identification of Sidama varieties	Processing staff private and cooperative pulpers	Cooperatives and Sidama Farmers Union and CTA
(100/200) Supply of demonstration materials on harvesting and processing of coffee (CTA/EARO)	16 FTCs	CTA and Awada/Jimma RS and project staff.

Input supply/credit

Following the general strategy of privatization of the input supply system, the already established on farm nurseries will be improved. This improvement will be based on an assessment of the existing nursery system, followed by capacity building of Woreda and the FTC staff and farmers. This capacity building will also include the use modern propagation techniques for improved varieties.

Following the proposed marketing strategy, emphasis in the on farm nursery system will be put on the introduction of CDB resistant varieties from Sidama (85238) or Yirga Cheffe (1377).

Table 15 Project support for coffee nursery system

Activity	Target	Responsibility
(400) Study the existing farm nursery system and identify potential areas for improvement	Existing farm coffee nursery (327)	Project staff/students and Woreda nursery expert in collaboration with Awada Research Station staff
(200) Training on improvement nursery management	Woreda nursery expert (1) plus 16 FTC staff	Awada/Jimma RS staff
(200) Training on grafting and propagation	Woreda nursery expert (1) plus 16 FTC staff	Jimma RS staff
(300) Facilitate supply improved coffee seed	Farmer nurseries served by 16 FTC	Awada stations, Woreda input supply.
(300) Farmer training and program follow up (in FTCs) in improved nursery management, and new propagation methods	Farmer nurseries served by 16 FTC	FTC staff guided by Woreda/project staff and Awada RS staff
(300) Provide credit fund for on farm nursery if required (year 2)	Farmer nurseries served by 16 FTCs	Sidama Micro Finance and/or Omo micro Finance with project funds
(200) Supply of	16 FTC	CTA, Jimma Research

demonstration/training materials for input supply – nursery management, including grafting equipment, watering equip.		station and project staff.
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Production

The present emphasis in the coffee production system is on strengthening organic coffee production, the control of wilt disease and addressing the age problem of the existing coffee (see input supply). This emphasis on organic coffee production requires strengthening the existing efforts in the use of organic fertilizers (coffee pulp) and the introduction of shade trees. Local knowledge on species (*Militia* and *Sesbania*) exists but needs to be explored more with farmers, since some negative effects have been observed.

Table 16 Project support for coffee production improvement

Activity	Target	Responsibility
(400) Study on existing agro forestry and manure practices	Farmers around 16 FTCs	Awada RS/ICRAF/students and project staff
(200) Training on diseases control	Woreda coffee production team (1 team leader, 2 experts) plus 16 FTC staff	Awada RS staff
(200) Training in organic coffee production	Woreda coffee production team (1 team leader, 2 experts) plus 16 FTC staff	Awada RS/ICRAF staff
(300) Farmer training and program follow up (in FTCs) on (organic) coffee production	Farmers in or near the 16 FTCs	FTC staff guided by Woreda/project staff, Awada RS and ICRAF staff
(100/200) Supply of demonstration/training materials on diseases, management (EARO, CTA), field transplanting (CTA), pruning and de stumping (CTA, EARO), saw, pruning scissors	16 FTCs	EARO, CTA, ICRAF and project staff

5.4.2 Haricot beans (Haricot bean/livestock system)

Marketing

To improve the marketing of the haricot beans innovations are required in the marketing system, which is now mainly operated by a private trader system linked to individual farmers. Clustering of farmers and linking them with Addis based exporters will be pursued as a general strategy using a community approach developed by research partners.

To enable this innovation, cooperatives need to be strengthened through the provision of funds to purchase beans; construction of storage facilities and training of cooperative staff in bean purchasing and storage. The training will be conducted/financed by the project.

Table 17. Project support for haricot bean marketing

Activity	Target	Responsibility
(400) Study of the supply and demand and market mechanisms with aim of developing innovative market strategy	Farmers, cooperatives and traders	CIAT/AHI/Melkassa and project staff
(200) Training in community based marketing system (using ERI method)	Cooperative promotion desk staff (10) and staff 6 FTC staff	CIAT/AHI/Melkassa and project staff
(300) Farmer and cooperative staff training and program follow up (in FTCs) in community based market system	Farmers and cooperatives (3) around the 6 FTCs	FTC staff, guided by Woreda/project staff and CIAT/AHI/Melkassa RS staff
(300) Training of cooperative staff in purchasing and storage of beans (year 2)	Woreda cooperative desk staff and staff from 3 cooperatives in the haricot bean/livestock system	CIAT/ SARI and project staff
(300) Facilitate the provision of trade funds and storage facilities through government programs (year 2)	Three cooperatives	Woreda cooperative staff and project staff.

Input supply/credit

To increase the supply of seeds for haricot bean varieties required by the market, an innovative farmer based seed supply system needs to be developed. At present the seed supply system is organized through the Input Supply Desk, which acts as an intermediary between the farmers and the Ethiopian Seed Enterprise. The development of a new innovative system will be based on an analysis of the

performance of the seed supply system and methodologies developed by research partners. The latter involves the linkage of seed producers with a seed distribution entity (like a cooperative).

Table 18 Project support for haricot bean input supply system

Activity	Target	Responsibility
(400) Study of existing farm seed supply system	257 farmers presently producing the Awash 1 variety	CIAT/AHI/Melkassa/students /Project staff and input supply desk.
(200) Training in organizing farmer/cooperative seed production system	Woreda bean expert (2) and input supply desk experts (3) and cooperative input office (3) and 6 FTC staff	CIAT/AHI/Melkassa RS and project staff
(300) Farmer and cooperative staff training and program follow up (in FTCs) in establishing farm/cooperative seed production system.	Interested farmers around the 6 FTCs and staff of 3 cooperatives	FTC staff, guided by Woreda, CIAT/AHI/Melkassa RS and project staff
(300) Facilitate supply of improved seed material	Farmers in and around 6 FTCs	CIAT/Project staff and input supply desk
(300) Facilitate supply of inoculum for testing program	Interested farmers around 6 FTC	National Soils Laboratory with project funds
(300) Provide credit fund for on farm seed production if required (probably year 2)	Cooperatives	Sidama Micro Finance and/or Omo micro Finance with project funds
(100/200) Supply training/demonstration material on farm seed production – CIAT training manuals, posters, leaflets	6 FTCs	CIAT/AHI/Melkassa

Production and natural resource management

The most important haricot bean production problem to be addressed are pest and diseases and soil and water management, in particular moisture stress. Various innovative management practices recommended by the research community, including the use of special ploughs, will be tested.

The use of bio fertilizers (inoculums) was mentioned; however the benefits have not been clearly demonstrated. It is therefore proposed to introduce it in the first project year on a limited number of farms and have its effectiveness evaluated by the farmers.

For the control of the trypanosomes, which affects land preparation, see section 5.4.6.

Table 19 Project support for haricot bean production improvement

Activity	Target	Responsibility
(200) Training on pest and diseases and improved crop husbandry	Crop protection specialist (1) and agronomist (2) and 6 FTC staff	SARI
(200) Training on soil and water management	NRM expert (1) and 6 FTC staff	SARI/ILRI
(300) Farmer training and program follow up (in FTCs) on haricot bean production system	Interested farmers around 6 FTCs	FTC staff, guided by Woreda/project and SARI staff
(300) Farmer training and program follow up (in FTCs) on soil and water management	Interested farmers around 6 FTCs	CIAT
(300) Farmer and FTC staff training and program follow up at FTCs for bio fertilizer testing program	Interested farmers around 6 FTCs and 6 FTC staff	National Soil Research Laboratory
(100/200) Supply demonstration and training materials including posters on pest, soil and water management, special plough, inoculum, fly trap	6 FTCs	Various research organizations

5.4.3 Fruit and fruit trees (Coffee/livestock system)

Marketing

Before entering into a commercialisation strategy for fruits, the market demand and supply of various fruits should be assessed in more details, including market mechanisms/partners and the feasibility of local processing of fruits (in particular avocado pears) and export markets. To facilitate this process, fruit producers should be clustered and trained to increase their negotiating power. Once these initiatives have started, training will have to be provided on quality improvement and the capacity of the groups in terms of buying and selling fruits.

Table 20 Project support for improving fruit marketing

Activity	Target	Responsibility
(400) Study fruit supply and demand and market mechanism with aim of developing market strategy	Farmer surrounding 16 FTCs	SARI/ICRAF/students and project staff

(200) Training in (cooperative) group formation	Woreda cooperative promotion staff (3) and staff 16 FTCs	Project staff/consultants
(300) Training and follow up program (in FTCs) in (cooperative) group formation.	Interested farmers around 16 FTCs and cooperative staff	FTC staff, guided by Woreda/project staff

Input supply/credit

Once market demand for the various fruits is known, the supply of improved planting material has to be facilitated through the partner institutions (pineapple – Awada, mango/papaya – Melkassa/ICRAF, Avocado – Jimma/ICRAF) Following the input supply privatization strategy, emphasis will be put on farm seedling production. This will require training of farmers in nursery management and new propagation techniques (grafting, and cuttings).

Table 21. Project support for improving fruits input supply systems

Activity	Target	Responsibility
(200) Training on nursery management	Woreda nursery expert (1) and 16 FTC staff	SARI staff
(200) Training for grafting and new propagation methods	Woreda nursery expert (1) and 16 FTC staff	Melkassa/SARI staff
(300) Facilitate supply improved seed from various partners	Farmer nurseries around 16 FTCs	Woreda input supply desk and project research partners
(300) Training and program follow up program (in FTCs) in improved nursery management new propagation methods (grafting, cuttings)	Interested farmer around 16 FTC	FTC staff guided by Woreda/project staff, and SARI/ICRAF/Melkassa staff
(300) Provide credit fund for on farm nursery (if required-year2)	Farmer nurseries around 16 FTC	Sidama Micro Finance and/or Omo micro Finance with project funds
(100/200) Supply of demonstration/training materials including posters and leaflets grafting equipment, watering cans.	16 FTCs	Various research organisations

Production

Once fruits are becoming more commercialized, attention will have to be paid to improving crop husbandry practices, in particular pest and disease control and planting arrangements in relation to other crops, in particular coffee.

Table 22 Project support for improving fruit production

Activity	Target	Responsibility
(400) Study existing fruit production system in particular fruit arrangement and management	Farmers around 16 FTCs	SARI/ICRAF/students and project staff
(200) Training on pest and diseases and improved crop husbandry	Crop protection specialist (1) and fruit tree specialist (2) and 16 FTC staff	SARI/Melkassa staff
(200) Training on planting arrangements and management of fruits vis a vis other system components	Agroforestry experts and 16 FTC staff	SARI/ICRAF staff
(300) Training of farmers and follow up program (in FTCs) on pest and diseases control and fruit planting arrangements	Interested farmers around 16 FTCs	FTC staff guided by Woreda staff and SARI/ICRAF staff
(100/200) Supply of demonstration materials to FTCs including posters, leaflets	16 FTCs	Various research partners including Melkassa and ICRAF

5.4.4 Spices (Ginger)

Marketing

National demand for spices is reported to be good, however present production in Dale is limited. For ginger to become a major marketable commodity, varieties, quality and quantities as well as innovative farming arrangements have to be assessed through a market supply demand study. An integral part of this assessment is the linkages between the (potential) producers and the Addis based spice extraction factory. To increase their negotiating power, spice producers should be made aware of the need to organize themselves into groups. Once these initiatives have started, training will have to be provided on improving quality and the capacity of the groups in terms of buying and selling spices.
(to start in the second year)

Table 23. Project support to improve ginger marketing

Activity	Target	Responsibility
(400) Conduct marketing	Farmers, traders and	Project staff/students

study on the supply and demand and market mechanism with the aim of developing a market strategy	processing industry	Jimma/Teppi research station staff
(200) Training in group formation	Woreda cooperative desk and staff 4 FTCs	Project staff/consultants
(300) Farmer training and follow up program (in FTCs) in group formation	Interested farmers around 4 FTCs	FTCs guided by Woreda and project staff
(100/200) Supply of demonstration/training materials on post harvest handling	4 FTCs	EARO and project staff

Input supply/credit

Once the required varieties are known, planting material can be supplied from Teppi/Jimma research station and be introduced on farms. A farmer to farmer planting material system is commonly practiced and need no further improvement.

Table 24. Project support to improve ginger input supply

Activity	Target	Responsibility
(300) Facilitate the supply of improved planting material	Farmers around 4 FTCs	Jimma/Tepi and project staff

Production and NRM

Since ginger is a relatively unknown crop in the area, the capacity of staff and farmers on crop husbandry will have to be improved. An important issue raised was how to mix ginger with other system components. Before starting a program of capacity building a study will be conducted on the existing production system.

Table 25. Project support to improve ginger production

Activity	Target	Responsibility
(400) Study of existing ginger production system in particular planting arrangements	Farmers around 4 FTCs	Project staff/students with Awada research station staff
(200) Training in the husbandry of ginger	Woreda spice experts (2) and 4 FTC staff	Jimma/Tepi and project staff
(300) Training of farmers (in FTCs) and follow up program in improved husbandry practices	Interested farmers around 4 FTCs	FTC staff, guided by Woreda/project and Jimma/Tepi staff
(100/200) Supply of demonstration/training	4 FTCs	Various research organizations (EARO)

materials to FTCs including posters and leaflets on field management		
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5.4.5 Irrigated vegetables (Haricot bean/livestock system)

Marketing

The marketing of vegetables (onions) is presently targeted for the local market i.e. Yirgalem, Dilla and Awassa. A supply and demand study for the vegetables should be made to quantify the potential economic scope for this commodity since an oversupply can easily lead to a drop in prices. Such an oversupply may occur as a result of the newly constructed ponds. To improve the farmers negotiating powers and share of the income derived from the products, innovative methods for organizing farmers into groups (especially women) will be introduced by the project. Improvement of quality and storage will follow based on market demands (scheduled for the second project year).

Table 26. Project support vegetable marketing

Activity	Target	Responsibility
(400) Study of market supply and demand and market mechanisms for vegetables	Farmers around 6 FTCs	Project staff/students with Awada research station staff
(200) Training in group formation	Woreda staff (2) and staff 6 FTCs	Project staff/consultants
(300) Training and follow up program (in FTCs) in group formation for marketing of vegetables	Farmers (in particular women) around 6 FTCs	Staff FTCs, guided by Woreda and project staff
(300) Training on quality and product storage	Cooperatives	Debut University

Input supply/credit

At present farmers grow their own planting material and purchase occasionally seeds from private shops in Awassa. Supply of water lifting devices and water distribution systems has not yet started since the ponds are relatively new.

No major innovations are envisaged in the supply of planting materials since a private system already exists. Innovations will however have to be made for the supply of water lifting (watering cans, treadle pumps) and water distribution systems (drip irrigation). Following the overall privatization strategy, involvement of cooperatives and or private businesses in the supply of such equipment should be explored. Lessons may be learned from other irrigation systems in which pumps are operated by private people. A study will be conducted on the feasibility of such an approach. Once the input supply system is determined, capacity building in terms of business operation and credit facilities, needs to be planned (second year)

Table 27. Project support input supply system for irrigated vegetables

Activity	Target	Responsibility
(400) Study to develop innovative input supply system for irrigation water lifting and distribution technology system	Cooperatives (3) and or private business	IMWI/students and project staff
(300) Facilitation of the introduction of the input supply system with capacity building and credit facilities (year 2)	Cooperatives and or private business	IMWI and project staff with project funds.

Production and NRM

Since the ponds are a relatively new introduction, the capacity of the Woreda staff and farmers to use the water properly as well as to use the irrigation equipment need to be developed.

Table 28. Project support production and NRM

Activity	Target	Responsibility
(200) Training on vegetable husbandry	Woreda vegetable experts (2) and staff from 6 FTCs	SARI/Debu University staff
(200) Training on irrigation technology	Woreda irrigation expert (1), vegetable expert (2) and staff 6 FTCs	IMWI staff
(300) Training and follow up program (in FTCs) on vegetable husbandry and irrigation	Interested farmers around FTCs	FTC staff guided by Woreda/project and IMWI/SARI/Debu staff
(100/200) Supply of demonstration/training materials for FTCs including treadle pumps and drip irrigation equipment	6 FTCs	Various research organizations

5.4.6 Cattle – coffee/livestock system

Marketing (milk, milk products and hides)

The potential for the commercialization of milk and milk products has been identified for farmers in and around 6 FTCs near Yirgalem town. Investments will be required in milk collection and processing equipment. A feasibility study including assessing

supply and demand for milk and milk products and the economics of “joint” processing of milk has to be undertaken before deciding on a marketing strategy (individual or jointly) for the collection, processing and sale of milk.

If the joint collection, processing and sale of milk and milk products is found to be a feasible option, the already existing cooperatives will be strengthened in the first year. This needs to be followed by development of the necessary infrastructure and the training of group/cooperative staff in processing and sale of milk and milk products. These activities are expected to take place during the second project year.

To improve the income generated from the sale of hides, the quality of the hides need to be improved (see production) and the negotiating power of the farmers need to be improved. At present all hides are sold through private traders which sell them to tanneries. Involvement of cooperatives in the purchase and sale of hides will be pursued by first of all linking them with the tanneries to assess demand and supply for hides and to develop innovative ways to finance/contract the purchase of hides (and skins) with the tanning industry.

Table 29. Project support for milk and milk product marketing

Activity	Target	Responsibility
(400) Feasibility study on milk supply and demand and processing, including possible market mechanisms and structures	Farmers/cooperatives in 8 FTCs	ILRI/students and project team
(200) Training on milk collection and processing	Woreda livestock experts and staff 8 FTCs	ILRI
(300) Training and follow up program (in FTCs) for milk collection and processing (second year)	Interested farmers/cooperative staff	FTC staff guided by Woreda and project staff
(300) Facilitate loans for purchasing collection and processing equipment for group structures (year 2)	Farmers/cooperative structures in 8 FTCs	Cooperative promotion office and project staff (project may consider funding part of the credit through existing institutions)
(400) Study supply and demand for hides and develop contract arrangements with tanneries	5 Cooperatives in the Coffee/livestock system	Cooperative promotion desk/students and project staff

Input supply/credit

The supply of inputs and services for the dairy system are mainly in the hands of government and the project will aim at introducing/strengthening of innovative systems for input and service supply.

To improve the genetic potential of dairy animals, the functioning and economics of the existing (private) bull station system will be studied. If found to be economically viable, a strategy for expanding this system will be supported including capacity building and the provision of a credit fund for the purchase of bulls.

To improve the supply of drugs and veterinary services for dairy and other animals, the existing input supply system will be studied during the first year. Innovative approaches for privatization of these services will be introduced/supported in the second year, including the sale of drugs and veterinary services from private (licensed) shops and or the cooperatives. The project may also support these innovative activities (if required) through capacity building of staff from cooperatives and/or the private sector.

To improve the supply of (protein rich) feed for the dairy animals the project will support innovations in the seed multiplication system. Presently the seeds of grasses and legumes are supplied for multiplication to a group of farmers for multiplication system. This system will be studied with an aim of commercializing it, including the involvement of the dairy cooperative in purchasing and selling of some seed seeds. This may lead to a capacity building program as well as the provision of credit funds for the purchase of seeds by cooperatives (year 2)

Table 30. Project support input supply dairy system

Activity	Target	Responsibility
(400) Study the existing bull station including potential demand with the aim of strengthening and expanding it.	Existing bull station (4) in and around the 8 FTCs	ILRI/ students and project staff
(300) Training for improvement and expansion of the bull service station	Private bull station owners (4) In and around the 8 FTCs	ILRI and project staff
(300) Provide credit funds for expansion of bull station service (year 2)	Future private bull station owners in and around the 8 FTCs	Sidama and/or Omo Micro Finance with project funds
(400) Study the potential for privatization of the supply of drugs and veterinary service based on potential demand	Existing program and farms in and around 8 FTCs	ILRI/ students and project staff
(400) Study the existing fodder multiplication system with the aim of developing a innovative system involving farmers and cooperatives and or private enterprise	Farmers involved in the multiplication of fodder seeds and planting materials	ILRI/CIAT/students project staff

(300) Training in on farm production of fodder species	Woreda input supply desk (1) and staff 8 FTCs	ILRI/CIAT project staff
(300) Supply of fodder species	Interested farmers in and around 8 FTCs	ILRI/CIAT with project funds
(300) Training of farmers and cooperatives (in FTCs) the development of a farm based fodder seed multiplication scheme	Interested farmers in and around 8 FTCs	FTC staff, guided by Woreda/project staff
(300) Provide credit funds for the purchase of seeds by cooperatives (if required)	Dairy cooperative	Sidama and/or Omo Micro Finance with project funds

Production

To commercialise dairy production, attention will have to be paid to pest and disease control (also important for the quality of the hides), feeding, housing and post harvest processing and storage. The project will support this activity through capacity building program. Capacity will also be build for the integration of fodder species into the existing farming system. A study will be conducted to asses the present practices.

Table 31. Project support for dairy production

Activity	Target	Responsibility
(200) Training in improved dairy husbandry including pest and disease management	Woreda livestock experts (5) and 8 FTC staff	MoARD/ ILRI
(300) Farmer training and program follow up (in FTCs) for improved dairy husbandry	Interested farmers in and around 8 FTCs	FTC staff guided by Woreda/project staff and MoARD /ILRI staff
(400) Study of existing on farm fodder production system in particular spatial arrangements	Interested farmers around 8 FTCs	SARI/students/FTC staff and project staff
(200) Training in improved on farm fodder production	Woreda fodder experts (2) and staff 8 FTCs	MoARD/SARI
(300) Farmer training and program follow up (in FTCs) for improved on farm fodder production	Interested farmers around 8 FTCs	FTC staff, guided by Woreda/project staff and MoARD and SARI.
(100/200) Supply of demonstration materials	8 FTCs	Project

including posters and leaflets on dairy		
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5.4.7 Cattle – Haricot bean/livestock system

Marketing (butter and hides)

The potential for butter has been identified for farmers in and around 6 FTCs in the haricot bean/livestock system. Presently the marketing of butter is handled by women, who sell the butter individually in small quantities in the local market to small village traders. To increase the negotiating power of the women, formation of groups should be encouraged. Such groups could start selling butter in larger quantities and be linked to higher level (Woreda level) traders. To consider the feasibility of this approach a study on the marketable quantities of butter should be conducted.

To improve the income generated from the sale of hides, the quality of the hides need to be improved (see production) and the negotiating power of the farmers need to be improved. At present all hides are sold through private traders which sell them to tanneries. Involvement of cooperatives in the purchase and sale of hides will be pursued by first of all linking them with the tanneries to assess demand and supply for hides and to develop innovative ways to finance/contract the purchase of hides (and skins) with the tanning industry.

Table 32. Project support for butter marketing

Activity	Target	Responsibility
(400) Supply and demand study on butter to determine including market channels and mechanisms	Farmers (especially women) in around 6FTCs.	ILRI/students and project staff
(200) Training in group formation and marketing	Woreda cooperative promotion staff and staff 6 FTC staff	Project staff/ILRI
(300) Training of farmers and follow up program (in FTCs) on group formation and marketing	Interested (female) farmers around 6 FTCs	FTC staff, guided and supervised by Woreda/project staff and ILRI
(400) Study supply and demand for hides and develop contract arrangements with tanneries (to be combined with coffee/livestock system)	3 Cooperatives in the haricot bean/livestock system	Cooperative promotion desk/students and project staff

Input supply/credit

No major innovations are envisaged until a substantial market develops, except for the supply of improved butter processing equipment and the materials required for

the eradication of the trypanosomes. The project proposes to introduce the churn developed by ILRI and to develop skills of local carpenters to manufacture such churns. Before starting this innovation, the demand for the churns will be studied.

Depending on the technology used for the fly eradication program, traps and/or chemicals (for drip on) will be used to reduce the fly population. A sustainable supply system needs to be developed for these inputs through private channels. Innovations will be based on a study for the supply system used by the Sterile Insect Technology (SIT) program.

Table 33. Project support input supply for butter development

Activity	Target	Responsibility
(400) Study the potential demand for butter churns	Farmers around 6 FTCs	Project staff/students
(300) Training of local carpenters making butter churns	Interested carpenters in or near the haricot bean/livestock system	ILRI
(400) Study of the SIT input supply system to develop an innovative method for supply of traps and drip on chemicals (if required)	Farmers in the haricot bean system	ILRI

Production

The main problem related to the production of butter is the trypanosomes disease which kills the cattle. The project will introduce a trypanosomes eradication program in close collaboration with the already on-going SIT program, based on an assessment of existing tse tse fly population. Based on this assessment a program may be developed (if required).

To alleviate the workload of the women, a butter churn will be introduced, for which a small training program will be developed.

Table 34. Project support for butter production

Activity	Target	Responsibility
(400) Study the existing fly population and develop a program in close collaboration with SIT program	Farmers in the haricot bean/livestock system	ILRI
(200) Training in the use of the butter churn	Woreda livestock staff and 6FTC staff	ILRI
(300) Training farmers (women) and program follow up in the FTCs in the use of butter churns	Interested farmers in and around 6 FTCs	FTC staff, guided by Woreda/project staff

(300) Supply of demonstration materials to the FTCs including butter churns, fly traps	6 FTCs	ILRI
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5.4.8 Goat – haricot bean/livestock system

Marketing (meat)

The export demand for live animals is reported to be considerable. To realize this market potential for Dale Woreda, a linkage should be made with the export abattoir in Addis to determine demand and quality specifications. Simultaneously, the supply of animals should be assessed. Based on this information a marketing strategy will be developed between the abattoir and the farmers. (In) formal (cooperative) groups of farmers will be formed to increase the negotiating power of the individuals.

To improve the income generated from the sale of goat skins, the quality of the skins need to be improved (see production) and the negotiating power of farmers to sell the skins also needs to be improved. At present skins are sold through private traders which sell them to tanneries. Involvement of cooperatives in the purchase and sale of hides will be pursued by first of all linking them with the tanneries to assess demand and supply for skins and to develop innovative ways to finance/contract the purchase of skins (and hides) with the tanning industry. It is noted that the supply of skins in future may be limited as a result of exporting live animals from the PLS.

Table 35. Project support in goat marketing

Activity	Target	Responsibility
(400) Study the market supply and demand of live animals and market mechanism with the abattoirs	Farmers and traders in the haricot bean/livestock system	ILRI/students project staff
(200) Training in the formation of marketing groups	Woreda promotion staff and staff 6 FTCs	Project staff/consultants
(300) Farmer training and follow up (in FTCs) in the formation of marketing groups	Interested farmers around 6 FTCs	FTC staff guided by Woreda/ project staff
(300) Develop linkages with traders and potential exporters	Farmers in and around 6 FTCs, cooperatives	Regional Bureau of Agriculture and Rural Development Project staff
(400) Study supply and demand for skins and develop contract arrangements with tanneries (to be combined with coffee/livestock system)	Farmers and 3 Cooperatives in the haricot bean/livestock system	ILRI/students and project staff

Input supply/credit

No specific input supply systems are envisaged for year 1. In future improved veterinary services introduced for the cattle in the Woreda will also benefit the goats

Production

To meet the market demands the farmers will have to radically change their production and breeding methods. Particular attention needs to be paid to breeding cycles and fattening periods. Another problem to be addressed is the control of ecto parasites to limit skin damage.

Table 36. Project support in goat production

Activity	Target	Responsibility
(400) Conduct study on the current production system	Farmers in and around 2 FTCs	ILRI, RBoARD, Project staff
(200) Training in market oriented production	Livestock experts (5) and staff 2 FTC staff	Debut/project staff
(300) Farmer training and follow up in FTCs in market oriented production method	Interested farmers in and around 2 FTCs	FTC staff guided by Woreda, Debut Univeristy and project staff
(100/200) Supply of demonstration/training materials on goat production including posters and leaflets	2 FTCs	ILRI/

5.4.9 Poultry (both systems)

Marketing

Potential for the commercialization of egg and poultry meat was proposed for 4 FTCs in the Coffee/livestock system and 2 in the haricot bean/livestock system. Market for these products are in Dale, the neighbouring Aleta Wondo Woreda and the Awassa town (a privately organized egg supply link already exists with Awassa). A study will be conducted to determine how the existing private market system can be improved, expanded. Group formation may follow depending on the outcome of the study. The project will furthermore introduce some improved egg storage facilities for demonstration purposes

Table 37. Project support for poultry marketing

Activity	Target	Responsibility
(400) Study existing supply and demand and market mechanism with aim of developing a more detailed market strategy	Farmers and private traders around 6 FTCs	ILRI/Project staff

(200) Training in (women) group formation to improve marketing	Woreda poultry expert (1) and staff from 6 FTCs	Project staff/consultants
(300) Farmer training and follow up in FTCs for group formation	Interested farmers around 6 FTCs	FTC staff guided by Woreda/project staff
(100/200) Supply of egg storage facilities	6 FTCS	Project

Input supply/credit

A major bottleneck for the on farm poultry production is the supply of improved genetic materials, diseases control and the supply of feed. The project proposes to introduce the Hay box brooder and a supply system will have to be established (the project in the first year may introduce this on a demonstration basis, together with the day old chicks). Some new vaccines have recently been developed which do not require cold chain. (I2 and AV2 and AV4). These vaccines should also be supplied through a private drug supplier (in the first year they may be supplied by the project on a demonstration basis). An option to be considered for the supply of feed is a private and/or cooperative system. However this will not be pursued until this activity has reached sufficiently scale (see production)

Table 38. Project support for poultry input supply

Activity	Target	Responsibility
(200) Training in the use of hay brooders, and vaccins	Woreda livestock experts and 6 FTC staff	EARO/Debu University
(300) Farmer training and follow up in FTCs on the use of hay brooders and vaccines.	Interested farmers around 6 FTCs	FTC staff guided by Woreda/project staff and EARO staff.
(300) Supply of hay brooders, day old chicks and vaccines for demonstration purposes	Interested farmers around 6 FTCs	Project staff
(100/200) Supply of demonstration materials including hay brooders.	6FTCs	Project staff

Production

Once the market has been established, a more commercial oriented production system will be introduced in which quality will be emphasized. The training will also include production of feed.

Table 39. Project support poultry for production improvement

Activity	Target	Responsibility
(400) Study existing production system, role of poultry on household livelihood and management with the objective of possible improvements	Farmers around 6 FTCs	SARI/project staff/ Debre Zeit Research Center (EARO)
(200) Training in commercial poultry production	Woreda poultry expert and staff from 6 FTCs.	EARO/Debub University
(300) Farmer training and follow up in FTCs on commercial poultry production	Interested farmers in and around 6 FTCs	FTC staff guided by Woreda/ project staff and Debub University staff

5.5 Recommendations on innovative technology (practices) and institutional innovations (400 series)

A number of studies have been proposed (see RBM code 400 series) to assess technologies, and input output marketing aspects of priority commodities. During the project life the introduction of these innovations will be closely monitored (see 300 activities) to enable the project and its partners to draw up recommendations on technologies and public and private institutional innovations.

Most of the studies on technologies and institutional innovations cut across several PLS and the findings of the studies will be synthesized across these sites. These will be used to draw lessons on the uptake and impact of technology innovations as well as institutional innovations for marketing (in particular marketing studies and clustering of small farmers with linkages to the larger trade bodies) and the supply of inputs for crops and livestock. Particular attention will be paid to the impact of these innovations on gender and environment. The synthesized findings will contribute to policy recommendations at the federal and regional level.

Besides the studies already indicated, the project will undertake a baseline and follow up study on some key indicators. Such base line data will be gender disaggregated and also include environmental indicators. Guidelines for the baseline data collection can be found in Project implementation Plan.

The project will also prepare environmental briefs for each of the PLS as well as HIV/AIDS and gender studies in 2 PAs of each farming system. Guidelines for the preparation of the briefs and the gender and HIV/AIDS studies were prepared by the project consultants and are included in the Annexes attached to the project implementation plan. Planning workshops will be held to present and discuss the findings of the HIV/AIDS and gender studies.

Annex 1. Baseline data of Dale woreda

Annex 1.1. Land use

Land use type	Area (ha)
Forest and shrubland	20802
Natural forest	142
State forest	436
Community forest	19
Private forest	2643
Shrubs	17562
Arable land	55572
Annual crops	33351
Permanent crops	23662 ¹
Pasture land and browse	24378
Potential cultivable land	24776
Non cultivable land	15300
Others	3172
Total	144000

¹ Out of this, 15375 ha of land is under coffee

Annex 1.2 Crop types, area cultivated (ha) by production (qt) for 1998/99 to 2003/04

Crop	1998		1999		2000		2001		2002/		2003	
	Area	Prod.	Area	Prod.	Area	Prod.	Area	Prod.	Area	Prod.	Area	Prod.
Maize	8636	13882 3	10634. 5	126716	9797.5	41002	5580.5	61943	5580	13998	8331	85345
Tef	407.5	2046	631	1456	1325	4829	782	1987	1038. 5	738.5	2798	12479
Barley	632.5	5420	383	2844	404	3636	428	3884	650	3900		
Wheat	71	677.5	285.5	2036	363	2769	314	2562	300	2400		
Faba bean	277.5	1025	403	3301	223	1840	400	2000	330	900	2232	6680
Haricot bean	1556	9791	370	3072	1601.7	5855	992	4972	532	1630		
Total	11580. 5		12707		13714.2		8496.5		8430. 5		13361	

Annex 1.3 Seed and fertiliser despatched (qt) by OoA to farmers by year and type

Year	Fertiliser (qt)		Maize	Tef	Wheat	Haricot bean
	DAP	Urea				
1993	108.75	108.5	20.125	7.5	4.5	
1994	675	325.75	150	21.75		
1995	667.5	202.5	95.5	24.9	18.5	1.6
1996	3714	652	414.43		20	
1997	4160.5	198	456.5	47.5	33.3	
1998	3838.5		187.5	44.1	25	
1999	390.5		97.625			
2000	540			21.875		
2001	2131		44			
2002	2097		172			
2003	1000					257

Annex 1.4 Names of cooperatives and their capital

No.	Name of Coop.	No. of Members*	Total capital
1	Ferro	2905	3,009,776.70
2	Shewe	4490	3,494,127.40
3	Buabedello	3235	3,735,204.99
4	Wayecho	1859	1,717,739.53
5	Goyeda	1842	527,352.38
6	Wicho	3425	2,991,598.89
7	Weyenenta	1970	1,850,456.12
8	Kegea	2855	463,994.30
9	Ganea	1538	-6760.90
10	Megera	1558	574,298.30
11	Bokasso	1508	1,223,607.84
12	Honkutie	1643	1,129,773.98

* About 30% of the members are women.

Annex 1.5 Soil and water conservation activities in the last three years (2001-04)

Activities	Unit	Year		
		2001/02	2002/03	2003/04
Soil bund construction	km	8.5	18.3	244
Soil bund maintenance	"	7.4	8.3	82
Check dam construction	"	9.5	10.9	81
Check dam maintenance	"	6.4	12.5	30
Cut-off drain	"	5.2	8.38	111.3
Area closure	"	128	406	466
Seedling planting	No.	112500	152750	2481000
Farmers training	"	104	240	
Development Agents' training	"	16	34	

Annex 2 Program of Visit to PLS

Annex 2.1 Methodology of PLS plan development

The first step in the PLS planning was the creation of a Woreda Advisory Learning Committee (WALC) (Annex 2.2), followed by an introduction of the project to the WALC members. The next step was the identification of the major farming systems in the PLS and the potential market commodities within them, together with the WALC members and based on the commodities identified in the strategic plans prepared by the regional and *woreda* agricultural staff. Farming systems and potential commodities were then discussed with the various *Woreda* agricultural service institutions (crop, livestock, natural resources, cooperative department, women affairs and HIV/AIDS officials)¹. This was followed by field visits to the selected farming systems by teams (two to three) consisting of project staff, project research partners and *Woreda* staff (Annex 2.5). During these field visits, semi-structured interviews were conducted with field staff (DAs and supervisors) and community members (male as well as female) to explore the nature of the farming system, to identify the major marketable commodities and their production methods/problems (including natural resource management), input supply and marketing arrangements. Problems associated with the production to marketing continuum of the identified commodities were also discussed. Triangulation technique was used in order to validate information. The suitability and possibility of introduction of new commodities was also explored and discussed². The findings of this initial PRA were then summarized, presented and discussed in a 2-day PLS planning workshops (one in each PLS) which were attended by representatives from the RALC, WALC, *Woreda* experts, DAs, community representatives, male and female farmers, NGOs, and national and international research partners (Annex 2.3; Annex 2.4).

¹ To facilitate this process the project staff had collected/prepared secondary data on the PLS, including GIS referenced maps with bio physical and socio economic data.

² The project team prepared guidelines for these PRA of institutions and community members as well as some notes on the different methods to be used for the PRA.

Annex 2.2 List of WALC members and their address

No.	Name	Tel.	Organization
1	Futessa Shaga (Chair)	06-250337	Head, Dale Woreda Rural Development
2	Kidanemariam Gebrehawariat	06-250140	Agriculture Desk
3	Kama Kayamo	06-250430	Cooperatives Desk
4	Solomon Mamo	06-200093	Input supply and Credit
5	Abraham Marshalo	06-250286	SMFI Sidamo Microfinance Institute
6	Tesfaye Kebede	06-251042	HIV/AIDS
7	W/zo Shallo Rorissa	06-250935	Women's Affairs
8	Mesfin Kebede	06-250002	EARO Awada Research sub-centre
9	SARI		to be nominated
10	Farmers cooperatives		to be named
11	RDO –(Secretary)		IPMS

Annex 2.3 Dale PLS Plan Development Workshop program, September 6-7, 2004
Yirgalem

Date	Time	Presentation	Presenter
Session 1: Chairperson Dr. Daniel Dauro			
Tuesday, September 6	8:30-9:00	registration	Organizers
	9:00-9:15	Introduction of participants	Participants
	9:15-9:30	Program overview	Azage Tegegne
	9:30-10:00	Background and PRA process	Dirk Hoekstra
	10:00-10:30	Coffee break	
Session 2: Chairperson Ato Futesa Shaga			
	10:30-11:00	Crop production	Kahsay Berhe
	11:00-11:15	Questions/discussion	Participants
	11:15-11:45	Livestock production	Azage Tegegne
	11:45-12:00	Questions/discussion	Participants
	12:00-12:30	Cooperatives, Input supply, Rural credit and HIV/AIDS	Berhanu Gebremedhin
	12:30-12:45	Questions/discussion	Participants
	12:45-2:00	Lunch break	
	2:00-2:15	Group formation/Guidelines	Berhanu Gebremedhin
Session 3: Chairpersons Crop: Dr. Tilahun Amde Livestock: Dr. Azage Tegegne Cooperatives, Input supply, Rural credit and HIV/AIDS: Dr. Berhanu Gebremedhin			
	2:15-3:15	Group discussion	Participants
	3:15-3:30	Coffee	
	3:30-5:00	Group discussion continues	Participants
Wednesday, September 7	9:00-10:30	Group discussion continues	Participants
	10:30-11:00	Coffee	
	11:00-1:00	Wrap up and preparation of group presentation	Participants
	1:00-2:00	Lunch	
Session 4: Chairperson Dr. Daniel Dauro			
	2:00-2:30	Crops group presentation	Kahsay Berhe
	2:30-2:45	Questions/discussion	Participants
	2:45-3:15	Livestock group presentation	Azage Tegegne
	3:15-3:30	Questions/discussion	Participants
	3:30-4:00	Coffee	
	4:00-4:30	Cooperatives, Input supply, Rural credit and HIV/AIDS group presentation	Berhanu Gebremedhin
	4:30-4:45	Questions/discussion	Participants
	4:45	Closing	Dr. Kebede Kanchula

Annex 2.4 Dale PLS Planning Workshop Participants, September 6-7, 2004,
Yirgalem

No.	Name	Sex	Institution
1	Hailu Soressa	M	Add. Officer
2	Elias Urgage	M	Awassa Agric. Res. Centre
3	Woldemichael Gebre	M	Awassa Agric. Res. Centre
4	Degisew Mulatu	M	Bureau of Cooperation
5	Tilahun Amede	M	CIAT
6	Beritu Gebremedhin	F	DA
7	Argaw Danole	M	Dale Coop. Office
8	Meseret Goshe	F	Dale Dairy
9	Abebe Aseffa	M	Dale office of Agric.
10	Mulugeta Yigzaw	M	Dale office of Agric.
11	Ashenafi Megia	M	Dale office of Agric.
12	Futessa Shaga	M	Dale rural development office
13	Shalo Roriso	F	Dale women's affair
14	Kidanemariam Gebrehawariat	M	Dale Woreda office of Agric.
15	Tesfaye Kimo	M	DOL
16	Asfaw Hailemariam	M	EARO
17	Anteneh Argaw	M	EARO
18	Teramed Bahiru	M	EARO, A.A
19	Haileyesus Negash	M	Farmer
20	Mulugeta Akalu	M	Farmer
21	Tisge Debessa	F	Farmer
22	Abebech Kekebo	F	Farmer
23	Endalkachew Sime	M	Farmer
24	Yirgeta Yerboro	M	Farmer (Chancho)
25	Chanka Buche	M	Farmer (Danshe-Gambella)
26	Benjo Ledamo	M	Farmer (Danshe-Gambella)
27	Sirbo Dargissa	M	Farmer (Doya Dawa kebele)
28	Yohannes Muae	M	Farmer (Fero)
29	Mekonen Bekele	M	Farmer (Shewe)
30	Woldemichael Mengesha	M	Farmer (Shefina)
31	Dule Mimbessa	M	Farmer (Tula)
32	Kassa Aynalem	M	Farmer (Coop. Manager)
33	Abraham Kerfafa	M	Farmer (Jirmancho)
34	Endashaw Janje	M	Farmer (Fero-coop manager)
35	John Pender	M	IFPRI
36	P. Anandajasekeram	M	IFPRI (took part in field work)
37	Jeroen Dijkman	M	ILRI
38	Ermias Tsehai	M	ILRI
39	Woudyalew Mulatu	M	ILRI
40	Solomon Mamo	M	Input and Credit Team
41	Kahsay Berhe	M	IPMS
42	Dirk Hoekstra	M	IPMS
43	Berhanu Gebremedhin	M	IPMS
44	Azage Tegegne	M	IPMS

45	Bubu Haile	M	Office of Agric.
46	Tesfa Mulugeta	M	Office of Agric.
47	Tilahun Negash	M	Office of Agric.
48	Daniel Sokamo	M	Office of Agric.
49	Kassa Etiso	M	Omo Mac. Finance
50	Abraham Marshalo	M	SMFI/Dale Branch
51	Andy Hall	M	UNITEC
52	Tesfaye Kebede	M	WHAPCO
53	Kama Kayamo	M	Woreda Coop.
54	Woinshet Berhanu	F	Yirgalem office of Agric.
55	Tenfeyelesh Gebremeskel	F	Yirgalem office of Agric.
56	Getahun Abebe	M	Yirgalem office of Agric.

Annex 2.5 List of Farmers and PAs visited

	Name of farmer	Sex	PA visited	Farming system
1	Abraham Kerfafa	M	Jirmancho	Haricot bean/Livestock
2	Yirgeta Yerboro	M	Chancho	Haricot bean/Livestock
3	Haileyesus Negash	M	Chancho	Haricot bean/Livestock
4	Chanka Buche	M	Danshe-Gambella	Haricot bean/Livestock
5	Benjo Ledamo	F	Danshe-Gambella	Haricot bean/Livestock
6	Sirbo Dargissa	M	Doya Dao	Haricot bean/Livestock
7	Endalkachew Sime	M	Gane	Coffee/Livestoc
8	Meseret Goshe	F	Awada	Coffee/Livestock
9	Yohannes Muae	M	Fero	Coffee/Livestock
10	Endashaw Janje	M	Fero-coop manager	Coffee/Livestock
11	Woldemichael Mengesha	M	Shefina	Coffee/Livestock
12	Dule Mimbessa	M	Tula	Coffee/Livestock
13	Kassa Aynalem	M	Shewe Coop. Manager	Coffee/Livestock
14	Mekonen Bekele	M	Shewe	Coffee/Livestock

Annex 2.6 List of Institutions and officials visited

No	Name of person	Institution	Responsibility
.	Dr. Daniel Dauro	SARI	Director
	Ato Getahun Degu	Awasa Research Centre	Socioeconomist
	Ato Sebsibe	Regional BoARD	Head, Extension
	Ato Altaye	Regional BoARD	Planning
	Ato Solomon	Regional Education Bureau	Data Manager
	Ato Molla	Sidama zone	Agronomist
	W/t Felekech Basaznew	Sidama zone	Extension Head
	Ato Abebe Mengesha	Regional Population and Statistics Bureau	Data Manager
	Ato Wudneh	Sidama zone Finance and Economic Development Bureau	Head of the Bureau
	Ato Ejigu	Farm Africa, Awasa Office	Head of the office
	Ato Kidanemariam Gebrehawariat	Dale Office of Agriculture	Acting Head
	Ato Abebe Asefa	Dale Office of Agriculture	Extension/Communication Team Leader
	Ato Kama Kayamo	Dale Cooperatives	Desk Head
	Ato Wondwesen Zeberga	Dale Input Supply	Desk Head
	Ato Mulugeta Yigzaw	Dale Office of Agriculture	Team Leader
	Ato Tadese Tefera	Marketing and Credit Services	Team Leader
	Ato Shibeshi Dagne	Dale Office of Agriculture	SWC Expert
	Ato Tilahun Negash	Dale Office of Agriculture	Irrigation Expert
	Ato Mesfin Kebede	Awada Research Sub-centre	Manager

Annex 2.7 Consultation Workshop on Pilot Learning Site, October 19-21, 2004
ILRI, Addis Ababa, Ethiopia

Objective: is to share the findings of previously selected priority commodities at the woreda level and outline specific action plan of work for selected commodities and identified natural resource management activities in four PLSs (Fogea, Atsbi Wenberta, Ada'a liben and Dale).

IPMS staff, Mr. Dirk Hoekstra, Ato Kahsay Berhe, Dr. Azage Tegegne, Dr. Berhanu G/M, Ato Ermias Sehai presented results obtained during the PRA process in the above PLSs. Mr. Jerry Rogers, Mr. David Mac Donald, Misses Clare Bishop Sambrook also gave presentations on result based management, environmental impact assessment and gender and HIV/AIDS respectively.

Working Group

After the deliberations, participants were divided in to PLS groups according to their area of interest and from which PLS they come from. Activity sheet was prepared for discussion by IPMS team on which each group discussed and recorded action plan to be undertaken in the coming one year. These activities had focused on knowledge management, capacity building for institutions, sustainable production and livelihoods and development for each priority commodity. David MacDonald, Dr. Asfaw Hailemariam (National Soils Laboratory) and Ms. Clare Bishop Sambrook went around the four PLS groups and collected some basic information regarding environmental issues; HIV/AIDS and bio-fertilizer issues, respectively, in the activity sheet. Mr. Dirk Hoekstra and Ato Ermias Sehai led the Dale group (see section 5.4.1-5.4.9 of the document "Dale Woreda Pilot Learning Site, Diagnosis and Program Design, January, 2005").

List of consultation workshop Dale PLS working group, October 19-21, 2004

No	Participant name	Responsibility	Address	
1	Dr. Daniel Dauro	SARI DG	09-625996 E-mail: arc@telecom.net.et	06-204521
2	Dr. Gebeyehu Ganga	research, livestock	06-204000/206573/ 09-824255 E-mail: drgang538@yahoo.com	06-204521
3	Dr. Getachew Mulugeta	research, fruit crops	06-209980/ 09-826438	06-204521
4	Ato Futessa Shaga	WALC chair	06-250337	06-204521
5	Ato Kidanemariam Gebrehawariat	WALC representative	06-250140/250093 /250337	06-204521
6	Ato Mesfin Kebede Gesesse	Awada Research Center	06-250002 E-mail: awadarc@telecom.net.et	06-250454
7	Mr. Dirk Hoekstra	Project Leader, IPMS	d.hoekstra@cgiar.org	463215 AA
8	Ato Ermias Sehai	KM expert	e.sehai@cgiar.org	463215 AA
9	Ato Nigatu Alemayehu,	research *& development officer, Ada'a PLS	E-mail: nigatual@hotmail.com nigatualemayehu@yahoo.com	463215 AA
10	Mr. Jerry Rogers	consultant, RBM	E-mail:Rbmg@istar.ca	
11	Mr. David MacDonald	consultant, environment	819-772-0196 e-mail: dmacdonald@symbatico.ca	
12	Misses Clare Bishop- Sambrook, HIV/AIDS and Gender Specialist- Consultant	IPMS consultant, gender	E-mail: clarebishopsambrook@y ahoo.com	
13	Dr. Tilahun Amede	CIAT		463215
14	Ato Tefera Belay	ICRAF		
15	Dr. Asfaw Hailemariam	EARO, Soils	508300 E-mail: asfawhm@yahoo.com	
16	Dr. Wondifraw Tefera	EARO-JIMMA Spice &Coffee	07-110367/09-801708 E- mail: wondyfraw@yahoo.com	07111999