



Improving Productivity & Market Success of Ethiopian Farmers

Report on Agricultural Technology Exposition and Workshop

June 28-29, 2004



Canadian International
Development Agency

Agence canadienne de
développement international

ILRI
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INSTITUTE



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Federal Democratic Republic of Ethiopia
MINISTRY OF AGRICULTURE AND
RURAL DEVELOPMENT

Introduction

In June of 2002, the Ministry of Agriculture and Rural Development (MoARD) organised a workshop entitled "Poverty Reduction through Transforming Smallholder Systems from Subsistence to Market Oriented". As a follow up to that, a 2 day agricultural technology exhibition and workshop was organized by the ministry in collaboration with ILRI from June 28-29, 2004. This was at the start of the Improving Productivity and Market Success (IPMS) of Ethiopian Farmers Project. The major objective of the technology exhibition and workshop was to revisit what has been done since the first workshop and exert coordinated efforts towards arranging the necessary technological inputs and raising competence through capacity building programme. The specific objectives of this exhibition and workshop were to:

- Identify and access interventions to improve productivity and natural resources management in order to promote sustainable increase in income from smallholder farms.
- Access training and demonstration materials to assist early extension of these interventions through regional and federal extension, NGOs and the TVET program.
- Develop and introduce appropriate technologies suitable for different agro-ecologies and target beneficiaries.

The program and list of participants are attached in Annex 1 and 2, while the opening speech and the exhibits are attached in annexes 3 and 4, respectively. A press release by MoARD on the technology exposition and workshop is also attached following these annexes.

This report briefly summarizes the 3 components of this event i.e.

- The technology exhibition
- The papers presented on the selected crops by the MoARD
- The Working Group deliberations

Overview of technology exposition and Workshop

The Technology Exhibition was at the ILRI campus. There were different agricultural technologies displayed during the exhibition and three papers were presented. The technology exposition/workshop was officially opened by H.E The State Minister, MoARD, Ato Belay Ejigu. The technologies displayed came from International Agricultural Research Centres (IARCs), non-governmental organisations (NGOs), Ethiopian Research Centres and a Private enterprise in Ethiopia. The technologies displayed include improved agricultural implements, improved crops (cereals, legumes,

oil, fruits, vegetables, and fibre crops), forage crops, livestock products and processing, livestock parasite control, water harvesting and use, technologies for addressing land degradation, watershed management, sericulture and capacity building. The technologies displayed were visited by about 800 people including ILRI staff. However, when preparations for the technology exhibition and workshop were underway, a strong wind felled the tents where the posters and different technologies were displayed. This had resulted into delays of the exhibition and workshop the next day.

Papers presented

The MoARD took an initiative to prepare development master plan of different crops and livestock. The main objective of the master plan is to transform farmers towards market oriented cash crop and livestock production systems and then diversify with different livestock raising like bee keeping, sheep or goat fattening, etc.). Currently, farmers in Ethiopia grow low yielding multiple crops. By creating a conducive climate and by using modern technologies, it was suggested that farmers gradually start on specialising in one or two high yielding crop commodities. Based on this idea, potential woredas for growing specific cash crops were identified. At the same time, different areas for livestock production specialisation were identified in the country. Major constraints, gaps and solutions were suggested and also various actions to be taken by extension, research or other organisations and the linkages with market and industries were recommended.

Based on these master plans, the MoARD staff presented 3 papers. The two crops related presentations were presented by Tesfaye Negussie (Market oriented development master plan of cereals, pulses, oil crops and cotton) and Asefa Tigneh (Coffee development plan). While the livestock related presentation was made by Mebrat Alem (Development plans for livestock and fisheries). The papers indicated the current government's interest of revolutionising the agricultural economy from subsistence agriculture to market oriented cash crop and livestock production and increase number and quality of commodities exported. The two crops related presentations were reviewed by Wilfred Mwangi (CIMMYT), Said Silim (ICRISAT), Tsedeke Alemu (EARO) and Tilahun Amde (CIAT-AHI). On the other hand the livestock related presentation by Mebrat Alem was reviewed by John McDermott, ILRI DDG and Daniel Jamu (ICLARM). The comments of each group are presented below.

Comments by discussants on crops related presentations

Crop priorities identified in MoARD's Master Plan are wheat, barley, teff lentil, chickpea, faba and haricot beans, cotton, sesame, coffee and spices. The first set of none crops above are characterised by low yields but have high potential either for export development or import substitution. Raising their quality will be important for export markets. Requests to CGIAR Centers are based on assessments of the limitations of current technologies. The Plan for coffee and spices emphasises improvement of farmer productivity and product quality and, in the case of spices, also area expansion.

Economics needs more attention in the Master Plan if we are to succeed in making

Ethiopian farmers' export commodities more competitive. So-called traditionalism of small farmers should not be the issue –there is plenty of evidence that farmers do respond when good market opportunities exist, and Government's role is to ensure a good market environment and that essential support services are available –such as market information systems. In the coffee strategy, more thought needs to be given to developing niche markets (e.g. organic coffee) and how to ensure and promote a high quality product. Some important aspects may be beyond the realm of agriculture – e.g. an unfavorable exchange rate, reviewing taxation of farmers, measures to make agricultural inputs more attractive to farmers, and reducing the high transaction costs for traders due to poor rural roads and other infrastructure (including the poor Kenyan roads into that potential regional market and Mombassa port).

Questions remain as to what priority should be accorded to import substitution (e.g. for malting barley imports through new barley varieties or by suitable sorghums) and to securing household food security as a necessary precursor to greater involvement of small farmers in crop markets. A good balance will be needed within the overall strategy. In addition, clear definition is needed in roles among partners –both Ethiopian partners and the CGIAR Centers. With respect to the Centers, good examples of the fruits of current collaboration are on show at the Exhibition, backed up by much capacity-building, and we recognize that new priorities are likely to emerge within this strategic partnership.

What may be seen as the limitations of many currently available varieties merely reflects the official priorities of the past; it takes time for plant breeders to produce outputs oriented to new priorities, and many more varieties now in the pipeline do reflect market needs. The development of these new crop varieties also needs to be well focused on agro-ecologies, including recognizing the reality of drought in Ethiopia. In variety dissemination, the formal seed sector currently does not serve most farmers (e.g. producing only one or two maize hybrids, but not varieties suited to drought-prone areas), and the way forward is likely to be through facilitating the emergence of farmer seed producers and their linkage to local and national seed markets (as is being done in the case of beans).

We need to mature to a new phase of R and D. On one side, biotechnology and other modern techniques offer new opportunities for speeding up crop variety development, ensuring their relevance and enabling rapid multiplication. On another side, it is necessary to be more proactive and innovative about identifying and seizing new market opportunities. For example, Ethiopia would need to use both approaches if it wishes to recapture from Brazil our country's natural advantage in decaffeinated coffees. We can do more for ourselves in Ethiopia (like the Vietnamese and Brazilians have done with our coffee!) while still valuing our partnership with the CGIAR Centers. But this way of thinking also needs a change of attitude among ourselves –even before we demand it of our farmers!

New varieties alone, however well targeted, are not enough. Farmers' problems are complex and our challenge is to develop ways in which we can assist them to respond more rapidly to oscillations and longer-term trends in both market and environmental circumstances. Land degradation is fundamental –and lies behind the phenomenon of

crop drought stress. Supplementary irrigation may be just a component within an integrated land-and-water management strategy adapted to different areas. Since in a situation of rising population it is not enough just to maintain productivity, farmers' innovativeness needs to improve and we need to work with them in intensifying to realise the full potential of a farming system. These changes need to be ecologically sustainable (an example was given of productivity improvement of enset in farmers' outfield areas through manure use, as part of a more integrated approach to management and market opportunities). Otherwise we risk encouraging only short-term solutions having temporary benefits.

Comments by discussants on livestock presentation

1. General:

- It is commendable to set certain components of the development plan to apply participatory approaches for development, but it is essential to ensure that the various activities become truly participatory;
- It is highly appropriate that market-orientation is taken as a strategy for development;
- It is encouraging to hear the commitment for provision of even more enabling policy environment, especially to the private sector;
- It is good to put in place mechanisms for progress and impact monitoring.

2. In the area of dairy development:

- It is true that there are huge opportunities in this country for improving livelihoods through dairy development;
- Dairy development using indigenous cattle requires strong organizational skills and a lot of time;
- Dairy development interventions should be driven by demands of markets and not by prescriptive program decisions;
- It is strategically correct to start dairy development with focus on urban and pen-urban markets;
- It is essential to understand certain peculiarities of the Ethiopian dairy market, such as the range of dairy products marketed and the seasonality of demand for these products;

3. In the area of meat development:

- It is essential to appreciate the strong influence of disease factors in limiting access to available export markets;
- Ethiopia can learn from the experiences of the Sudan in localized disease control (zoning) and negotiation skills to exploit available export markets;
- It is worthwhile to consider long-term genetic improvement of indigenous cattle breeds for beef the Improved Kenyan Boran breed is a good example of outcomes from such programs;

4. In the area of poultry development:

- It is good to list all available options for poultry development, and focus on up-

- grading those already tested;
- It is also appropriate to focus on smallholder farmers for country-wide poultry development;
- It is essential to focus on local initiatives to promote markets for poultry products;

5. On markets:

- Livestock markets are growing in Ethiopia and elsewhere, and it is essential to learn from market trends;
- There is a need for capacity building at various levels to better integrate traditional practices with modern marketing; capacity building is here taken to be much more than just provision of specific training, and includes support to adapting useful novel practices;
- Available technologies should be appropriately packaged; adoption studies should investigate not only who adopted technologies, but also who adapted and learned better; we need to be cautious about blanket extension of packages of technologies as these may be adapted differently in different areas;

6. On financing and credit:

Financing services are key for rapid development of the livestock sector in this country;

- These services are also essential for development of complementary socio-economic services that livestock markets depend for development;

7. On integrated development:

- Livestock development benefits from parallel and complementary developments from related fields, hence the need for integrated approaches for sustainable livestock development;
- Even under scenarios of widespread food insecurity, there can be circumstances where food grains can be economically fed to livestock to add value to products.

8. In the area of fisheries development:

- It is appropriate to set aquaculture as the focus of development in fisheries;
- The emerging interest of the private sector in aquaculture in Ethiopia is consistent with similar developments in other African countries;
- It is necessary to appreciate the growing demand for fishery products in Ethiopia, the sub-region and industrialized countries;
- Market/demand is the major driving force for development of fisheries in developing countries; Egypt is a good example of this serving both the domestic and the middle-east market; valuable lessons can be learnt from experiences of southern African countries (Malawi, Zambia);
- It is this growing market which attracts interest of the private sector, particularly in aquaculture;
- there are already a few successful private investors in southern Africa who are producing up to 7000 tons of aquaculture fish for the export market; their success depends on a reliable supply of high quality fingerlings;
- Ethiopia has comparative advantage in developing its aquaculture industry, and

- Tilapia is a prime resource to be developed;
- Ethiopia may need to seek the services of highly qualified expatriate manpower to jump-start its aquaculture; even the technical capacity of the extension services as well as the private sector need to be strengthened;
- Smallholder farmers can also benefit from vigorous commercial developments in aquaculture; on the other hand rapid developments with smallholder farmers can attract private investment;
- Obviously there is a need for strong political will and commitment to encourage private investment in fisheries in general, because this sub-sector is associated with sensitive environmental issues that need policy attention.

Working group deliberations

The MoARD papers presented during the plenary sessions were also discussed in 4 groups. The groups included:

1. Cereals, pulses, oil crops:
2. Cotton, coffee, spices
3. Meat, dairy and feeds
4. Poultry, fisheries, apiculture and sericulture

Each of these groups were asked to identify, production, output marketing, input supply, sectoral & macro policy and credit related constraints and their possible interventions, in relation to the crop and livestock commodities presented.

Group 1 Cereals, pulses, oil crops (presenter: Yonas)

Constraints

- Seeds of superior varieties
 - o Availability
 - o Quality, Purity
 - o Processing and distribution
- Moisture shortage
- Soil degradation
- Problems of diseases and pests
- Lack of knowledge and access to improved technologies

Solutions

- Liberalised seed supply
- Strengthen local seed supply system
- Contractual seed production with potential producers
- Strengthen the capacity of private seed producers and cooperatives
- Enforce quality control at all levels
- Avail preferred crop varieties through introduction and adaptation tests

Production

- How to organise production
 - Grouping small farmers, contracting
 - Credit provision
 - Extension service
- Legal binding contractual agreement

Output marketing constraints

- Quality of commodity
- Price fluctuations in world market
- Quantity related problems
- Linkage between stakeholders
- Inadequate infrastructure, storage, roads, and other price hikers
- Inadequacy, poor quality and sustainability

Solution

- Improve infrastructure, roads
 - Transportation
 - Telephone market information
 - Liberalisation of telecom
- Supplementary irrigation to make the production free from rainfall shortage
- Prioritise areas according to accessibility
 - Market
 - Less developed areas
- Reward quality
- Train procedures to focus on quality
- Standards should be set

Credit constraints

- Denial of credit access
- Down payment and interest rates are sky rocketing
- Absence of mid term credits
- Problems of in kind credit provisions
- Defaults in credit repayment
- Sustainability
- Denial and inaccessible credit for...

Solutions

- Cooperative banks
- Policy

- Management skill farmers
- Repayment in kind

Sectoral and macro policy constraints

- Land use
- Land tenure
- Unfavourable environment private seed companies
- Inadequate support rural areas

Solutions

- Liberalise financial system

Discussion

1. What do we mean by 'liberalising seed system'?

Answer: Through competition, quality and quantity will improve.

2. Many of the issues mentioned at solutions deal with the same thing: improving seed systems.

3. How feasible is the provision of credit by major banks to small producers?
(Commercial Bank of Ethiopia)

Answer: Doesn't need to be CBE specifically. We are asking for a commitment from the government to reserve a certain amount for credit provision.

Group 2 Cotton, coffee, spices (Presenter Dirk)

Questions

1. Extension service in Ethiopia has been strongest in the area of coffee. Identifying it as a constraint might go a bit too far. Coffee production has increased due to governments priorities to coffee.
2. We have a comparative advantage in quality coffee. Ethiopia has special coffee such as Harrar, etc. which can be exploited.
3. Linking processing to production needs to apply to all crops, not only coffee. We need to deal with what we have. Exploit our present resources optimally.

Group 2 report

Cotton, coffee and spices

Cotton sector

- Large and small scale producers
- High input system
- Disease pest prone

Cotton sector problems

- Limited germplasm potential
- Insufficient adapted varieties for rainfed conditions
- No extension system
- No input supply system
- Lack of credit for small scale farmers
- Lack of processing linkages with small farmers
- Land ownership hampers credit access (mortgaging)

Cotton sector recommendations

- Adaptation and improvement of local varieties especially for rain fed conditions
- Importation and development of improved varieties from abroad
- Strengthening of research capacity
- Development of market oriented extension system
- Development of out growers linkages
- Development cotton growers and marketing associations
- Increase linkage and capacity of processing (cottage)
- Review land tenure system to accommodate mortgaging

Coffee sector

- Highly diversified genetic pool
- Dominated by small holders
- Relatively better organized
- Export oriented

Coffee sector problems

- Insufficient adaptation of germplasm into different areas
- Insufficient supply of improved seeds
- Inadequate extension
- Centralized auction system
- LC system problem
- Insufficient credit to purchase
- Lack of possibilities to mortgage land
- Insecure tenure for long term investment

Coffee sector recommendations

- Use of tissue culture/biotechnology technology to speed up adaptation to different environment
- Develop market oriented extension system (quality)
- Decentralized auction and quality control system
- Make auction optional
- Review LC system
- Increase credit supply for purchasing coffee
- Review land ownership rights to stimulate investment in perennial crop

Spices sector

- Dominated by small holder
- Rich in indigenous knowledge
- Newly recognized sector
- Source of cash for small holders

Spice sector problems

- Limited research
- No extension
- No market information by small farmers
- Production poorly linked to processing and value adding

Spice sector recommendations

- Increased attention and recognition for spice research
- Make use of indigenous knowledge
- Use community based seed multiplication system
- Develop market oriented extension system
- Create spice production and marketing farmer organization
- Connect production to processing and value adding

Group 3: Meat, dairy and feeds

Market-oriented small ruminant (for enhanced export)

Constraints:

1. animal health (disease challenges and weak vet service delivery)
2. feeds and feeding
3. breeds and breeding
4. infrastructure
5. consistent supply of uniform products for export market
6. networking of relevant stakeholders related to export
7. functioning of markets
8. policy environment
9. slow intensification of production
10. availability of trained manpower

Specific interventions and technologies to address the constraints:

1. Animal health (disease challenges and weak vet service delivery)

- a. the major animal health problems can be handled by available vaccines and medicaments; the NVI meets the vaccine requirements
- b. realistic rationalisation of public and private vet service delivery
- c. strengthen quarantine services and meat inspection
- d. explore opportunities to using community-based animal health delivery in areas not sufficiently covered by the public and private sectors
- e. appreciate the strategic role of, and integrate, all partners for effective vet service delivery:
 - i. public vet service
 - ii. private vet service
 - iii. NVI
 - iv. Research institutions (EARO, RRI, ILRI, other CG centres, etc.).

2. Feeds and feeding:

- a. promote the available proven technologies from decades of research
- b. encourage improved use of the major traditional feed resources (crop residues, natural pasture)
- c. encourage strategic supplementation of "basal diets" with:
 - i. agro-industrial by-products
 - ii. treatment of crop residue (straw)
 - iii. short-season growing improved forages (grasses, legumes) in the highlands
- d. encourage conservation of excess forage during the lush season for use during the dry season
- e. adequate supply of critical feed and water of market animals enroute to export
- f. promote participatory approaches to promote selected technologies of relevance to communities
- g. aggressive intervention to support commercial production of forage seeds and planting materials, including encouraging farmers to engage in contract production of certified seeds, as planned for crops ("warehousing")
- h. promote dual-purpose crops (food, feed) as a strategy to seed multiplication

3. Breeds and breeding:

- a. AI is not realistic on small ruminants
- b. Some of the indigenous breeds can perform adequately (reach the minimum weight at the specific age); support needed for research to generate research information on commercial production of SR.
- c. Consider selective crossing of indigenous breeds specifically to exploit the export market through commercial farmers and smallholders.
- d. Smallholder farmers can respond to market incentives on enhanced marketing of indigenous small ruminants

4. Infrastructure:

- a. Public quarantine services
- b. Public support to essential services (feed, water, health care, shelter) at:
 - i. Resting/checking points from major supplier areas
 - ii. Collection points
 - iii. Trekking routes
- c. Access roads to major supplier areas
- d. Standard abattoirs
- e. Services for product standardization and quality assurance
- f. Financing services (producers, traders)
- g. Market information service to producers and traders
- h. Support services to extension staff engaged in export promotion

5. Organizational set up to channel standardised (at least uniform) products on more regular basis (to encourage greater market-orientation)

- a. Delivery of timely market information
- b. Public awareness on the merits of greater market-orientation
- c. Integrated delivery of essential services

6. Networking among relevant stakeholders:

- a. Encourage networks and working groups to emerge from expressed needs
- b. Facilitate market integration from production to export for better competitiveness
- c. Encourage information sharing among stakeholders

7. Support to the functioning of markets:

- a. Encourage and support the formation of marketing groups/cooperatives
- b. Empower producers to increase their informed participation in export markets
- c. Standardization, quality assurance and certification of products for export

8. Policy environment:

- a. Increase policy incentives to private operators (producers, traders)
- b. Improved collection and processing of timely animal health information relate to export markets
- c. Rationalisation and integration of animal health service delivery
- d. Aggressive public input towards product standardization, certification and quality assurance
- e. Investigate problems (land use, disease risk) associated with free grazing in the highlands during the dry season
- f. Strengthen public support to input and service delivery on livestock (vis-à-vis crops).
- g. Strengthen production of forage seeds and planting materials by farmers and commercial farmers
- h. Provide active policy support to encourage legal cross-border livestock trade (vis-à-vis illegal trade)
- i. Encourage trained professional to engage in commercial livestock production, to serve as catalysts for greater market orientation of smallholder farmers

9. Slow intensification of production:

- a. Provide policy incentives to the private sector (for its pull effect on smallholder farmers)
- b. Provide attractive credit services

10. Training/capacity building:

- a. Greater focus on enhancing skills of producers
- b. Encourage participatory approaches to promote exports
- c. Encourage highly qualified professionals to engage in commercial farming (for their demonstration role)
- d. Encourage the participation of highly qualified professionals in upgrading of public service delivery (train more professionals?)

(Beef production: similar to SR)

DAIRY (specific interventions):

1. Breeding services:

- a. Rationalisation of AI service (delivery, quality assurance, sustainability)
- b. Parallel use of pure-bred exotic, crossbred, and pure-bred indigenous cattle, using AI technology and bull services as appropriate.
- c. Consider strategic use of MOET to supplement AI service delivery
- d. Re-orient cattle ranches from crossbred heifer production to genetic selection of indigenous breeds (to support AI service delivery)

2. Dairy processing:

- a. Encourage the dairy marketing cooperatives around major markets
- b. Integrated input and service delivery to cooperatives

3. Institutions:

- a. Establishment of a national dairy board (under consideration)

Group: 4. Poultry, fisheries, apiculture and sericulture

Questions

1. Genetic erosion in poultry is very rapid; there is a risk that we will lose our indigenous breeds.
2. Land provision for irrigation schemes is a threat to fishery at lake areas, through pollution of agriculture.

Group: 4. Poultry, fisheries, apiculture and sericulture related issues

Focal Points	Poultry	Apiculture	Fishery	Sericulture
1. Technology				
1.1 Constraint	Feeds, improved breeds, disease	Lack of appropriate technology (queen rearing bee forage seed); value addition (e.g. propolis)	Lack of scientific information, appropriate aquaculture technology (production, post harvest etc)	Production technologies e.g. seed; mulberry varieties; reeling and weaving
1.2 Existing technology	Package document on feed, diseases and improved breed from MoARD	Package document developed by MoARD	Package document (natural fishery and aquaculture)	En silk seed
1.3 Adoption constraints	Incomplete supply of package components; lack of package variability; low purchasing power	Unaffordable package; insufficient extension service; Low knowledge and skills of farmers and extensionists	High cost of inputs e.g. gillnets; poor extension service; poor fish eating habits; Low knowledge and skills of farmers and extensionists; lack of capacity	Low knowledge and skills of farmers and extensionists; lack of mulberry and silkworm seed and multiplication centers
2. Input Supply				
2.1. Essential inputs	Improved breeds; feed; vet, drugs; materials and equipment	Materials and equip.; honey bee colony	Materials and equipment; feed; fish stocks	
2.2. Suppliers	Govt. and private sector	Govt. and private sector	Govt. and private sector	
2.3. Organization of input marketing	Imperfect	Imperfect	Imperfect	Imperfect
2.4. Distribution	Govt.; coops; private	Govt.; private; coops	Govt.; private; coops	Govt.; private; coops
2.5. Constraints	Shortage of supply; poor input quality; market information; infrastructure; lack of forex	Shortage of supply; market information; infrastructure; lack of forex; poor input quality	Shortage of supply; market information; infrastructure; lack of forex; lack of information exchange;	Shortage of supply; market information.; infrastructure; lack of forex; poor input quality
2.6. Recommendations	Improved supply and infrastructure; market info. Systems; encourage local input production	Improved supply and infrastructure; market info. Systems; encourage local input production	Improved supply and infrastructure; market info. Systems;	Improved supply and infrastructure; market info. Systems; encourage local input production

Focal Points	Poultry	Apiculture	Fishery	Sericulture
3. Production				
3.1. Prod. Organizations	Small scale	Small scale and coops	Small scale and coops	Small scale and coops
3.2 Prospects for vertical integration	High	High	High	High
3.3. Spatial distribution	Even	Even	Cone. where water is available	Limited
3.4. Recommendations	Improved technology; markets; credit; knowledge; infrastructure etc	Improved technology; markets; credit; knowledge; infrastructure etc	Improved technology; markets; credit; knowledge; infrastructure etc	Improved technology; markets; credit; knowledge; infrastructure etc
4. Output marketing				
4, 1. Buyers	Consumers; traders; processors	Consumers; traders; processors; exporters	Consumers; traders; processors; exporters	Consumers; traders; processors
4.2. Market organization	Imperfect	Imperfect	Imperfect	Imperfect
4.3 Prospects for export	High	High	High (aquaculture)	High
4.4. Role of farmers organization	None	Medium (collecting and marketing; apiculture cooperatives)	High (Fish cooperatives)	One coop (marketing cocoons)
4.5. Major constraints	Lack of market infrastructure	Lack of market infrastructure	Lack of market infrastructure	
4.6. Recommendations	Develop market infrastructure; market research	Develop market infrastructure; market research	Develop market infrastructure; market research	
6. Sectoral and macro policy				
6.1. Production	Yes			
6.2 Input supply	Yes			
6.3. Market	Yes			
6.4. credit	Yes			
6.5. Recommendations	Breeding and quality	Pesticide	Property rights	

Summary

The agenda was very ambitious for this session. We need to consider it as a brainstorming exercise. How do we move forward with feasible actions that have a high potential impact? What are our strengths and weaknesses, and key players?

Conclusive remarks

We cannot do it alone. We need assistance from the CGIAR centres. Thanks go to all centres that have participated. At the first workshop we presented the commitment of the government to change towards the problems that we are facing. The government has now developed a development plan, which was presented yesterday. This will provide clarity to all institutions and NGOs. This workshop has been a bit broader. The third workshop will be held two years from now. The workshop will be organised by all parties involved, not only by the MoARD.

During the first workshop, recommendations were given, and training courses were held together with CGIAR Centres. The recommendations put forward from this present workshop will provide guidance and will be implemented by the government. Thanks for your participation.

DG ILRI:

We are very pleased to see the MoARD to take leadership in this effort. There is ample evidence that there is a wealth of technologies, we don't need to start from scratch. Thank to the ministry for the very strong support, and to all who have come here these 2 days. Tomorrow we will continue with a smaller group and start designing activities. Change is very much about innovations and organisation.

Annex 1. Programme for the Agricultural Technology Exposition and Workshop, ILRI-Addis Ababa, June 28-29, 2004,

June 28, 2004		
TIME	ACTIVITY	PRESENTER/LOCATION
9:00 – 10:00	Arrival and Registration	Organizers
	Welcoming Speech	Dr. Carlos Sere, DG ILRI
	Opening Speech	H.E. Ato Belay Ejigu, State Minister, MoARD
10:00 – 10:30	<i>Coffee Break and Group Picture</i>	
10:30	Official Opening of Technology Exposition/Workshop	H.E. Ato Belay Ejigu, State Minister, MoARD
10:45 – 12:30	Visit of the Exposition	Organizers
12:30 – 1:30	<i>LUNCH</i>	Executive Lounge and Cafeteria
<i>Chair: Ibrahim Mohammed (MoARD)</i>		<i>Secretary Roger Kirkby (CIAT)</i>
1.30 – 1.40	Introductory Remark: Crop Improvement	MoARD
1:40 – 3:00	Development Plans for Crop Improvement (pulses, oil crops, cotton, cereal crops)	Tesfaye Negussie, MoARD
	Development Plans for Coffee and Spices	Assefa Tigneh, MoARD
3:00-3:30	Discussants	Tilahun Amede (CIAT), Said Silim (ICRISAT), Tsedeke Abate (EARO) and Wilfred Mwangi (CIMMYT)
3:30 – 4:00	Coffee Break	
<i>Chair: Hassan Ali (MoARD)</i>		<i>Secretary: Workneh Ayalew (ILRI)</i>
4:00 – 5:30	Introductory Remark: Livestock Improvement	MoARD
	Development Plans for Livestock and Fisheries (dairy, meat, poultry apiculture, fish)	Mebrat Alem, MoARD
5:30-6:00	<i>Discussants</i>	John McDermott (ILRI), Daniel Jamu (World Fish Centre), Ed Rege (ILRI) Getachew Tikubet (ICIPE), Solomon Demeke (Jimma University)
6:00	Working Group Formation	
6:00	<i>Reception</i>	Cafeteria

<i>Day 2 June 29, 2004</i>		
8:30 – 10:00	Working Group Discussions	
10:00 – 10:30	Coffee Break	
10:30 – 12:30	Working Group Discussion Continues	
12:30 – 1:30	LUNCH	
<i>Chair: John McDermott (ILRI)</i>		<i>Secretary: Tsefaye Negussie (MoARD)</i>
1:30 – 2:30	Working Group Presentations: Crops	Group secretaries
2:30 – 3:00	Discussion	
3:00 – 3:30	<i>Coffee Break</i>	
3:30 – 4:30	Working Group Presentations: Livestock and Fisheries	Group Secretaries
4:30 – 5:00	Discussion	
5:00	Vote of Thanks	Ibrahim Mohammed, MoARD
	Closing Remark	H.E. Belay Ejigu, State Minister, MoARD

Annex 2. List of participants during the Technology Exhibition/Workshop, June 28-29, 2004

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Annex 3. Opening speech

Ato Belay Ejigu

State Minister, MoARD

Distinguished Guests

Ladies and gentlemen,

It is my pleasure and privilege to welcome you all to this important technology exhibition workshop held for the second time in our country. The major objective of the workshop is to revisit what has been done since the first workshop and exert our coordinated effort towards arranging the necessary technological inputs and raising competence through capacity building programme.

Ethiopia today faces some real developmental challenges, key amongst which is that of poverty reduction. The recurrent drought in Ethiopia poses a formidable challenge for the country and its development partners. Thus Government has acknowledged the holistic approach to development in addressing long-term food security for the vulnerable poor.

Hence, our programme puts greater emphasis on addressing the entire continuum from technology generation and extension advisory services, through production, processing, marketing, credit provision and income generation.

Cognizant of this fact that agriculture is the foundation of the country's economy and the major contributing sector to food security, priority emphasis has been given for the growth of this sector. It is because of this that this Agricultural Technology Exposition Workshop is organised under the theme "Improving Productivity and Market Success of Ethiopian Farmers." We hope that this forum would offer an opportunity to have a closer look at the crucial problems and come up with alternative appropriate agricultural technologies and technical backstopping support.

It is our sincere desire that these interventions could minimise the problems imposed on our natural resources while at the same time heighten their development potentials. By necessity, this must recognise the need for intensive and efficient utilisation of our abundant land and human resource. On the part of the Government we are fully committed to keenly implement the outcomes of this workshop for accelerated but environmentally friendly and sustained development.

**Distinguished Guests,
Ladies and gentlemen,**

Government has taken several significant economic reforms and development strategies to enhance a broad-based economic growth.

To meet the challenges of attaining our vision of food security, we have adopted Rural Development Policy and Strategy. We have also developed and adopted the National Food

Security Strategy and likewise, prepared the Sustainable Development and Poverty Reduction Programme.

It would be relevant to this workshop if I note the emphasis given to, the significance of how to use both local and introduced technologies as a means of raising agricultural production and productivity in Ethiopia. Thus it has been recognized that intensification is accepted as one option for raising agricultural production towards the attainment of food self-sufficiency.

Accordingly, Government has embarked upon an agricultural extension program that consisted of the dissemination of agroecology based improved agricultural production technologies since 1995. Results so far achieved in terms of increased production of major staple food crops and the productivity of the agricultural sector are encouraging. The lesson learnt is that properly planned and implemented package program can be effective to help overcome food insecurity challenges in Ethiopia.

In this regard, to accelerate technology generation, address newly emerging priorities and ensure sustained agricultural research funding Government has continued its support to consolidate the Ethiopian agricultural research system to create an enabling environment for the adoption and dissemination of appropriate technologies.

Distinguished Guests

Ladies and gentlemen,

Since the first workshop, we have made multi-faceted efforts to ensure sustainable agricultural development in Ethiopia. In this regard, several technical and vocational training institutions have been established to train development agents, who would also be active actors in fostering entrepreneurship, which is critical to rural transformation.

The Government has also recognised and taken steps in the right direction to develop efficient, competitive and sustainable agricultural marketing and credit system.

Similarly, water harvesting and improved water management has been under implementation in many food insecure areas of the country since the last two years to save the life of people as a protection against adverse drought conditions.

The formation of partnership for a new coalition for food security is one of the major steps taken. The coalition reflects a determination to begin working together to tackle the problems that resulted in repeated episodes of famine.

Distinguished Guests

Ladies and gentlemen,

Despite these commitments, we are painfully aware of the fact that to, bring about rural transformation, a huge amount of financial out lay and technical assistance is a necessity. This is where the assistance and co-operation of international scientific organisations, donor communities and financial institutions is valuable and instrumental.

Hence, to realise our long-term development vision, the selection, introduction, adoption and dissemination of appropriate agricultural technologies as a package is of paramount

importance. Such a holistic approach could bring about positive changes in the livelihood of the society.

We believe that the first workshop that was organized in Addis Ababa under the theme "Poverty Reduction through Transforming Small holder systems from Subsistence to Market-oriented" was successful in identifying appropriate technologies, building partnerships among those responsible for research, training and deliver technologies to small holders, and importantly, gaining the essential support from all concerned.

To this end, we have obtained support from our partners in the CGIAR where professionals from ICARDA, IWMI and ICLARM sent their expertise to Addis Ababa to train our agricultural extension professionals.

This second exhibition and workshop also aims at bringing technologies to the attention of the research and development community. However, the exhibition, and in particular the workshop, will also pay attention to innovations in the enabling environment, puts new challenges in front of us.

We have also given considerable attention to non-technology requirements for development and to stimulate the private sector (including cooperatives) and public institutions. This has resulted, amongst others, a restructuring of our Ministry in which we now have promoted the Marketing and Input Supply sector to a state minister status. We have also given great emphasis the establishment of a new cooperative system which may assist in input supply, financing and marketing. We are also trying our level best to establish structures that promote export of selected commodities.

**Distinguished guests,
Ladies and gentlemen,**

We have the political will and commitment to keenly implement the considered recommendations of this workshop for accelerated but environmentally friendly and sustainable development.

We also would like your recommendations to find their way into the program of work for the "Improved Productivity and Market Success of Ethiopian Farmers" project. This project, which will officially be launched on Wednesday, is one of the "products" from the first technology exhibition/workshop.

At this juncture, we would like to express our heart-felt appreciation for all the support rendered by the Canadian (CIDA) for realization of the Improved Productivity and Market Success of Ethiopian Farmers Project.

Once again, this workshop is organised at a time when the FDRE has committed itself to poverty reduction and overall development. Thus, I can assure you that we are keen to implement our plans with diligence. We believe that, by doing so, we will be able to make better use of our natural resources for the benefit of our farmers and ultimately for the country as a whole. We also believe that your cooperation and assistance is a key to our successful achievements in ensuring sustainable agricultural development in Ethiopia.

Finally, I would like to extend special thanks to the organising team which comprises Ministry of Agriculture and Rural Development, ILRI and the many who rallied behind them to make this workshop a success.

I would also like to express my thankfulness for all members of the CGIAR system, governmental and non-governmental organizations and also private organizations which actively participated in this exhibition workshop.

Moreover, we expect to get important innovative and replicable findings from similar workshops that will be held every other year.

Wishing you successful deliberations, I declare this exhibition/workshop officially open.

Thank you.

Annex 4. List of technologies displayed during the Agricultural Technology Exhibition/Workshop, organised by ILRI and MoARD (June 28-29, 2004)

Name of institution	P.O. Box	Tel.	Technology	Remark
CGIAR System				
CIAT	5689	463215	Bean varieties	For increased income (<i>Pamphlets available</i>)
			Climbing beans	Food and income security
			Seed systems	Solving lack of bean seed for the commercial sector (<i>Pamphlets available</i>)
			Forage adoption and scaling up	Engage farmers and researchers to increased adoption (<i>Pamphlets available</i>)
			Enabling rural innovation	Framework for linking farmers to market and encourage investment on NRM (<i>Pamphlets available</i>)
AHI (African Highlands Initiative)	5689	463215	Methods to maximize systems productivity	Food, income and NRM (Modelling community negotiation) (<i>Pamphlets available</i>)
			Guidelines to integrated development (legumes)	Know where which technology works (Some publications available).
			Addressing land degradation	Establish steps needed to reverse land degradation, modelling and community action
			Enset systems	Manipulating soil fertility gradients in enset systems
ICRAF-RELMA (Nairobi, Kenya)	30677/63403	02/524000 02/524001	Rainwater harvesting	(<i>SearNet Vol. 4 and 5 Briefs available on rain water harvesting</i>)
			Market focussed watershed management	
			Enset processing	
			Rodent repellent terracing	
			Agroclimatic zone of Ethiopia	
			New thick bamboo	Could be used as a bee hive and house making (<i>Poster available</i>)
IWMI	5689	463215	Rainwater harvesting	
			Small scale irrigation and diversion scheme	
			Small scale water lifting technology	
			Multiple water use systems	

Name of institution	P.O. Box	Tel.	Technology	Remark
IITA	PMB 5320	(234 2) 241 2626 Nigeria	Cow pea, soya bean, cassava, maize and yam	Promotion of utilisation beyond the traditional use Commercialising the products
			Improved germplasm, NRM, Processing, utilization and marketing	Manuals could be obtained from IITA. (<i>A flier with a list of 50 different harvesting and post harvesting equipments available</i>).
ILRI-FGR	5689	463215	Different forage seeds and cuttings were displayed.	Briefs on some forage species available
ILRI-Dairy		339566	Different dairy products were displayed (Ghee, butter, cheese, and manual churner)	
ICIPE	5689	463215	Bee hives	
			Tse tse trap	
			NRM and sustainable develop..	
Private Sector				
TAM Private Extension Agency	759	601313	Forage seeds (alfalfa, desmodium, grasses), packed camamelle, pyrethrum, agroforestry	Will eventually start to contracting farmers for seed production
National Argricultural Research Systems (NARS):				
EARO-NSRC (National Soil Research Centre)	147	508300	Soil management	
			Site specific fertilizer recommendation	
			Bio-fertilizer	Pulses (faba bean, soya bean, rice and other cereals (<i>Pamphlet available</i>))
EARO-JARC	192	110367	Different coffee, spices, maize, tef, sorghum, beans, fruits, roots and tubers	Export and food security crops (<i>Booklet available</i>)
EARO EARO-Melkassa Research Centre			Different improved varieties of horticultural crops, cereals, legumes and cotton were displayed	Many types of improved crops researched by EARO and the regional research centres on display. The main aim was at food security and increased market (local and export).
	436	02/112186	Different improved varieties of fruits (oranges, pineapples, mandarin, papaya, banana, avocado, grape fruit, lemon and lime. Cassava, yam and other root crops.	
			Silk production using locally available plants like castor, but also mulberry	A flier available on silk production technique
SNRI-Areka Research Centre	79	06/552143	Enset starch, Bulla, glue, fibre	For industry and export (<i>Address of a private company processing starch chemicals and adhesive from enset available</i>)

Name of institution	P.O. Box	Tel.	Technology	Remark
EARO-Sebeta Animal Health Research	04	380894	External parasite control using herbal and conventional methods	(The diseases under this control methods were mange and cockne)
EARO-Sebeta Fisheries Research Centre	64	380023 (09-253163)	Integrated agriculture and aquaculture farming systems	
Holleta Bee Research Centre	22	370439	Two types of bee hives of Zandar type and Kenya top bar	
			Honey extractor	
			Propolis	The country has a 1000 ton production potential per year (current price is at 80 birr/kg)
OARI-Assela Rural Technology Centre	6	02/312492	Animal pulled implements	
			Mouldboard plough,	
			Spike tooth harrow	
			Wooden wheel barrow	
			Donkey pulled cart	
			Animal drawn cart	
			Maize sheller	
			Kocho scraper	
			Treadle pump	
			Civet cat cage	
			Civet cat trap	
			Hand operated maize sheller	
			Water powered flour mill	
ARARI/ILRI/EARO		339566	Goat genotype x nutrition. Export market oriented (meat).	Research underway at ILRI (<i>Flier on 'Targeting export market: Meat production of Ethiopian goat breeds.....' Available.</i>

Name of institution	P.O. Box	Tel.	Technology	Remark
Non Governmental Organizations (NGOs)				
Selam Technical School	8075	462942	Loom	
			Spinning loom	
			Wax printer	<i>Technical manual available</i>
			Butter churn	<i>Technical manual available</i>
			Concrete treadle pump	<i>Technical manual available</i>
			Concrete overflow pump	<i>Technical manual available</i>
			Metal treadle pump	<i>Technical manual available</i>
			Cattle waterer	
			Enset grater	Made by Selam and Sasakawa Africa Association (AAS) jointly.
			Slicer	“ “ “
			Groundnut sheller	“ “ “
			Wet grinding mill (oil extractor)	“ “ “ <i>Technical manual available</i>
			Manual oil presser	“ “ “
			Motorised maize sheller	“ “ “
			Motorised tef thresher with blower	“ “ “
			Animal drawn tef thresher	Currently under research
VOCA-Cooperative Development	548-1110	534650	Capacity building Agricultural cooperative development	Marketing, finance and credit. Organisation and management
			Rural saving and credit cooperative	A flier is available on the objectives of organization (Amharic)
SG 2000	12771	528502	Water harvesting	
			Drip irrigation and implementation	

Ministry of Agriculture and Rural Development

Addis Ababa, Ethiopia

PRESS RELEASE

June 28, 2004

A two-day agricultural technology exhibition organised by the Ministry of Agriculture and Rural Development, opened today at the International Livestock Research Institute (ILRI) in Addis Ababa.

More than 20 current technologies in livestock, fisheries, crop production and natural resource management are on display at the exhibition. Participating in the exhibition are local and international agricultural research institutes who are engaged in a continued process of identifying improved, adaptable and sustainable methods of production and processing for better lives and development. Among these are: the Ethiopian Agricultural Research Organization (EARO), TARI, OARI, ARARI, SARI) and NGOs as well as international organisations such as ILRI, CIAT, CIMMYT, ICRAF, ICRISAT, IWMI and ICIPE and World Fish Center.

More than 85% of the Ethiopian population depend on agriculture for their livelihood, and as such, agriculture is the foundation of the country's economy and the major contributing sector to food security. In recognition of this, the Government of Ethiopia has adopted the Agricultural Development-Led Industrialisation (ADLI) as a major policy framework for economic development. The Rural Development Strategy, which is part and parcel of the Sustainable Development and Poverty Reduction Strategy (SDPRS), aims at transforming agriculture from subsistence to small-scale commercial farming.

The technology exhibition aims to bring together, improved, adaptable, affordable, proven, cost-effective and environment-friendly agricultural technologies and display them by sector, thereby enabling better recognition of the various agricultural sectors and processes as well as a view of how each links with the other. It is expected that stakeholders that come to the exhibition will leave with better knowledge and know-how on new and potential technologies applicable to their individual situations.

The workshop officially opened today by of H.E. Ato Belay Ejigu, State Minister of Agriculture and Rural Development. Also present were ambassadors, representatives from the donor community and local and international organizations, as well as stakeholders.