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Ethiopian Institute of Agricultural Research

Livestock Research Directorate

Research Directory

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Contents

Case Team: Ruminant Livestock

Development of crossbred dairy cattle (50% Boran x Frisian) and associated production packages targeted for small holder farmers	1
Development of crossbred dairy cattle (using pure Jersey) and associated production packages targeted for small holder farmers	2
Development of high grade (75% crossbred) dairy cattle and associated production packages targeted for intensive and semi intensive production system	3
Development and promotion alternative production and value addition packages targeted for crossbred dairy or indigenous cattle in the hands of farmers	4
Development and of promotion of beef production technologies targeted for export and domestic market	8
Development and promotion of sheep production technologies targeted for export or domestic market	9
Development and promotion of goat production technologies targeted for export or domestic market	11
Development and promotion of camel production technologies	13
Development and promotion of forage technologies	14
Range land management and improvement	16

Case team: Poultry

Enhancing the genetic basis of the commercial layer industry through introduction of parent stock and development of associated packages of production technologies	17
Enhancing the genetic basis of the commercial broiler industry through introduction of parent stock and development of associated packages of production technologies	18
Improving productivity of indigenous breeds	19

Case Team: Apiculture and sericulture

Development and promotion of improved silk production technologies in Ethiopia	21
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Case Team: Fishery and Aquaculture Research

Selection and development of improved commercially important fish species	23
Enhancement and sustainable Utilization of Fish resources in major inland water bodies	24

Externally Funded Projects

Exploiting market opportunities for value added dairy and meat products in ECA Region	25
Strengthening germplasm collection regional capacity for forage seeds supply in ECA	26
Testing and validation of breed survey methodology, socioeconomics survey and characterization of selected indigenes cattle of ECA	26
Feeding value of flour from prosopis <i>juliflora</i> pods poultry, dairy and fattening rations	27
Designing community-based breeding strategies for indigenous sheep breeds of smallholders in Ethiopia	28

Case Team: Ruminant Livestock

Commodity: Dairy cattle (Holetta)

Project 1: Development of crossbred dairy cattle (50% Boran x Friesian) and associated production packages targeted for small holder farmers

Objective

To produce best performing 50 % Boran-Friesian dairy cows with associated health, nutrition, husbandry and associated technologies for smallholder dairy producers

Table 1 – List of activities in Project 1, Development of crossbred dairy cattle (50% Boran x Friesian) and associated production packages targeted for small holder farmers

Activities	Duration	Location	Center	Investigators	Expected Outputs
Crossbreeding and selection of dairy cows suitable for smallholder production systems	2008 - 2013	Holetta	Holetta	Molla Shumiye, Yohannes Gojjam	Improved genotype (50 % Boran x Friesian) with better merits (production, reproduction, health and feed conversion efficiency) and associated production and value addition packages appropriate for small holders developed
Management and utilization of cultivated forage crops as dairy feed	2008 - 2013	Holetta	Holetta	Fekede Feyissa, Muluneh Minta	Well adapted and productive forage crops for dairy animals identified
Development of Feeding Systems for Crossbred Dairy Cattle (Boran x Friesian)	2008 - 2012	Holetta	Holetta	Reherhie Mesfin, Mesfin Dejenie	Well adapted and productive forage crops for dairy animals identified
Chemical and microbial properties of milk obtained from project cows at Holetta and Adaberga	2009 - 2012	Holetta	Holetta	Rahel Nibuye, Firew Kassa	Chemical and microbial properties of milk under different management conditions obtained
Evaluation of male crossbred cattle produced in the breed improvement exercises for draft purposes under different feeding and management regime in combination with different farm implements	2007 - 2010	Holetta	Holetta	Mengistu Alemayehu, Tadesse Bekele	Use and level of traction performance of crossbred male animals under different management condition will be known
Demonstrating improved and promising dairy production technologies to smallholder producers	2008 - 2013	Holetta, Tikurenchieni, Jeldu, Welkitie, Adadie	Holetta,	Yohannes Gojjam, Belyu Limenehu	Information and dairy production technologies demonstrated and awareness created
Knowledge management and transfer on improved feed technologies and feeding systems	2008 - 2012	Holetta	Holetta	Muluneh Minta, Belyu Limenehu	Available production technologies reviewed, summarized and documented for users

Project 2: Development of crossbred dairy cattle (using pure Jersey) and associated production packages targeted for small holder farmers

Objective

To produce Jersey-Boran crossbred cows and associated production packages including feeding, health, husbandry suitable for small holder farmers

Table 2: List of activities in Project 2 - Development of crossbred dairy cattle (using pure Jersey) and associated production packages targeted for small holder farmers

Activities	Duration	Location	Center	Investigators	Expected Outputs
Genetic improvement of pure Jersey through selection & breeding for production of subsequent Boran-Jersey crossbred cattle suitable for smallholder production systems.	2008-2014	Adaberga	Holetta	Binyam Kassa, Molla Shumiye	Improved genotype (50 % Boran x Jersey) with better merits (production, reproduction, health and feed conversion efficiency) and associated production and value addition packages appropriate for small holders developed
Evaluation of different forage crops at Ada Berga.	2008-2013	Adaberga	Holetta	Tadesse T/tsadik, Fekede Feyissa	Well adapted and productive forage crops for dairy animals under Ada Berga condition identified
Management & utilization of cultivated forage crops as dairy feed.	2008-2013	Adaberga	Holetta	Fekede Feyissa, Muluneh Minta	Well adapted and productive forage crops identified and appropriate management practices developed
Reproductive herd health management.	2008-2014	Adaberga	Holetta	Tamirat Seyoum, Melese Eshete	Epidemiology of reproductive diseases at Ada Berga assessed and control measures recommended
Calf health problem identification & mgt. Intervention	2008-2014	Adaberga	Holetta	Aster Yohannes, Melese Eshete	Epidemiology of calf health problems at Ada Berga assessed and control measures recommended
Udder health problem identification & mgt. Intervention.	2008-2013	Adaberga	Holetta,	Aster Yohannes, Melese Eshete	Udder health problems will be identified and appropriate management and intervention strategies suggested
Internal and external parasite identification and management intervention	2008-2013	Adaberga	Holetta	Tamirat Seyoum, Melese Eshete	Important external and internal parasites affecting jersey animals identified and prevention and control options recommended
Post Harvest: Chemical & microbial properties of milk obtained from project cows.	2009-2014	Adaberga	Holetta	Firew Kassa, Binyam Kassa	Chemical and microbial properties of milk under different management conditions obtained
Evaluation of male crossbred cattle produced in the breed improvement exercise for draft purposes under different feeding & mgt. Regime in combination with different farm implements.	2009-2014	Adaberga	Holetta	Mengistu Alemayehu, Binyam Kassa	Use and level of traction performance of crossbred male animals under different management condition will be known
Knowledge management and transfer on improved feed technologies and feeding system	2008 - 2013	Adaberga	Holetta	Binyam Kassa, Molla Shumiye	Available production technologies reviewed, summarized and documented for users

Project 3: Development of high grade (75% crossbred) dairy cattle and associated production packages targeted for intensive and semi intensive production system

Objective

To produce high grade crossbred dairy cattle and associated technological packages including health, nutrition, husbandry and others to be used under intensive and semi intensive management conditions

Table 3 List of activities in Project 3, Development of high grade (75% crossbred) dairy cattle and associated production packages targeted for intensive and semi intensive production system

Activities	Duration	Location	Center	Investigators	Expected Outputs
Genetic upgrading of Boran - Friesian crossbred dairy cattle suitable for intensive and semi-intensive production system.	2008-2014	Holetta	Holetta	Molla Shumiye, Rehirahie Mesfin	Improved genotype (75 % Boran x Friesian /Jersey) with better merits (production, reproduction, health and feed conversion efficiency) and associated production and value addition packages appropriate for intensive and semi-intensive production system developed
Management and utilization of cultivated forage crops as dairy feed	2009-2014	Holetta	Holetta	Fekede Feyissa, Muluneh Minta	Well adapted and productive forage crops for dairy animals identified
Evaluation of high-grade cross-bred dairy cattle under different feeding regimes	2010-2013	Holetta	Holetta	Aemiro Kehaliew, Getu Kitaw	Productive and cost effective feeding strategies for dairy animals developed
Developing calf rearing management system suitable for high-grade dairy calves.	2009-2011	Holetta	Holetta	Tadesse Bekele, Reherahie Mesfin	Appropriate and cost effective management of high grade calves established
Rearing high-grade dairy heifers for optimum growth, reproduction and subsequent milk production	2010-2012	Holetta	Holetta	Tadesse Bekele, Reherahie Mesfin	Appropriate and cost effective rearing of high grade heifers developed
Evaluation of physiological and productive performance of high grade lactating dairy cows supplemented different sources of minerals	2011-2013	Holetta	Holetta	Reherahei Mesfin, Taddese Bekele	Limiting minerals in the diets of high grade dairy cows will be identified
Study of high grade Friesian dairy bull management	2011-2013	Holetta	Holetta	Tadesse Bekele, Mesfine Dejene	Appropriate management of high grade bulls established
Knowledge management and transfer on improved feed technologies and feeding systems	2009-2010	Holetta	Holetta	Reherahie Mesfin, Mesfin Dejenie	Available production technologies in high grade dairy cattle production reviewed, summarized and documented for users

Project 4: Development and promotion alternative production and value addition packages targeted for crossbred dairy or indigenous cattle in the hands of farmers

Objective

To develop and promote appreciate technological packages in feeding, husbandry, processing, husbandry and related practice to increase productivity of crossbred dairy and indigenous cattle in the hands of farmers

Specific objectives

- Generate information on proper management practices of native pasture;
- Generate Cost effective and robust technique of feed evaluation;
- Identify mineral status of major feed resources and develop area specific data base on mineral supplements;
- Develop feeding manual for different classes of animals and delivered to users;
- Develop feeding package options based on tagasaste, oats and vetch and grass-legume mixture;
- Generate information on production and disease resistance indigenous animals;
- Generate information on draft power of indigenous breeds under trips affected areas;
- Evaluate potentials of herbal medicine to control mastitis; and
- Develop protocol for estrus induction and synchronization for MOET

Table 4. List of activities in Project 4. Development and promotion alternative production and value addition packages targeted for crossbred dairy or indigenous cattle in the hands of farmers

Activities	Duration	Location	Center	Investigators	Expected Outputs
Multi-location evaluation of four multipurpose tree species for adaptability and fodder yield	2008 - 2011	Debre-zeit and its sub centers	Debrezeit	Solomon Mengistu, Driba Geleti	Well adapted and productive tree species identified
Multi-location evaluation of Sesbania macrantha accessions	2008 - 2011	Debre-zeit and its sub centers	Debrezeit	Solomon Mengistu, Driba Geleti	Productive Sesbania macranta accession selected
Multi-location evaluation of seed and herbage yield performance of Demeter Tall Fescue (<i>Festuca arundinacea</i> Schreb cv. Demeter) in south-eastern highlands	2008 - 2011	Kulumsa, Bekoji, Kofele and selected on-farm sites	Kulumsa	Tesfa Altaye, Karta Altaye	Areas in south eastern highlands suitable for growing tall fescue identified
Study on production and utilization status and prospects of oats in mixed farming systems of the central highlands	2008 - 2011	Selalie highlands in north shewa	Holetta	Fekede Feyissa, Muluneh minta	Information on prospects of oats in the central highlands available
Effect of forage legumes in supplying improved feed and its effect on subsequent crop in semi-arid areas	2008 - 2010	Mieso	Werer	Ashebire Kiflie, Werknesi seid, Berhanu Megersa	Productivity of forage legumes and their effect on follow up crops under semiarid conditions investigated
Micro-seed multiplication of promising forage species in different agro-ecologies	2008 - 2012	Holetta, Debre-zeit, Kulumsa, Malakasa, Werer, Pawe, Assosa and collaborating regional centers	All Centers	Researchers in respective centers	Seed for research and demonstration available
Assessment and synthesize of national demand and the current state of forage seed production and delivery system in Ethiopia	2008 - 2012	All appropriate regions through coordination by Holetta Research Center	Holetta	Fekede Feyissa, Getnet Assefa	Information on the demand and supply of forage seeds available
Improving productivity of natural pasture through over sowing of selected forage legumes in central highland areas	2009 - 2013	Selected highland areas under the supervision of Holetta	Holetta	Muluneh Minta, Tadesse T/tsadik	Information on proper management practices of native pasture generated
Improvement of natural pasture using different agronomic management practices including fertilization, weed control, harvesting stages and conservation methods	2009 - 2013	Selected highland areas under the supervision of Holetta	Holetta	Muluneh Minta, Tadesse T/tsadik	Information on proper management practices of native pasture generated

Table 4 continue... List of activities in Project 4. Development and promotion alternative production and value addition packages targeted for crossbred dairy or indigenous cattle in the hands of farmers

Activities	Duration	Location	Center	Investigators	Expected Outputs
Crop residue management and utilization as dairy feed	2009 - 2013	Holetta and selected dairy belt areas	Holetta	Muluneh Minta, Fekede Feyissa	Information on crop residue management and utilization available
Evaluation of Near Infrared Spectroscopy Method for Characterizing Nutritive Value of Feed Resources	2008 - 2011	Holetta	Holetta	Dereje Fekadu, Getu Kitaw	Cost effective and robust technique of feed evaluation to respond to customers need developed
Development of Feeding Manual Based on Available Data Base for Different Classes of Ruminant Livestock	2009 - 2011	Holetta	Holetta	Tadesse Daba, Derje Fekadu	Feeding manual developed for different classes of animals and delivered to users
Assessment of the Mineral Status of Major Feed Resources	2009 - 2010	Holetta	Holetta	Tadesse Daba, Derje Fekadu	Mineral status of major feed resources identified , data base developed and area specific mineral supplements developed
Intake and performance of local dairy cows supplemented with different levels of tagasaste (<i>Chamaecytisus palmensis</i>), fed a basal diet of native hay	2008 - 2011	Holetta	Holetta	Aemiro Kehaliew, Getu Kitaw	Feeding package options based on tagasaste, oats and vetch and grass-legume mixture developed
Evaluation of the Replacement Effects of Processed Poultry Litter on the Performance of Lactating Cow	2008 - 2010	Debrezeit	Debrezeit	Kassahun Melesse Adey Melesse	Information on Feeding value, of poultry litter as supplement to dairy cows available
Assessment of hygienic conditions of milk and milk products during production, processing and handling	2008 - 2011	Holetta, Selale, Debre Birhan, Debre Zeit, and Asella	Holetta	Firew Kassa, Rahel Nebiyu	Information on milk hygiene during production and processing available
Assessment of the chemical and microbial qualities of milk during production, processing and handling in different parts of Ethiopia	2008 - 2011	Holetta, Selale, Debre Birhan, Debre Zeit and Asella	Holetta	Firew Kassa, Rahel Nebiyu	Information on quality of milk during production and processing under farmers conditions available
Assessment of traditional fermented milk products on smallholder farms, local markets and cooperatives in the study areas	2008 - 2011	Holetta, Selale, Debre Birhan, Debre Zeit and Asella	Holetta	Firew Kassa, Rahel Nebiyu	Information on quality of fermented milk during production and processing under farmers conditions available
Isolation and identification of lactic acid bacteria from fermented milk products using both conventional and molecular techniques	2008 - 2011	Holetta, Selale, Debre Birhan, Debre Zeit and Asella	Holetta	Rahel Nibuye, Firew Kassa	Preliminary information on lactic acid bacteria in the traditional fermented milk acquired

Table 4 continue... List of activities in Project 4. Development and promotion alternative production and value addition packages targeted for crossbred dairy or indigenous cattle in the hands of farmers

Activities	Duration	Location	Center	Investigators	Expected Outputs
Evaluation of desirable pure cultures of lactic acid bacteria for the production of different fermented milk products under controlled fermentation condition	2010 - 2013	Holetta Research Center	Holetta	Rahel Nibuye, Firew Kassa	Performance of pure cultured lactic acid bacteria evaluated
Protocol development /Optimization for oestrus induction and synchronization	2009 - 2011	Debre Zeit and Holetta	Debre Zeit, Holetta	Tamirat Degefa, Aster Yohannes	Protocol for estrus induction, synchronization and (MOET) developed/optimized
On-farm demonstrations of improved feed production	2009 -2012	Selected dairy belt areas	Holetta	Fekede Feyissa, Tadesse T/Tsadik	Productive forage species demonstrated to smallholder farmers
Evaluation and demonstration of selected forage crops for smallholder dairy production systems		Smallholder dairy production farmers around Holetta, Debrezeit, Kulumsa	Holetta	Fekede Feyissa, Tadesse T/Tsadik	Performance of selected forage crops under farmers condition evaluated and demonstrated to smallholder farmers
On-farm evaluation of different forage grasses and legumes under irrigation	2007 - 2010	Werer, Gewane and Afambo	Werer	Ashebire Kiflie, Werknesi seid, Berhanu Megersa	Information on performance of selected grasses and legumes under irrigation available
On- farm evaluation of feeding system based on oats-vetch hay and concentrate supplementation for cross-bred dairy cows.	2008 - 2011	Selected wereda and Kebeles of North and West Shewa Zones	Holetta	Aemiro Kehaliew Getnet Assefa	Feeding value manual developed for different classes of animals and delivered to users
Least Cost Production and On-Farm Evaluation of Multi-Nutrient Block for Ruminants	2008 - 2011	Holetta and selected dairy belt areas	Holetta	Getu Kitaw and Mesfine Dejjene	Least cost ingredients for making quality multi-nutrient block identified
On farm demonstration and promotion of nutritional interventions based on multi-nutrient block and sources of escape N targeted for lactating cross-bred dairy cows and fattening cattle.	2008 - 2012	North, west and south west Shewa (Weliso)	Holetta	Mesfine Dejjene and Getu Kitaw	Utilization of multi-nutrient block as a supplement for lactating cows evaluated under on farm condition and demonstrated to farmers
Review and synthesis of past research works and achievements in forage and pasture and extraction of usable communication materials	2009 - 2012	All centers	Holetta	Aemiro, Kehaliew, Firew Kassa, Solomon Mengistu, Aster Yohannes	Available information and technologies in general livestock production reviewed, summarized and documented for users

Commodity: Beef cattle (Adami -Tulu)

Project 5: Development and of promotion of beef production technologies targeted for export and domestic market

Objectives

- To avail Information on feeding options and most economical feeding system for different age groups and breeds of beef cattle to attain the required market weight of 300kg;
- Generate information on carcass characteristics of beef cattle under different feeding options;
- Study cattle production system in selected regions (Afar) in detail and avail information on possible fattening technology packages specific to the area;
- To demonstrate and verify beef production technologies under beneficiaries situation; and
- To document available information and identify research gaps in beef production

Table 5 List of activities in Project 5. Development and of promotion of beef production technologies targeted for export or domestic market

Activities	Duration	Location	Center	Investigators	Expected Outputs
Evaluation of feeding options for different breeds of beef cattle to attain export market weight	2008 - 2013	Adamitulu	Adamitulu	Tesfaye Alemu T Feyissa Hndiesa	Cost effective feeding option for beef cattle developed
Past meat improvement research technology documentation	2010 - 2011	Adamitulu	Adamitulu	Tesfaye Alemu T Feyissa Hundiessa	Available technologies in beef cattle production reviewed, summarized and documented for users
Evaluation and demonstration of forage based cattle fattening technologies at irrigable areas of Fentale district	2008 - 2011	Fentale	Adamitulu	Tesfaye Alemu T Feyissa Hundiessa	Forage based fattening in irrigable areas evaluated and demonstrated under farmers condition
Study on cattle management practices and marketing in Afar region	2009 - 2010	Afar	Werer	Woldegbriel Tesfamariam, Yibrha Yacob, Tesfaye Alemu T	Cattle production system in Afar region known in detail and information on possible fattening technology packages specific to each area documented
Onfarm demonstration of urea treated crop residues based cattle fattening technologies to woman household headed farmers around Bako and Gode	2008 - 2010	Bako & Gode	Bako	Tesfaye Tadesse Tesfaye Alemu T	Biological performance and farmers reaction towards promising technologies documented
verification of cattle finishing technology in the area surrounding Guder town	2008 - 2010	Bako	Bako	Tesfaye Tadesse Tesfaye Alemu T	Beef production technologies under beneficiaries situation verified & demonstrated

Commodity: Sheep (Debre Berhan)

Project 6: Development and promotion of sheep production technologies targeted for export or domestic market

Objectives

- To determine the response of Afar and Blackhead Somali male lambs to intensive or semi intensive feeding and optimum economic level of feeding;
- To evaluate the effect of pre and post partum feeding management on Afar and Blackhead Somali ewes and lambs reproductive performance (conception rate kidding rate, kid birth weight, etc);
- To quantify the effect of inter se mating of F1 Awassi x Menz and to develop synthetic breed;
- Generate information on alternative use of better indigenous sheep breeds (Bonga and Washera) other than exotic breed;
- To evaluate the effects of handling and transport on live weight, carcass color and shelf life and the condition of animal welfare in meat export industry;
- To assess the influences of price incentives on sheep export market supply and to avail recommendations for policy makers and the private sector to take the necessary measures; and
- To document existing sheep production technologies and identify research gaps

Table 6 List of activities in Project 6. Development and promotion of sheep production technologies targeted for export or domestic market

Activities	Duration	Location	Center	Investigators	Expected Outputs
Evaluation of the performance of inter se mated 50% Awassi x Menz crossbred sheep	2008 -2012	Debreberhan	Derbreberhan	Solomon Gizaw	Effect of inter se mating of F1 Awassi x Menz quantified and synthetic breed developed
On-station evaluation of the reproductive performance of Menz sheep with their F1 and 75% crosses with Washera and Bonga sheep breeds	2008 -2012	Debreberhan	Derbreberhan	Solomon Gizaw	Information on alternative use of better indigenous sheep breeds (Bonga and Washera) other than exotic breed generated
Development of Elite Nucleus Flocks and Model Sheep Breeding Villages for Menz Sheep	2008 -2012	Debreberhan	Derbreberhan	Solomon Gizaw	Nucleus herds for selected sheep breeds developed
Adaptation and evaluation of dorper sheep at werer	2008 -2012	Werer	Werer	Yibra Yakob , Woldegebriel Tesfamariam	Dorper sheep breed evaluated for its performance and adaptation in Werer areas
Determination of diets meeting export market weight under intensive systems for Afar and Blackhead Somali sheep	2008 - 2010	Debreziet	Debreziet	Getahun Kebede Addisu Abera	The response of Afar and Blackhead Somali male lambs to intensive or semi intensive feeding and optimum economic level of feeding determined
Determination of diets meeting export market weight under semi-intensive systems for Blackhead Somali and Afar sheep	2008 - 2010	Werer and Jijiga	Werer and Jijiga	Yibra Yakob, Mehamed Mohamud, Addisu Abera, Ahmed Tieb	The response of Afar and Blackhead Somali male lambs to intensive or semi intensive feeding and optimum economic level of feeding determined
Effect of pre-and post partum feeding management on ewe reproductive efficiency and subsequent offspring, growth and survival of Blackhead Somali and Afar lambs before and after weaning	2009 -2011	Werer	Werer	Yibra Yakob, W/Gebriel Tesfamariam	The effect of Pre and post partum feeding management on Afar and Blackhead Somali ewes and lambs determined.

Table 6 continue... List of activities in Project 6. Development and promotion of sheep production technologies targeted for export or domestic market

Activities	Duration	Location	Center	Investigators	Expected Outputs
Study on major health problems that causes Sheep carcass condemnation at export abattoirs	2009 - 2010	Debr-Zeit (Abattoir), Negele, Yabelo, Alidege and Bati.	Debreziet	Getahun Kebede Tamirat Degefa Addisu Abera	Major health problems causing carcass condemnation identified
Study on meat sheep handling and transport by Export abattoirs	2009 - 2010	Debr-Zeit (Abattoir), Negele, Yabelo, Alidege and Bati	Debreziet	Getahun Kebede Addisu Abera	Effects of handling and transport on live weight, carcass color and shelf life and the condition of animal welfare in meat export industry known
Assessment of factors influencing the supply response of sheep export markets to price incentives in Ethiopia	2009 -2011	Debrezeit	Debreziet	Tesfaye Tadesse Tesfaye Alemu T	Information on influences of price incentives on sheep export market supply generated
On-farm flock productivity monitoring in Afar sheep production	2009 -2011	Werer	Werer	Yibra Yakob, W/Gebriel Tsfamariam	Existing sheep production technologies assessed, documented and research gaps identified
Past sheep meat production research technology review synthesis	2009 -2011	Werer	Werer	Solomon Gizaw, Yibrha Yakob Getahun Kebede	Available technologes in sheep production reviewed, summarized and documented for users

Commodity: Goat

Project 7: Development and promotion of goat production technologies targeted for export or domestic market

Objectives

- To determine the response of Afar, long eared Somali and Gumuz/Arab goats in terms of growth and carcass merits to semi-intensive type of feeding management systems (with locally available feed supplements after grazing);
- Determine the effect of pre partum and post partum feeding management on reproductive and growth performance of Afar, long eared Somali and Gumuz/Arab dam and does;
- To avail genetically improved Arsi-Bale goats;
- To evaluate the effects of handling and transport on live weight, Carcass color and shelf life and the condition of animal welfare in meat export industry;
- To generate flock productivity information on Afar and Arsi-Bale goat under pastoral and smallholder situations;
- To avail information on factors affecting the response of goat export market supply to price for policy makers and the private sector to take the necessary measures;
- To assess major health problems associated with carcass condemnation; and
- To document existing goat meat production technologies and identify research gaps known for future research interventions

Table 7 List of activities in Project 7. Development and promotion of goat production technologies targeted for export or domestic market

Activities	Duration	Location	Center	Investigators	Expected Outputs
Genetic selection of Arsi-Bale goats for improved body weight using open nucleus breeding system at Adami-Tulu	2008 -2013	Adami Tulu	Adami Tulu	Tesfaye Alemu	Genetically improved Arsi-Bale goats will be availed
Determination of diets meeting export market weight under semi-intensive systems for Afar, Long eared Somali and Gumuz/Arab goats	2009 -2011	Jijiga	Jijiga	Sisay Tilahun, Awes Haji,	The response of Afar, long eared Somali and Gumuz/Arab goats to semi-intensive type of feeding management systems will be determined in terms of growth and carcass merits
Determination of diets meeting export market weight under semi-intensive systems for Afar, Long eared Somali and Gumuz/Arab goats	2009 -2011	Werer	Werer	W/Gebriel Tesfamariam, Yibrha Yakob	Least cost and economically optimum feeding strategies developed for goats under semi intensive management condition
Effect of pre- and post partum feeding management on doe reproductive efficiency and subsequent offspring growth and survival of Afar, Long eared Somali and Gumuz/Arab goats before and after weaning	2008 -2012	Jijiga	Jijiga	Sisay Tilahun, Awes Haji,	Information on pre and post partum feeding management on Afar, long eared Somali and Gumuz/ Arab dam and does available
Effect of pre- and post partum feeding management on doe reproductive efficiency and subsequent offspring growth and survival of Afar, Long eared Somali and Gumuz/Arab goats before and after weaning	2008 -2012	Werer	Werer	Yibrha Yakob , W/Gebriel Tesfamariam,	Information on pre and post partum feeding management on Afar, long eared Somali and Gumuz/ Arab dam and does available

Table 7 continuedList of activities in Project 7. Development and promotion of goat production technologies targeted for export or domestic market

Activities	Duration	Location	Center	Investigators	Expected Outputs
Effect of pre- and post partum feeding management on doe reproductive efficiency and subsequent offspring growth and survival of Afar, Long eared Somali and Gumuz/Arab goats before and after weaning	2008 -2012	Assosa	Assosa	Yilema Tadesse Workneh Tezera Yohannes Equar	Information on pre and post partum feeding management on Afar, long eared Somali and Gumuz/ Arab dam and does available
Assessment of Factors influencing the supply response of goat export markets to price incentives in Ethiopia	2008 -2010	Debr-Zeit abattoir, Negele, Yabelo, Alidege and Bati	Debr-Zeit	Getahun Kebede Addisu Abera	Information on factors affecting the response of goat export market supply to price will be available for policy makers and the private sector to take the necessary measures
On-farm flock productivity monitoring on Afar goat production	2009 - 2010	Werer	Werer	Yibrha Yakob W/Gebriel Tesfamariam,	Flock productivity information on Afar goats under pastoral and smallholder situation will be generated
On-farm flock productivity monitoring in Arsi-Bale goat production	2009 - 2010	AdamiTulu	AdamiTulu	Tesfaye Alemu T	Flock productivity information on Arsi-Bale goats under pastoral and smallholder situation will be generated
Past goat meat production research technology review synthesis	2009 - 2010	Werer, Adami-Tulu, Jijiga Research Centers, EIAR, HHawassa, Haramaya, and Mekele Universities, ILRI and different NGOs	Werer	Sisay Tilahun W/Gebriel Tesfamariam, Getahun Kebede	Available technologies in goat production reviewed, summarized and documented for users

Commodity: Camel

Project 8. Development and promotion of camel production technologies

Objectives

- To avail baseline information on camel disease, calf mortality and etiology of camel abortion based pastoralist's perception and develop recommendations for possible means of prevention and control;
- Generate information on potential of mineral deficiencies and sufficiency in camel diets and recommend area specific mineral supplements; and
- To document existing camel production technologies and identify research gaps known for future research interventions

Table 8. List of activities in Project 8. Development and promotion of camel production technologies

Activities	Duration	Location	Center	Investigators	Expected Outputs
Major camel health problems in camel producing areas of Ethiopia	2009 -2011	Werer, Haramaya University	Werer	Mohamed Kurtu, Mandefro Aynalm	Information on major camel disease available
Epidemiological study of recent sudden death of camels in pastoral areas of Ethiopia.	2009 -2010	Werer	Werer	Mandefro Aynalm	Information on the epidemiology of current sudden death of camels available
Assessment of some critical mineral elements in diet, serum and non conventional mineral supplement of camel in eastern Ethiopia	2009 -2011	Haramaya University	Haramaya	Mohamed Kurtu	Information on mineral nutrition of camels known
Past camel research technologies / information review synthesis	2009 -2011	Were, Haremaya	Haremaya	Mohamed Kurtu, Mandefero Aynalem	Available technologies in camel production reviewed, summarized and documented for users

Commodity: Forage crops (Holetta)

Project 9: Development and promotion of forage technologies

Objective

To develop superior forage species and varieties and their accompanied production technologies for herbage and seed production in the different agro- ecologies and production systems

Specific objectives

- To develop and promote forage species/accessions with superior performance and associated production package into the farming system in different agro-ecologies to avert feed scarcity;
- To multiply initial seeds of selected forage species in different agro-ecologies and to make available for subsequent research and forage development works and assess the national demand for forage seed and design seed production schemes and delivery mechanisms; and
- To generate information on major determinants for the adoption of improved forage crops in different production systems and facilitate knowledge management/ transfer on improved forage and pasture technologies

Table 9 List of activities in Project 9 - Development and promotion of forage technologies

Activities	Duration	Location	Center	Investigators	Expected Outputs
Advanced screening of Tagasaste (<i>Chameacystis palmensis</i>) for fodder and seed production in the central highland areas of Ethiopia	2008 - 2010	Holetta, Kulumsa, Jeldu	Holetta,	Muluneh Minta, Fekede Feyissa, Tesfa Altaye	Well adapted and productive tagasaste accession identified
Evaluation of sorghum collections/lines/ to develop forage sorghum varieties for mid altitude areas	2007 - 2010	Melkasa	Melkasa	Asheber Tegegn	Forage sorghum varieties for mid altitude areas identified
Selection of cowpea collections/lines to develop varieties of forage type for mid altitude areas	2007 - 2010	Melkasa	Melkasa	Asheber Tegegn	Productive cow pea varieties for mid altitude areas identified
Adaptation and evaluation of different forage species at Assosa Research Center	2008 - 2010	Assosa	Assosa	Alemayehu Abebe, Yilema Tadesse	Well performing forage species around Asosa selected
Characterization and evaluation of indigenous grass species of Metekel zone	2009 -2010	Pawe	Pawe	Ferede Alemu, Bayensagn Worku	well performing forage species around Asosa selected indigenous grass Around Metekel area selected
Study on appropriate fertilizer management for improved seed and forage productivity of fodder beet (Beta vulgaris) in the highlands	2008 - 2010	Holetta, Jeldu, Kulumsa	Holetta, Kulumsa	Muluneh Minta, Fekede Feyissa, Tesfa Altaye	Information on the response of fodder beet performance to fertilizer application available

Table 9 continue List of activities in Project 9 - Development and promotion of forage technologies

Activities	Duration	Location	Center	Investigators	Expected Outputs
Effect of harvesting time and seeding rate on yield and quality grass seed	2008 - 2010	Werer	Werer	Ashebire Kiflie, Werknesi seid, Berhanu Megersa	information on the management selected grasses seed production available
Screening of native and exotic grasspea (Lathyrus sativus L.) accessions for herbage yield	2008 - 2011	Debre-zeit	Debre-zeit	Solomon Mengistu, Driba Geleti	Well performing forage type grass pea variety identified
Verification of selected V. sativa accessions for the highland vertisol areas	2009 -2011	Ginchi, Dz, Kulumsa	Holetta	Fekede Feyissa, Solomon Mengistu, Tesfa Altaye	Selected Vicia sativa varieties verified
Characterization and documentation of indigenous forage grasses	2009 -2011	Werer, Pawe	Werer, Pawe	Ferede Alemu, Alemayehu Abebe	Information on the characteristics of native grass species documented
Multi-location variety trial of different forage grasses under irrigation	2009 -2011	Werer, Afambo, Gewane	Werer,	Ashebire Kiflie, Werknesi seid, Berhanu Megersa	information on the performance of selected grasses under irrigation available
Demonstration of Cowpea variety	2009 -2011	Pawe	Pawe	Ferede Alemu, Bayensagn Worku	productive grass pea varieties demonstrated to farmers
Demonstration of tropical grass variety (Rhodes and Andropogon)	2009 -2011	Pawe	Pawe	Ferede Alemu, Bayensagn Worku	Rhodes and andropogon grass demonstrated
Evaluation and demonstration of selected forage crops for smallholder dairy production systems	2009 -2013	Jeldu, Ginchi, Tikur-enchni	Holetta	Fekede Feyissa, Tadesse T/Tsadik	Different forage crops demonstrated to smallholder farmers
Effect of forage legumes in supplying improved feed and its effect on subsequent crop in semi-arid areas	2009 -2012	Werer	Werer	Ashebire Kiflie, Werknesi seid, Berhanu Megersa	information on the effect of forage legumes to be used as a break crop in cereal production systems available
Demonstration of haymaking in Metekel zone	2009 -2010	Pawe	Pawe	Ferede Alemu, Bayensagn Worku	Making of hay demonstrated to farmers
Evaluation of commercial alfalfa varieties for their adaptation, biomass yield and forage quality	2009 -2011	Debrezeit, Holetta, Werer, Kulumsa, Melkassa	Debrezeit, Holetta, Werer, Kulumsa, Melkassa	Fekede Feyissa, Solomon Mengistu, Tesfa Altaye, Berhanu Megersa, Ashebire Tegegne	Well adapted and productive alfalfa varieties for the different areas identified

Commodity: Rangelands

Project 10. Range land management and improvement

Objectives

- To identify options for degraded and wasted rangelands to improve drought period fodder production and conservation;
- To assess, characterize and document rangeland vegetation types, production systems, indigenous knowledge and technologies;
- To generate information on the impacts of interactions between climate/rangeland and livestock for early warning systems in pastoral areas of Ethiopia; and
- To document the available information and identify research and development gaps in range management in Ethiopia

Table 10. List of activities in Project 10. Range land management and improvement

Activities	Duration	Location	Center	Investigators	Expected Outputs
Review and synthesis of past rangeland research activities for extraction of usable technologies/best practices	2009 - 2011	SNNP & Afar	Yabello, A/Tulu, Melkasa, Werer, Haramaya	Ameha kassahun, Kidanie G/Meskel, Abule Ebro, Samuel Tuffa	Available technologies in range land production system, assessment and rehabilitation reviewed, summarized and documented for users
Study on the interaction/relationships of climate, livestock and rangelands	2008 - 2013	Afar, Oromia, Somalia & SNNP	Yabello, Jigiga, Werer, Melkasa and A/tulu	Ameha kassahun, Berhanu Megersa, Abule Ebro, Samuel Tuffa	Information on livestock-climate interaction in the rangelands available
Adaptation and performance evaluation of indigenous spineless Opuntias under degraded rangeland condition	2008 - 2013	Oromia & Afar	Melkasa	Ameha kassahun, Kidanie G/Meskel, Abule Ebro, Samuel Tuffa	information on performance of spineless cactus in the rangelands available
Study on land cover/use changes and soil seed bank characteristics of grazing lands in Kereyu-Fantale and Adami Tulu Jiddo Kombolcha districts	2009 - 2011	Fantale & A/Tullu	A/Tulu	Ameha kassahun, Berhanu Megersa, Abule Ebro, Samuel Tuffa	Information on soil seed bank status and land use changes available
Study on methods of bush/shrub control in the Ethiopian rangelands	2008 - 2013	Borena & Shinile	Yabello	Ameha kassahun, Kidanie G/Meskel, Abule Ebro, Samuel Tuffa	Bush control strategies developed
Study on methods of improving degraded rangelands in Ethiopia (Over sowing with grass species with or without mulching and dung)	2008 - 2013	Borena & middle Awash	Yabello and Werer	Ameha kassahun, Kidanie G/Meskel, Abule Ebro, Samuel Tuffa	information on performance of oversown grass and application of dung in the range lands available
Investigating the impact of rangeland rehabilitation practices on plant biodiversity	2008 - 2011	Shinile	Haramaya	Ameha kassahun, Kidanie G/Meskel, Abule Ebro, Samuel Tuffa	Information on the impact of range land rehabilitation on biodiversity available
Study on pastoral production systems and appropriate development interventions in Ethiopia	2008 - 2011	Oromia, Afar, Somalia and SNNP	Semera, Yabello, Jinka, Jigiga	Ameha kassahun, Kidanie G/Meskel, Abule Ebro, Samuel Tuffa	Information on pastoral production systems available and intervention options suggested

Case Team: Poultry

Commodity: Poultry

Project 1: Enhancing the genetic basis of the commercial layer industry through introduction of parent stock and development of associated packages of production technologies

Objectives

General

- Poverty reduction through income generation and fetching hard currency through export of poultry products; and
- Food self sufficiency by alleviating animal protein shortage

Specific

- To enhance genetic base of commercial layer industry through introduction of commercial layer breeds; and
- To evaluate promising poultry technologies on-farm

Activity	Duration	Location	Responsibilities		Expected Outputs
			Center	Investigator	
Introduction and evaluation of commercial layers parent stock focusing on evaluation under standard regimens on research station conditions	2001-03	Debre Zeit	DRC	Wondmeneh E., Dawui I., Meskerem A.	<ul style="list-style-type: none"> • Part production performance of the breeds will be known • Adaptability of the breeds to our environment will be known
Evaluation of different feed formulations for layers: survey on the Identification of alternative feed ingredients and evaluation of chemical composition to develop associated feed technology for the hybrid layer	2001-03	Debre Zeit	DRC	Wondmeneh E., Dawui I., Meskerem A.	Different non conventional feed ingredients will be identified, rations formulated and tested

Project 2: Enhancing the genetic basis of the commercial broiler industry through introduction of parent stock and development of associated packages of production technologies

Objectives

General

- Poverty reduction through income generation and fetching hard currency through export of poultry products; and
- Food self sufficiency by alleviating animal protein shortage

Specific

- To enhance genetic base of commercial broiler r industry through introduction of commercial broiler breeds; and
- To evaluate promising poultry technologies on-farm

Activity	Duration	Location	Responsibilities		Expected Outputs
			Center	Investigators	
Introduction and evaluation of commercial broiler parent stock focusing on evaluation under standard regimens on research station conditions	2001-03	Debre Zeit	DRC	Wondmeneh E., Dawui I., Meskerem A.	Part production performance of the breeds will be known Adaptability of the breeds to our environment will be known
Evaluation of different feed formulations for broilers: survey on the Identification of alternative feed ingredients and evaluation of chemical composition to develop associated feed technology for the hybrid layer	2001-03	Debre Zeit	DRC	Wondmeneh E., Dawuid I., Meskerem A.	Different non conventional feed ingredients will be identifies, rations formulated and tested

Project 3: Improving productivity of indigenous breeds

Objectives

General

- Poverty reduction through income generation and fetching hard currency through export of poultry products; and
- Food self sufficiency by alleviating animal protein shortage

Specific

- To establish a horro flock for future breeding work

Activity	Duration	Location	Responsibilities		Expected Output
			Centers	Investigators	
<i>Establishment of local horo stock for upgrading with imported female parent</i>	2001-03	Debre Zeit	DRC	Wondmeneh E., Negussie D.	Critical number of horo chickens for future breeding work will be established
<i>Study on the immune modulatory effect of Effective Microorganisms® in local chickens for possible improvement for disease resistance</i>	2001-02	Debre Zeit	DRC	Wondmeneh E.	the immune competence level of <i>Horo ecotype</i> will be known and the Immune potentiating effect of EM supplementation will be known

Project 4: Development and promotion of promising poultry production technologies

Objectives

General

- Poverty reduction through income generation and fetching hard currency through export of poultry products; and
- Food self sufficiency by alleviating animal protein shortage

Specific

- To demonstrate Fayomi breed at Jijiga, Werer, Assosa and Gambella; and
- To introduce small scale commercial egg production using Fayomi breed in developing regions (Jijiga, Werer, Assosa and Gambella)

Activity	Duration	Location	Responsibilities		Expected Output
			Centers	Investigators	
On-farm evaluation and promotion of selected package of hybrid layer production technologies:					
<i>Demonstration of Fayoumi breed at Werer, Assosa, Gambella and Somali</i>	2001-03	<i>Werer, Assosa, Gambella and Somali</i>	DRC	Wondmeneh E., Negussie D.	Critical number of horo chickens for future breeding work will be established
<i>Demonstration of cheap and locally made poultry feed technologies</i>	2001-02	Pawe	DRC	Wondmeneh E.	the immune competence level of <i>Horo ecotype</i> will be known and the Immune potentiating effect of EM supplementation will be known
<i>Promotion of verified poultry technology packages: 100 Bovan layer package</i>		Shashemene	DRC	Emebet M., Sultan A.,	Farmers will be introduced with a 100 Bovan layer package and will be transformed to small scale poultry production.
<i>On-farm evaluation of locally made protein balancer used in Broiler diets</i>		Modjo	DRC	Emebet M. Sultan A., Wondmeneh E.	The effect of locally made balancer on the performance of broilers kept under farmers condition will be evaluated, and economic benefit will be known
On-farm evaluation of Effective Microorganisms in broiler diets		Modjo	DRC	Emebet M. Sultan A., Wondmeneh E.	the advantage of EM usage under farmers condition will be known
Assessment of existing poultry technologies and coping mechanisms: feed and health					
<i>survey on the existing feed technologies and evolving coping mechanisms</i>		Kombolcha, Assosa, Werer, Jimma, Haromaya, Hawasa and Mekele	DRC	Meskerem A., Dawit, Mamo M., Etalem T., Emebet M.	existing feed technologies and coping mechanisms will be identified
<i>Survey on the challenges of existing poultry health technology and ethno-vet practices</i>		Kombolcha, Assosa, Werer, Jimma, Haromaya, Hawasa and Mekele	DRC	Meskerem A., Dawit, Mamo M., Etalem T., Emebet M.	the challenges of existing poultry health technologies will be assessed and compiled

Case Team: Apiculture and sericulture

Commodity: Sericulture

Project: Development and promotion of improved silk production technologies in Ethiopia

Objectives

General

To develop and promote improved technologies of silk for sustainable production and improved productivity thereby, promote agro industry development, contribute to food security and maintain natural resources across different agro ecologies of the country

Specific

- To select and develop adaptable, high yielding and pest resistant silkworm races with acceptable silk quality;
- To select and develop adaptable, high yielding and pest resistant silkworm feed plant varieties;
- To find out appropriate silkworm rearing, moutage performance and cocoon boiling practices;
- To determine appropriate cultural practices for castor cultivation to eri silk worm production;
- To identify diseases, insect pests and their natural enemies for castor and mulberry plants;
- To train and demonstrate silk production technologies to stakeholders;
- To create awareness ,promote and scale up improved silk production technology for wider impact;
- To maintain quality parent silkworm seed and hybrid for commercial production; and
- To identify the major constraints and opportunities in the production and marketing of silk

Activity	Duration in	Location	Responsibilities		Expected Outputs
			Centers	Investigators	
Development of high yielding and pest resistant silkworm varieties with acceptable silk quality	2001-2005	Melkassa , Hawassa , Jimma & Alagae	Melkassa , Hawassa & Jimma .	Abiy, Kedir, Ahmed, Metasebia	Two silk worm races possessing high cocoon yield and acceptable silk quality developed during 2005 E.C
Development of high yielding and pest resistant silkworm feed crop varieties	2001-2005	Melkassa, Hawassa, Bako, Jimma and Alagae	Melkassa, Hawassa, Bako, Jimma	Abiy, Kedir, Metasebia, Ahmed,	Two silk worm feed plant varieties possessing high yield and palatability for silk worms developed during 2005 E.C
Development of improved silkworm worm rearing and management practices	2002-2004	Melkassa	Melkassa	Abiy, Kedir, Ahmed, Metasebia	Packages of appropriate silk worm rearing and management and post harvest handling technologies established by 2004 E.C
Silkworm feed plants variety maintenance/renewal	2001-2005	Melkassa	Melkassa	Abiy, Kedir, Metasebia, Ahmed,	Mulberry and castor germplasms /lines will be maintained for future research works (yield, pest resistance, etc.)
determination of appropriate cultural practices (spacing, planting and leaf harvesting dates) for castor cultivation for eri	2002-2004	Melkassa	Melkassa	Abiy, Kedir, Metasebia, Ahmed,	Packages of appropriate cultural practices for silk worm feed plants established by 2005

silk production					
survey for identification of disease, insect pests and their natural enemies for castor and mulberry plants	2001-2003	Melkassa, Hawassa, Bako, Adet, Jimma and Alagae	Melkassa, Hawassa, Bako, Adet, and Jimma	Abiy, Kedir, Metasebia, Ahmed,	Major insect pests and diseases of silk worm feed plants identified and documented by 2003
Demonstration and popularization of improved silk production technologies	2001-2005	Melkassa, Hawassa, Bako, Adet, Jimma and Alagae	Melkassa, Hawassa, Bako, Adet, Jimma and Alagae	Abiy, Kedir, Ahmed, Metasebia	Improved silk production technologies scaled up and popularized for about 1000 farmers until 2005.
Technology multiplication (seeds of silkworms and their feed plants)	2001-2005	Melkassa, Hawassa, Bako, Adet, Jimma and Alagae	Melkassa, Hawassa, Bako, Adet, Jimma and Alagae	Abiy, Kedir, Ahmed, Metasebia	-On average 350 trainees trained per year up to the end of the project. -145,000 silkworm larvae distributed per year from 2002 onwards -20,000 mulberry cuttings and 40 kg castor seeds distributed every year starting from 2002 Ethiopian budget year
The constraints and opportunities of sericulture production and marketing in Ethiopia	2001-2003	Major silk producer areas of the country	Melkassa	Abiy, Amanuel, Kedir, Dawit, Yitayal	Major production and marketing constraints and opportunities of sericulture identified by 2003 E.C

Case Team: Fishery and Aquaculture Research

Commodity: Aquaculture

Project: Selection and development of improved commercially important fish species

Objectives

General

Develop improved tilapia (*Oreochromis niloticus*) strain; adapt catfish (*Clarias gariepinus*) seed production, grow-out and brood stock management technologies suitable for various agro-ecologies and thereby improving the livelihood of the rural people.

Specific

- Compare the performance of different strains and develop improved tilapia strain;
- Generate simple catfish seed production and grow-out management technologies;
- Generate production packages (feeding, health, stock density, water quality parameters, etc) for the improved tilapia strain; and
- Identify potential small water bodies for aquaculture (fish farming) development; stock appropriate fish species and demonstrate aquaculture technologies in different parts of the country

Activity	Duration	Location	Responsibilities		Expected Outputs
			Centers	Investigators	
Selection and characterization of tilapia, <i>O. niloticus</i>	2001 – 2005	Sebeta	NFALRC	Fasil Degefu, Gashaw Tesfaye, Zenebe Tadesse, Fikadu Tefera, Tarekegn Arage	Improved strains of tilapia
Hatchery seed production of fish	2001 – 2004	Sebeta	NFALRC	Gashaw Tesfaye, Zenebe Tadesse, Yared Tigabu, Mulugeta Tesfahun	Simple catfish seed production technology
Formulation of fish feed from locally available sources	2001 – 2005	Sebeta	NFALRC	Zenebe Tadesse, Kassahun Asaminew,	Chemical composition of different feedstuffs and formulated fish diet
Water quality assessment of culture systems for Nile Tilapia and Catfish	2001 – 2005	Sebeta	NFALRC	Fasil Degefu, Aschalew Lakew, Abeneh Yimer, Alemayehu Wube	Information on fish pathology and parasitology
Assessment on fish pathology and parasitology in culture condition	2001 – 2005	Sebeta	NFALRC		Information on the physico-chemical and biological limnology
Survey and enhancement of small water bodies and Demonstration of Aquaculture technologies	2001 – 2005	Somalia region, Wonji, North, West & South West Shewa zones	NFALRC	Gashaw Tesfaye, Fasil Degefu, Yared Tigabu, Fikadu Tefera	Fish stocked potential small water bodies and/or micro dams

Commodity: Fisheries

Project: Enhancement and sustainable Utilization of Fish resources in major inland water bodies

Objectives

General

Increase production and utilization of the fishery resource in a sustainable way and reduce food insecurity.

Specific

- To generate information on the vital population parameters (growth and mortality rates) and estimate the current state of the fishery, maximum sustainable yield and effort major water bodies;
- To study the reproductive and feeding biology of commercially important fish species;
- To study the limnology of major water bodies and develop assessment methodologies for sustainable utilization of the resource (water & biological);
- To determine the level and kind of fish post harvest loss, develop techniques to utilize by-catch, offal and discards, and propose other intervention measures;
- To investigate the prevalence of major parasites and pathogens, and level of infestation on commercially important fish species in selected water bodies and propose possible intervention measures;
- To characterize and investigate the composition and abundance of microbes, planktons, benthic, and fish fauna in wetlands around Lake Tana; and
- To assess the socio-economic importance, the current and projected fish demand and supply, and the market chain & condition of fish in the country

Activity	Duration	Location	Responsibilities		Expected Output
			Centers*	Investigators	
Stock assessment of commercially important fish species	2001 - 2005	Koka, Hawassa, Ashengae, Ziway and Tana	NFALRC, ZFRRC, BFALRC	Gashaw Tesfaye, Yared Tigabu, Fikadu Tefera, Genanaw Tesfaye and staffs from ZFRRC & BFALRC	vital population parameters (growth and mortality rates), current state of the fishery, maximum sustainable yield & effort
The biology of commercially important fish species	2001 – 2003	Ashengae	NFALRC	Zenebe Tadesse, Fikadu Tefera, Esayas Alemayehu, Genanaw Tesfaye	Information on biology of commercially important fish species
Physico-chemical and biological limnology	2001 - 2003	Ashengae	NFALRC	Fasil Degefu, Aschalew Lakew, Abeneh Yimer Alemayehu Wube	Information on the physico-chemical and biological limnology
Assessment of post harvest loss and developing intervention measures	2002 – 2004	Ashengae	NFALRC	Yared Tigabu, Esayas Aemayehu, Mulugeta Tesfahun	Level and kind of post harvest loss and intervention measures
Assessment on fish pathology and parasitology	2001 – 2003	Ashengae	NFALRC		Information on fish pathology and parasitology
Ecology and production potential of wetlands around Lake Tana	2001 – 2003	Wetlands around Lake Tana	BFALRC	BFALRC staffs	Ecology and production potential of wetlands around Lake Tana
Assessment on the Socio-economic significance of capture fishery	2001 – 2003	Rift valley lakes and Gambella region	NFALRC	Abebe Cheffo, Tarekegn Arage	Information on the Socio-economic significance of capture fishery

* NFALRC stands for National Fisheries and other Aquatic Life Research Center; ZFRRC stands for Ziway Fisheries Resources Research Center; BFALRC stands for Bahir Dar Fisheries and other Aquatic Life Research Center

Externally Funded Projects

Ruminant livestock research Case team

Project title: Exploiting market opportunities for value added dairy and meat products in ECA Region

Coordinator: Addisu Abera

General objective

To contribute to sustainable productivity, value added and competitiveness of the sub regional livestock system through enhanced utilizations of value addition invocations in the dairy and meat sub center eastern and central Africa.

Specific objective

- Facilitate the generation uptake of demand driven dairy and meat value chain technologies and innovations;
- Promote in enabling policies enhancing value addition in the dairy and meat sub center;
- Facilitate policy options for enhancing the performance of the agricultural center ECA sub region; and
- Strengthen capacity of smallholder and SMEs to exploit dairy and meat markets in the ECA-region.

Expected output

- Generation and uptake of demand driven dairy and meat value chain technologies and innovations facilitated;
- Enabling policies for promoting value addition in the dairy and meat sub-sectors promoted;
- Capacity of smallholders and SMEs to exploit dairy and meat markets in the ECA sub-region strengthened; and
- Information on appropriate practices, policy options and capacity building process and outcomes documented and disseminated.

List of activities

- Conduct rapid market surveys along the dairy and meat value chains.
- Conduct detailed field study/surveys
- Conduct gender focused study along the dairy and meat value chains.
- Conduct review available and research generated information and dairy and meat sub center policies
- Identify policy options
- Review status of gender and youth mainstreaming in dairy and meat sub centers
- Produce and policy briefs with relevant stakeholders.
- Conduct needs assessment and priorities for capacity building the small dairy and meat value chain
- Develop a capacity strengthening strategy for the small dairy and meat sub centers.
- Carry out capacity building activities value addition.
- Carry out capacity building activities for quality assurance.
- Conduct information need assessment
- Develop communication and knowledge sharing strategy
- Develop appropriate communication product

Location: Holetta and Debrezeit Research Center

Duration : 2010 -2011

Persons Responsible : Addisu Abera, Agagie Tesfaye and Binyam Kassa

Fund source: ASARECA

Project Title: Strengthening germplasm collection regional capacity for forage seeds supply in ECA

Coordinator: Fekede Feyessa

General Objective: to Strengthen feed resource development and utilization in ASARECA member countries.

Specific Objective: forage seed and feed resources availability to improve livestock productivity varies eco regional zones for ECA; and strengthen regional capacity in linkages for IAR 4D in germ plasma management in forage seed production.

Expected outputs

- Forage seed and feed resources availability to improve livestock productivity in varies eco regional zones of ECA increased; and
- Regional capacity and linkage for IAR 4D in germplasm management forage seed strengthen

List of activities

- Identification of best bet genotype types and establishment of seed production pots for distribution national and regional level
- Training of scientists and technician from identified sites in forage germ plasma maintenance forage seed production
- Strengthen forage germplasm collection including forage grasses, fodder trees and herbaceous forage legumes

Location: Holetta

Duration : January 1, 2010 to June 2011

Persons Responsible : Fekede Feyissa, Muluneh Menta, Tadesse T/Tsdeke

Fund source: ASARECA

Project Title: Testing and validation of breed survey methodology, socioeconomics survey and characterization of selected indigenes cattle of ECA

General Objective: To contributed to enhanced utilization of cattle breeding invention to improve livestock productivity in the ECA.

Specific Objectives:

- Generate and inseminate demand driven cattle breeding technologies and inventions for cattle keepers;
- Facilitate the formulation of policy options for enhancing the performance of the cattle sector;
- Stern then the capacity for implementing sustainable cattle improvement programmes; and
- enhance the availability of information indigenes livestock breeds through networking and partner ships

Expected output

- Demand driven cattle breeding technologies and inventions generated;
- Appropriate policies for enhancing the performance of the cattle sector recommended;
- Capacity for implementing cattle improvement and sustainable utilization programs by farmers, service providers and research scientists strengthened; and
- Breed catalog and other documentation produced for at lest one cattle breed per country

List of activities

- Phenotypic breed characterization
- Assessment of genetic diversity
- Design and initiate community beside breeding scams
- Value chain analysis the crosses bred cattle products
- Development of gene banking strategies
- Assessing existing institutional capacity and policy frame work for design appropriate livestock breeding and conservation programmes.
- Training of NARS and research scientists
- Student fellowship at universities
- Development of breed catalog
- Design of database for information indigenes cattle breeds.

Location: Adami Tulu

Duration : 2010- 2011

Persons Responsible : Tesfaye Alemu Tucho, Hailu Dadi, Feyisa Hundesa, Tatek Weldu, Chali Yimam

Fund source: ASARECA

Project Title: Feeding value of flour from prosopis *juliflora* pods poultry, dairy and fattening rations

Project Coordinator: Getinet Assefa

General Objective : The overall objective of this project is to generate basic information on chemical composition and animal response data based on *P. juliflora* pods for extensive use under Ethiopian conditions

Specific Objectives

- To determine nutrient composition of *P.juliflora* pods;
- To determine the feeding value of *P.juliflora* pos four and identify optimum level of inclusion in poultry diet (layers and broilers);
- To determine the feeding value of *P. juliflora* pod flour and identify optimum level of inclusion in ruminant diet (dairy, beef and sheep); and
- To determine the product quality (milk, meat and egg) of livestock based on *P.juliflora*

Expected outputs

- Nutrient composition of *P. juliflora* pod under Ethiopian condition determined and documented;
- The feeding value of *P. juliflora* pod flour determined and optimum level of inclusion in ruminant diets identified;
- The feeding value of *P. juliflora* pod flour determined and optimum level of inclusion in poultry diets identified; and
- The quality of livestock products (milk, meat and egg) of livestock based on *P.juliflora* determined

List of activities

- Feeding value *P. juliflora* pod flour in poultry diets
- Feeding value *P. juliflora* pod flour in the diets of dairy animals
- Feeding value *P. juliflora* pod flour in the diets of fattening cattle
- Feeding value *P. juliflora* pod flour in the diets of growing afar sheep

Location: Werer, Haremaya and Holetta

Duration: 2009-2011

Persons Responsible: Getinet Asefa, Mesert Girma, Mengistu Urge, Solomon Melaku and Yibrah Yakob

Fund source: RCBP

Project title: Designing community-based breeding strategies for indigenous sheep breeds of smallholders in Ethiopia

Coordinator: Aynalem Haile

General objective: Development of successful community-based small ruminant breeding schemes that suit the communities' conditions and farmers' needs

Specific objective

- To characterize the production system;
- To define breeding goals;
- To establish methodological framework for the development of community-based breeding programs for smallholder producers, including institutional arrangements; and
- Undertake impact assessment of the breeding system at various level

Expected outputs

- Breeding goals defined in a participatory manner by farmers and at least one breeding program established per breed;
- A methodological framework for the development of community-based breeding programs for smallholder producers, including institutional arrangements;
- Impact assessment of the breeding system at individual, flock, community and national level;
- Assessment, on a national basis, of the characteristics of the breeds managed by the breeding programs; and
- Better understanding of the constraints to market access by sheep keepers

List of activities

- Description of the production system
- 2 Definition of breeding goals
- Assessment of alternative breeding strategies and implementation of a breeding programme
- Joint evaluation of results and development of guidelines for setting up community based breeding programmes
- Impact assessment

Location: Werer

Duration : 2008-2011

Persons Responsible : Ashebir Kfle, W/Gberel Tesfa Mariam, Abebe Tafa, W/Geberel G/Egzabiher

Fund source: BOKU/ ICARDA/ILRI