

## Training Component

Through the different components of the AMAREW Project, development and dissemination of new technologies that could be used in improving the production and productivity of crops and livestock, as well as managing the natural resources are planned to be implemented in the selected areas of the mandate woredas of the four ARARI research centers, the five pilot extension woredas, and the three pilot watersheds. Obviously, for these new technologies to be adopted, people who are supposed to implement the technologies should have the required knowledge, skill and positive attitude. This includes people involved at all levels of the technology development and dissemination process. Woreda experts need to have knowledge and skill about the technologies that they are disseminating and about alternative methods of technology transfer. Similarly, researchers require knowledge that would help them to be effective and efficient in developing appropriate technologies. Furthermore, farmers should have clear understanding about the technologies and skills that would help them improve their practice. In addition, they also require knowledge and skill that will help them to commonly manage natural resources.

On top of this, as a result of the decentralization process, the woreda agricultural and rural development offices are made to shoulder the power and responsibility of deciding on all developmental activities that should be carried out in the woredas without having the required manpower and capacity the job seeks. Due to this, building the analytical, operational, and management capacity of partner institutions and farmers within the context of strengthened research and extension services through the identification of long-term training, short-term in-service training, educational or motivational study tours were considered as key areas requiring the project support. Hence, the 2005 training plan is designed with the consideration of these assumptions.

**Long-term degree training:** Degree training of selected ANRS professionals is considered as one of the principal means of building human and institutional capacity and facilitating the research/extension linkage paradigm shift. In line with this, together with its ANRS partners, the project identified key areas that need to be strengthened through upgrading academic qualification of their staff.

### **BS training**

- Nine employees of BoA will attend their third year and one employee of BoA for his second year summer BS classes at Mekelle and Alemaya Universities

- Three employees of ARARI will attend their second year regular BS classes at Mekelle and Bahir Dar Universities
- Ten employees of BoARD, ARARI and EPLAUA will be nominated to attend summer BS classes in local universities.

#### **MS training**

- Three researchers from ARARI, one woreda level extension worker and one regional expert who passed the University entrance examinations were sent to Alemaya University to attend MS degree classes. Three out of the five are finalizing their research work and have started the write-up. The other two are preparing to submit their proposal. All of them are expected to complete their studies before the end of 2005
- Five employees of BoARD and ARARI will be nominated to attend MS classes in local universities.

**Short-term in-service training:** These courses and trainings are targeted to equip employees of partner institutions and the ultimate beneficiaries of the project, the farmers, with the required Knowledge, Skill and Attitude (KSA) to conduct the activities planned in the research or extension component of the project. Furthermore, they are also used as strategy to link research, extension and farmers.

**Upgrading researchers' skills:** In this category, training is aimed at upgrading knowledge and skill of researchers in some critically required areas. These will be identified and organized. Some of these trainings are crosscutting which will be attended by selected researchers coming from all research centers and others are specialized trainings which will target and benefit specific research centers.

The trainings planned for 2005 are listed below and the budget required to carry out these trainings is included in the 2005 research component budget (Table 5 No.1.1 and 1.4) asked for the different research centers of ARARI.

#### **Identified training titles:**

##### **Crops**

- Training on agricultural products quality analysis and orientation to international quality standards of exportable crops
- Training on chemical and physiological (agronomic) analysis of crops

- Individual in-service training on laboratory and field research methods in entomology and pathology
- Individual in-service training for potato rapid multiplication techniques for lab technicians
- Training on Sericulture technology
- Tissue culture techniques

**Natural resources**

- Training on soil fertility management and organic farming
- Training on integrated watershed management research
- Irrigation and drainage and Water harvesting technology
- Training on modern (Indian) taping technology

**Animal sciences**

- Individual in-service animal nutrition training
- Individual in-service apiculture training

**Cross-cutting**

- Statistical analysis using SAS, agro-base, SPSS, EVIEW, LINDO and LINDEP

**Inductive training for junior researchers:** Most of the ARARI research centers are in their formative stages. As a result, most of the staff members are newly recruited young researchers that have limited experience in agricultural research. Even then, these researchers are expected to write proposals, conduct experiments, and ultimately come up with practical results useful to farming community. On the other hand, most of the Universities that educated these researchers do not equip them to independently handle the daunting challenge they face to develop technologies that will solve the complex problems prevailing in the subsistence farming system of the region. Therefore, it is not realistic to expect from these young researchers to initiate a viable research, which could result in problem solving technologies required to transform the ANRS agriculture. One recognized method, which could be utilized to tackle this kind of problem, is organizing an inductive training to fresh graduates joining the research system. The training creates an opportunity for newly recruited researchers including other junior researchers to have the basic knowledge and skill for the challenging job of designing and implementing relevant research.

In this training, participants will be made to stay in the inductive training program for an extended period of time (preferably from 45 to 60 days) and will be exposed to the various challenges and fundamental concepts and methods of agricultural research through classroom sessions and fieldwork experience. The course will emphasize problem analysis, design and implementation of

participatory diagnosis surveys, design of experiments, data collection and analysis, and report writing. Trainees will also be made to conduct library search and review past research works in their area of specialization under the guidance of selected local mentors. Detailed curriculum will be developed in consultation with relevant experts and senior researchers. Resource persons identified from within the ARARI and outside will offer the course. Our plan is to conduct the training at Adet Agricultural Research Center. The budget required to carry out these training is included in the 2005 research component budget (Table 5 No. 1.4) of ARARI.

**Upgrading the skill of development workers and farmers:** The extension component of the project has planned to execute different extension interventions that are aimed at exposing farmers to different technological options and working systems, which will help farmers improve their livelihood. Although some of these interventions seem familiar, most of them are new to the presently targeted beneficiaries. Hence, beneficiaries are required to have clear understanding on how to apply them in practice and DAs assigned to help these farmers are also made to be equipped with the background knowledge and skill about the technologies and systems. The relevance of the trainings has been confirmed during the woreda level assessment. Our plan is to implement a training contract agreement, which will help to insure the application of the learned skills into practice. Trainings are planned to be offered by the woreda experts, however, if the woreda lacks the required expertise, regional experts and the AMAREW Project senior staff will also be involved.

**Identified training areas:**

- Crop
- Livestock
- Natural Resources Management
- Extension and Home Science
- Capacity building

The budget required for these activities is included in 2005 Extension Component budget (Annex Tables 9, 10, 11, 12 & 13) of each woreda.

**Research-extension linkage promoting trainings organized by researchers for extension workers and farmers:** The economic and social impacts of a new knowledge and technology are realized only with its adoption and utilization. In a similar token, technologies developed by the research centers can only attain the targeted purpose if they are communicated and made known to the end users. One way of doing this is communicating the information to extension workers who are the information bridges between researchers and farmers. As a result, training of extension workers by researchers about newly developed technologies and clarifying gaps on

the already existing once will help extension agents to update themselves and to be motivated to disseminate the technologies. On the other hand, this could also be used as a forum where researchers and extension workers come together. The forum helps researchers to get feedback and gather information regarding agricultural production problems of their mandate area and strengthen the linkage between them and extension. In line with this, trainings are planned by the research centers for Development Agents (DAs) and farmers.

**Identified training titles:**

- Training on IPM-FFS to establish IPM-FFS groups for control of insect pests
- Training on backyard vegetable production
- Orientation to recently released crops varieties and associated agronomic recommendations
- Training on routine flock/herd management techniques to DAs and farmers
- Training on seed multiplication and potato seed production to DAs and farmers
- Training on IPM and establishment of FFS groups
- Construction of small-scale drip irrigation system with locally available materials for fruit and vegetable production (for farmers)

The budget required for these activities is included in the 2005 research component budget (Table 5 No. 1.2) of ARARI.

**Project wide human capacity building training to Extension Workers, Development Agents, and Farmers.**

**Community Organization Leadership Training for Action (COLTA):** The 2004 pilot woreda extension plan was carried out in selected Peasant Associations (PAs) from each woreda. Unlike the previous year, where the extension intervention focused on individual farmers, this year, group extension will be the dominant extension method that will be followed. Hence, the communities in these PAs will be empowered to have a say in the development interventions planned for their area through creation of an organizational space. For these to be effective, the leadership of these PAs should have the organizational and management skills. We believe that this can best be handled by COLTA training for the selected association leaders of the pilot PAs. Though this training was planned for 2004 it was not conducted because the required organizational structure was not formed in the pilot Peasant Associations (PAs). To conduct this training in 2005, the required budget is included in the 2005 Extension component budget of the pilot woredas.

**Crosscutting short-courses (researchers and extension workers attend the training)**

**Training on training methodology and module development for extension workers and researchers:** Preliminary assessment made on the implementation of the 2003 training plan revealed that most of the trainings were given by junior staff who had limited experience in training methodologies but who were mainly technical experts in their specific fields of study. Organizing a training program on training methodologies was assumed to be having a positive effect in increasing efficiency of the training planned for year 2004. On the other hand, similar types of training were offered in the different woredas with different depth and content. As a result, they lacked the required standard and quality. This necessitated the preparation of a module based training manual for most of the agricultural technologies frequently requiring training. With this background a combined training on training methodologies and training module development was given to East Belessa and Lay Gayint woreda experts and Adet research center researchers. Since it was not possible to cover all project woredas and research centers, in 2005 similar training will be given to woredas experts of Sekota, Guba Lafto and Tehuledere woredas as well as researchers from Sekota, Sirinka and Debre Birhan Research Centers. AMAREW Project senior staff members and resource persons who will be identified from NGOs having expertise in the area will be offering the course. The budget required for this training is included in the 2005 research component budget (Annex Table 1 No. 3 & Annex Table 2 No. 3) of ARARI.

**On-farm experimentation training for extension workers and researchers:** As a result of the joint research-extension planning, extension workers have been involved actively in the on-farm experiments proposed by researchers for their woredas. This will motivate them to play a major role in the execution of the on-farm research activities. However, extension workers and also junior researchers do not have the skill required to shoulder this new responsibility. Hence, imparting such skill through training will be imperative. The training will target woreda level extension workers and junior researchers. In 2004 this training was conducted at Adet for East Belessa and Lay Gayint woredas, therefore in 2005 it will be conducted at Woldia, Sekota and Sheno for the remaining woredas. Senior researchers working in the nearest research centers to the pilot woredas and AMAREW Project senior staff members will participate as resource persons to offer the training. The budget required for this training is included in the 2005 research component budget (Annex Table 1 No. 3 & Annex Table 2 No. 3) of ARARI.

**Education tour:** Different successful traditional as well as improved technologies or successful community organizations exist elsewhere in the country as well as out side. These technologies and community organizations have helped practitioners to tackle different aspects of agricultural

problems. Learning from experiences of such places or communities is a short-cut method to solve the problems of an area. Furthermore, it has also a great motivational effect to mobilize a community for action. Most of the people in our project areas have faced different natural calamities and these have made them to be risk averters and have become reluctant to participate in development interventions. This kind of mindset is not only limited to the community but also to the development actors working in these areas that seem to run out of ideas and motivations. With this background, in-country educational and motivational study tours are planned for Woreda extension workers, Development Agents and farmers of the pilot extension woredas.

**Education tour organized for each woreda:** Arrangements will be made to organize educational and motivational tours for farmers and extension workers at the pilot woredas. This should help them to get experiences of other successful places and the motivation to try and adopt new ideas in their respective areas. The budget required for this training is included in the 2005 Extension Component budget (Annex Tables 9, 10, 11, 12 and 13) of each woreda.

Tables 13A & 13B give a summary of the training related budget for long term, short-term in-service courses, and educational tours.

**Table 13 A. Training related budget for long-term BS and MS degrees.**

No.	Activities	Total 2005 budget (birr)	Budget required for trainees	
			On pipe line	New entrants
<b>1.</b>	<b>Long-term degree training</b>	<b>231788*</b>	<b>138,088</b>	<b>93700</b>
1.1	Tuition, stipend and transport for students attending regular and summer BS classes.	121,450	67,750	53700
1.2	Transport, settlement, books and stationary, thesis binding allowances, and research cost for MS students	110338	70,338	40000

**\*Note: Long-term training covered from VT part of the budget.**

**Table 13 B. Training related budget for short-term in-service courses & educational tours.**

No.	Short-term in-service training	2005 budget (birr)	Budget source	Details in
1.1	<u>Upgrading researchers' skills</u>	341,350	ARARI	Table 5 (Nos

				1.1&1.4)
1.2	Upgrading the skill of Development workers and farmers	190,255	BoARD	Annex Tables 9,10,11,12 &13
1.3	Cross-cutting short courses for extension workers and researchers	20,000	ARARI	Annex Table 1(No. 3) and Annex Table 2 (No. 3)
1.4	<b><u>Research-extension linkage promoting trainings organized by researchers for extension workers and farmers.</u></b>	99,700	ARARI	Table 5 (No. 1.2)
1.5	Project wide human capacity building training to extension workers, development agents and farmers	25,000	BoARD	Annex Tables 9,10,11,12 &13
2.0	Educational tour	50,000	BoARD	Annex Tables 9,10,11,12 &13
<b>Total</b>		<b>726,305</b>		