Improving Productivity & Market Success of Ethiopian Farmers

Report on IPMS Environmental Training

June 1-2, 2006

Furra Development Studies Centre, Yirgalem, Ethiopia

Canadian International Development Agency

Agence canadienne de développement international

ILRI
INTERNATIONAL LIVESTOCK RESEARCH INSTITUTE

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MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT

Training Summary

Concepts on the Environment

A two days training on environment was held at the Furra Development Studies Centre in Yirgalem, Dale wereda from June 1-2, 2006 (Annex 1). The composition included a Department Head from the MoARD, senior experts in Natural Resources and Environment from 4 regions (Tigray, Amhara, Oromiya and SNNPR), Office heads, and senior experts on Natural Resource and environmental from 8 IPMS pilot learning weredas (PLWs), two people from an NGO (LVIA) and IPMS staff from both the 8 PLWs and IPMS HQ. The resource persons were an IPMS Environmental Consultant and an IPMS environmentalist. There were 27 participants in the training (Annex 2).

During the training, the IPMS Project manager made introduction to the trainees on the project's overall objective but with focus on the environmental issues. He stressed that this training was organised in order to acquaint trainees on environment in general and the project activities in relation to the environment, in particular. This was in the aim of institutionalising the whole exercise of EIA at wereda level so that environment and natural resources staff at wereda level will be actively involved in the follow-up of the project activities regarding the environment.

There were three main topics covered by the consultant, Agriculture and the environment (Annex 3); Environmental Impact Assessment (Annex 4); and IPMS Environmental Impact Assessment Screening Report (Annex 5). Regarding the environment and agriculture, the trainer defined the environment as dealing with two dimensions, the biophysical and the human aspects and the relationships between them. He illustrated that human activities, particularly agriculture, and the environment have been inseparable for thousands of years in Ethiopia. However, the way the Ethiopians have been conducting agricultural activities have been unsustainable. There needs to be a balance between the human activity and agriculture if environmental sustainability is thought. This is because if eco-systems are unsustainable, then agriculture becomes also unsustainable. As a result, livelihoods dependent on agriculture will suffer the consequences. That is why IPMS has considered this environmental training crucial in supporting its objectives to avoiding any negative environmental impacts as a result of its interventions in the agricultural sector. These impacts could happen during or after the life.

Following the topic on agriculture and the environment was the training on Environmental Impact Assessment (EIA). The concept of EIA was operational since some 30 years ago. Environmental Impact Assessment is a method to identify and analyse potential environmental impacts of a project or activity so that the development intended by the project or activity is environmentally sustainable. However, impacts could come from the project on to the environment or from the environment on to the project. The whole objective of EIA is therefore to predict the negative impacts of projects or activities and suggest appropriate modifications will be made to ensure environmental sustainability. If projects could not be modified to ensure environmental safety/ sustainability and the cost of the project (economic, aesthetic) is much higher, it may be closed but this the last option on the table. Therefore EIA is the friend of development not otherwise.

Seven different steps applied in EIA, from screening to monitoring were defined. All the steps and what are needed to be done in each step were also elaborated in detail. This will help the trainees to

acquaint themselves and understand the terminologies and their meanings to easily to understand the whole process of EIA. In Ethiopia, there is a separate proclamation regarding EIA and it is the project owner that needs to conduct and present the EIA report to the responsible body in the country depending on the scale of the project's operation. For example, if a project is operated at a national level, the Federal Environmental Protection Authority (EPA) reviews the EIA and takes appropriate action. However, if the project is operated by the regions, the regional environmental bodies will be responsible to review and accept or reject the projects. Under normal conditions, small-scale projects do not require EIA.

The third part of the training dealt with the IPMS Environmental Impact Assessment and Screening Report. Even though each individual IPMS intervention is small, the IPMS programmes are designed to encourage many farmers to adopt many of these innovative techniques. Hence, the project has to take precautionary measures to care for possible short and long term environmental impacts as a result of these interventions in the PLWs. During this exercise, the Canadian International Development Agency (CIDA) designed EIA was introduced. In all 8 PLWs, where IPMS interventions are expected to result into possible negative environmental impacts, EASRs with possible mitigating measures were prepared. In these reports only projects with potential short and long term impacts were considered. These EARSs were then discussed by trainees. In these reports, the relationship between the project/activities and the environment are analysed so that the environment remains sustainable and the donor is reassured that the project is adopting appropriate environmental practices so that the project is finally successful. On the other hand, these EASRs also contain both the short and long term (cumulative) impacts of the projects activities. In addition, the environmental impacts reported were not only the classical "land degradation" issues but also some others with few or non-biophysical impact considerations.

Group work

After these 3 deliberations, trainees were subdivided into four regional groups and all EASRs were distributed for their comments on the overall exercise (Annex 6a). The participants came up with minor modification of the reports and some of these comments are already considered when reviewing the EASRs. In general, participants accepted most of the negative environmental impacts and possible mitigating measures reported in these EASRs. These activities completed during day 1.

During day 2, participants were asked to develop indicators for monitoring activities which are indicated in Table 1 of each EASR and additional interventions and their indicators for monitoring that need to be considered in the future (Annex 6a). Participants also came up with some additional mitigating measures and possible indicators for the new specific interventions. In addition, they identified who, how, when and where should the information be collected. These were presented by a group representative where issues raised were discussed by all participants in depth. These indicators and mitigating measures will then be considered for developing a broader plan of action for monitoring activities in all PLWs. Currently, the preparation of environmental monitoring plans for each PLW is under preparation.

Field Visits

The objective of the field visit was to see some special activities, other than the conventional land degradation (soil erosion issues) issues, which has no biophysical impacts, but human and livestock health impacts. An in-depth study of these activities will be conducted for such interventions in the future. Some of the IPMS activities, for example dairying and coffee, may bring about similar environmental impacts in the PLWs where these activities are implemented. This field visit will then contribute to the knowledge base of these trainees because mitigating measures being carried out or impacts encountered could help them take appropriate action in their respective PLWs.

Participants then visited three sites, 2 coffee processing plants (well and less well managed) and a small scale dairy farm around Yirgalem town. Respective managers of these plants made explanations on the processing steps and environmental problems due to these two types of interventions (coffee processing and dairy), but particularly of the coffee processing plants. The environmental problems of these processing plants are high during coffee picking periods, which is usually from October to December/January. This is particularly so in the wet processing plants. There are many processing plants releasing waste water after processing into rivers in Dale.

Wet processing

There are two sources of waste water ultimately released to the river system from this processing method. One is from water released immediately after pulping the red cherries which is normally collected into the lagoons. The beans are separated from the skin and pulp by using a pulping machine that squeezes the berries between fixed and moving surfaces. The flesh and the skin of the fruit are left on one side and the beans, enclosed in their parchment covering, on the other. The clearance between the surfaces is adjusted to avoid damage to the beans. The lighter, immature beans are then separated from the heavier, mature beans through specially designed washing channels or by shaking the beans through a strainer into a tank of water. In the well managed plant, after separating the water and pulp, the water in this system is reused for about 2-3 times. This water then joins the river system through seepage and overflow of the lagoon. The other source of waste water comes from the fermentation tanks. The beans are stored in fermentation tanks for up to two days during which time the slimy layer of the berry is separated from its parchment-like covering, by natural enzymes. The length of the fermentation process is based on the condition of the beans and the climate's condition. When the altitude is low, the fermentation time is short. At higher altitudes, the fermentation can take from 36 to 48 hrs. The whole process uses about 40-60 M^3 of water during pulping, fermentation and washing. It must then be dried to about 10% moisture.

Water released from this source joins into the lagoon where water from the previous source is also kept. The water is kept for some time but during the peak periods, especially in bigger processing plants, the amount of coffee cherries processed is high that the amount of water used becomes high as well. As a result, the amount of waste water in the lagoons increases and becomes higher than the capacity of the lagoons. By this time, the water in the lagoon becomes very bad in smell and is very dark in colour. During this period, the water in the lagoons becomes very acidic with a pH of about 1-2. This water ultimately is released to the rivers which become polluted. Sometimes wet processing plants apply lime into the lagoons to raise the pH.

People in the surrounding areas have been complaining about the pollution of the rivers in their surrounding. As a result many animals using these polluted rivers loose hair and eventually die. Humans using water from these polluted rivers for household use are significantly affected. The poorly managed coffee processing plant though was old had an inbuilt mitigating system which is currently not functional. The wereda Office of Agriculture and Rural Development (OoARD) is aware of the situation. The participants suggested an in depth study on this situation so knowledge gained could also be shared to coffee growing areas in the country. This increases the knowledge base on the environmental impacts of coffee processing on the surroundings.

Dry processing:
This type of processing plants has less environmental problems compared to the wet processing. The environmental problems related to this are dust pollution and bad odour from the pile of coffee hull during moist periods.

Peri-urban dairy development
Following this, a visit was also made to a peri-urban small scale dairy within the outskirts of Yigalem town. This dairy farm is located close to a river where when if the number of cows increases, there is a higher likelihood that effluent from the dairy farm will flow into the river system. Nonetheless, smell and noise pollution seem to be minimal due to the location of the farm. The Municipality of the town seems to have understood the environmental impacts of these types of dairy farm on town dwellers by allocating land at the outskirts of the town. Trainees made note of the efforts of the municipality in attempting to avoid the possible environmental impacts of these types of farms in town settings.

Finally, trainees were asked to identify special topics where an in-depth study is required (Annex 6b). The overall objective of these studies is to increase the knowledge base on environmental impacts, through development and production of in-depth information on current and potential environmental impacts of the special topics; and publishing good-practice guidance on the special topics for stakeholders, incorporating environmental mitigating measures. The special topics considered and the PLWs where they will be studied were:

- Peri-urban dairy- Ada'a, Fogera, Dale, Alamata;
- Coffee processing- Dale;
- Impact of agrochemicals on bee and ultimately honey:- Atsbi, Metema
- Impact of water harvesting schemes[1]- Alaba, Mieso

The IPMS Research and Development Officers made brief presentations on these special topics of study as to why one is preferred to the other. Currently, detailed outlines for the in-depth studies are being developed and will be ready as soon as possible.

The two day training was closed at about 17:00 hrs. The training enjoyed a very lively and active discussion from participants. The trainees also acknowledged the importance of the training and its

[1] Other stakeholders (IWMI and Sustaining Water and Nutrient Productivity of Livestock Systems Project of ILRI) will be consulted to avoid duplication of efforts.

timeliness in identifying appropriate indicators and mitigating measures and the special topics for the in-depth studies.

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Annex 1. Programme for IPMS Environmental Training, Yirgalem, June 1-2, 2006

Date	Time	Topic	Speaker/Facilitator
Thursday, 1 June	8:00-8:30	Registration	Kahsay Berhe
	8:30-9:00	Introduction to IPMS and objective of the training	Dirk Hoekstra
	9:00-9:30	Agriculture and the Environment	Ian Campbell
	9:30-10:00	Environmental Impact Assessment	Ian Campbell
	10:00-10:30	Health break	
	10:30-11:30	IPMS Environmental Assessment and Screening Report	Ian Campbell
	11:30-12:00	Discussion	Dirk Hoekstra/Kahsay
	12:00-13:30	Lunch break	
	13:30-15:00	Review of EASRs by Regional Groups	Ian/Kahsay
	15:00-15:20	Health break	
	15:20-16:40	Group reports	Ian Campbell
Friday, 2 June	8:30-9:30	Plan of action/Way forward by groups	Ian/Kahsay
	9:30-10:00	Group reports	Ian/Kahsay
	10:00-12:30	Field visit (Urban dairy, coffee pulp plants) and exercise	Ian/Kahsay
	12:30-14:00	Lunch break	
	14:00-15:30	Special topics/Way forward by group	Ian/Kahsay
	15:30-16:20	Group reports	Ian/Kahsay
	16:20-16:30	Wrap up session	Ian Campbell

Annex 2. List of participants in the Environmental training, Yirgalem, Dale, June 1-2, 2006

No	Name	Organization	Address			
			P. O. Box	E-Mail	Phone	Fax
1	Melese Teshome	Alaba, OoARD Expert, Soil and Water Conservation	P.O. Box 21, Alaba Kulito		0465 560039	0465 560043
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5	Hailay Berhane	Atsbi, Head, OoARD			0344 410285	
6	Shitaye Yumura	Dale, OoARD Head, NR and Land Use			0462 251515	
7	Kassegne Tsega	Fogera OoARD Expert, Land Survey			0584 460546	
8	Hailemariam Amha	Alamata, OoARD Head, NRM	P.O. Box 28, Alamata		0347 740296	
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