USAID
FROM THE AMERICAN PEOPLE

CAPACITY TO IMPROVE AGRICULTURE AND FOOD SECURITY (USAID-CIAFS)

FINAL REPORT

JULY 2015

This publication was produced for review by the United States Agency for International Development (USAID). It was prepared by Fintrac Inc. under contract #AID-EDH-I-00-05-00007/AID-663-TO-11-00002 with USAID/Ethiopia.

Fintrac Inc.
www.fintrac.com
info@fintrac.com

US Virgin Islands
3077 Kronprindsens Gade 72
St. Thomas, USVI 00802
Tel: (340) 776-7600
Fax: (340) 776-7601

Washington, DC
1400 16th Street NW, Suite 400
Washington, D.C. 20036 USA
Tel: (202) 462-8475
Fax: (202) 462-8478

USAID-CIAFS
KT-12 Building, 6th Floor
Ethio China Road
Addis Ababa
Ethiopia

All photos by Fintrac Inc.

CONTENTS

ACRONYMS

AESE	Agricultural Economic Society of Ethiopia
AGP	Agricultural Growth Program
ATA	Agricultural Transformation Agency
ATP	Agricultural Transformation Plan
BDS	Business Development Services
BOA	Bureau of Agriculture
CAADP	Comprehensive Africa Agriculture Development Program
CBO	Community-Based Organization
CIAFS	Capacity to Improve Agriculture and Food Security
CIRIS	Client Impact Results Information System
CRGE	Climate Resilient Green Economy
CSA	Climate-Smart Agriculture
DQA	Data Quality Analysis
ESAP	Ethiopian Society of Animal Production
FAO	Food and Agriculture Organization of the United Nations
FMOA	Federal Ministry of Agriculture
FTF	Feed the Future
FTFMS	Feed the Future Monitoring System
GCC	Global Climate Change
GIS	Geographic Information System
GTP	Growth and Transformation Plan
IFPRI	International Food Policy and Research Institute
IR	Intermediate Result
M&E	Monitoring and Evaluation
MDG	Millennium Development Goal
MOA	Ministry of Agriculture
MT	Metric Tons
NGO	Nongovernmental Organization
ORDA	Organization for Relief and Development of Amhara
PPD	Public-Private Dialogue
PRIME	Pastoralist Areas Resilience Improvement and Market Expansion
SNNPR	Southern Nations, Nationalities, and Peoples' Region
TOT	Training of Trainers
USAID	United States Agency for International Development

ACKNOWLEDGMENTS

The accomplishments of the USAID Capacity to Improve Agriculture and Food Security project would not have been possible without the hard work and collaboration of many partners and counterparts.

Firstly, it was the vision of USAID/Ethiopia that guided US government investment from the onset and throughout the project's four years of operation. The success of USAID-CIAFS would not have been possible without the leadership and management support the Mission provided. We would particularly like to extend our gratitude to the members of the Office of Economic Growth and Transformation team (Gary Robbins, Cullen Hughes, Daniel Swift, Semachew Kassahun, and Dubale Admasu) who worked tirelessly with us to ensure rapid delivery of project products and services, and to find solutions to any challenges that arose.

The Ethiopian public sector was also critical to success – including the Ministry of Agriculture (MOA) and the regional Bureaus of Agriculture (BOA) of Ahmara, Oromia, Tigray, and SNNPR that were some of our biggest supporters and beneficiaries. We would additionally like to thank the taskforce constituted by State Minister HE Ato Wondirad and chaired by Director of Planning and Programming Ato Zena Habtewold, as well as the Ethiopian Institute of Agricultural Research for their participation in and support of key project activities.

Other key counterparts, including the Universities of Bahir Dar, Haramaya, Dire Dawa, and Mekelle; the Ethiopian Chamber of Sectoral Association; the Regional Chambers of Amhara, Tigray, SNNPR, and Gondar City; the Ethiopian Women Enterprise Association; and the sectoral associations of coffee, oil seeds, and honey provided invaluable input, resources, expertise, and oversight. And neither would USAID-CIAFS have had the same outreach or results without the integral involvement of the civil society organizations and small trade associations that participated so actively in project activities. We would also like to express our sincere gratitude to the USAID-Engine project and CIAFS subcontractor First Consult. It is these public and private sector actors and their commitment to food security and climate change resiliency that will ensure the ongoing success and development of the Ethiopian agriculture sector.

Of special note too is the unwavering dedication of our outstanding program staff, led by COP Teshome Lemma. This team personified what we believe development work is all about: hard work, skill, respect, and heart. You honored our company, this program, and Ethiopia. Congratulations on a job extremely well done.

And finally, to the thousands of policy makers, civil society members, educators, farmers, and private business owners who participated in our trainings, studies, and technology demonstrations – a huge thank you and hearty congratulations.

Claire Starkey
President, Fintrac Inc.

USAID-CIAFS team, April 2015

1. EXECUTIVE SUMMARY

The primary goal of USAID Capacity to Improve Agriculture and Food Security (CIAFS) was to strengthen the capacity of the public and private sectors and civil society to address issues related to food security and climate change. USAID-CIAFS worked with the MOA and the regional BOAs to build human capital and institutional capacity for agricultural transformation. The project built the leadership, management, and project planning and implementation capacity of key staff from the MOA and BOAs by imparting skills and knowledge related to transformational leadership, climate change, nutrition, and other food security topics. It also supported private sector agribusinesses, trade associations, and entrepreneurs across key Feed the Future (FTF) commodities and provided monitoring and evaluation (M&E) support to catalyze change, drive growth, and reduce poverty. Achievements included the following:

STRATEGIC CAPACITY BUILDING

Training was provided to key agents of change in Ethiopia's public and private sectors to improve leadership, agribusiness competitiveness, and the enabling environment.

- In total, **2,488 agents of change** participated in training events.
- **1,301 high-level decision makers** were trained in leadership skills to improve their approach to agriculture and climate change challenges.
- Trained **642 CEOs, managers, and entrepreneurs** from the agribusiness sector, 42 percent of which were women, to enhance efficiency and competitiveness.

ANALYTICAL STUDIES

Demand-driven analytical studies helped improve the enabling environment for agriculture and address key policy impediments.

- A **fertilizer procurement and marketing** study contributed to shaping public policy decisions and improved government procurement efficiencies.
- A **seed certification system** study, the first of its kind, provided substantial information to Parliament and policy makers involved in developing Ethiopia's seed law.
- An **analysis of contract farming** produced evidence-based recommendations.
- As a result of these studies and other project interventions, **seven major agricultural policies** were improved over the life of the project.

TECHNOLOGIES & BEST PRACTICES

USAID-CIAFS raised awareness of national and international best practices and policy alternatives to empower key decision makers.

- **121 leaders** from the federal ministry and regional BOAs saw demonstrations of more than **20 proven agricultural practices** to improve understanding and scale adoption in targeted regions.
- Sponsored a study tour to **Thailand,** which provided a high-level delegation with a wider perspective of strategic approaches to smallholder agriculture transformation.
- Facilitated hands-on learning of proven climate smart agriculture technologies and practices and convened the national **Climate Adaptation and Smallholder Agriculture** conference**.**
- Organized international visits of best practices related to **pastoral livestock production**, which provided government representatives with input to formulate national policies and the constitution of a livestock directorate under a State Ministry.
- Hosted an international conference entitled **Agricultural Biotechnology in Africa: Fostering Innovation** to inform and impact public policy.
- Sponsored **five international study tours** to expose Ethiopian leaders to best practices in agricultural development.

FOOD SECURITY & NUTRITION

A new nutrition security curriculum and training for senior government officials highlighted the link between agriculture and nutrition security.

- The program revised the **Nutrition for Leadership Curriculum** to ensure nutrition security was a focus of all development programs.
- **105 agents of change** received nutrition specific training to fight malnutrition and hunger; another **388 agents of change** from the public and civil societies received training in nutrition as part of the leadership curriculum.

CLIMATE CHANGE ADAPTATION

USAID-CIAFS informed decision making and governance related to climate change to ensure long-term food security.

- Prepared **28 technical papers and policy briefs** on the nexus between climate change and food security in the smallholder context.
- Designed a **training manual** to raise public awareness of adaptation of climate change practices and build communities' leadership and planning capacity.

- Supported national universities with the design of **tertiary education curriculum** on global climate change that will prepare Ethiopia's engineers, economists, and planners to analyse and understand associated-risks and inform policymaking.
- A **national conference on climate change** exposed policy makers to the consequences of climate change and promoted an integrated approach to food security.

MONITORING & EVALUATION

Provided strategic M&E support to USAID, the government of Ethiopia, and other Feed the Future projects.

- Built the capacity of the MOA for **evidence-based planning, analysis, and M&E** including training in data collection, analysis, project cycle management, GIS, and resource mapping.
- Provided technical support to USAID/Ethiopia and other FTF projects to improve knowledge management capacity; conducted data quality assessments of 10 FTF programs.
- Hosted **biannual meetings** of MOA, BOA, and allied institutions to harmonize planning and improve data management systems.

2. INTRODUCTION

2.1 PROJECT RATIONALE AND OBJECTIVES

In recent years, national governments, global and regional organizations, and donors have given considerable attention to agriculture and food security. Responding to the economic and financial crisis of the 1990s and the ensuing high food prices, which dramatically increased the number of poor and hungry people, several global initiatives were launched to improve food security and accelerate economic growth. The Millennium Development Goals (MDGs) set out a series of targets for individual countries to meet by 2015. In July 2009, the G8 Summit in L'Aquila, Italy, called for global leaders to allocate at least 10 percent of their national budgets to the agricultural sector to attain, at minimum, a 6 percent average annual growth rate. Countries were encouraged to support results-based programs and partnerships, strengthen strategic coordination, and leverage the benefits of multilateral institutions for sustained agricultural growth and food security. The New Alliance for Food Security and Nutrition, launched in 2012, also aimed at catalyzing private sector investment through country investment plans and thereby support the Comprehensive African Agriculture Development Program (CAADP) as the guiding framework for agricultural transformation on the continent.

Ethiopia has expressed its commitment to the MDGs, subscribed to the L'Aquila principles, and adopted and institutionalized the CAADP. Consequently, public spending in agriculture has averaged 13-15 percent of the government's annual budget and about 7.5 percent of Gross Domestic Product, surpassing the

CAADP targets. The Agricultural Transformation Plan (ATP) has a strategic focus on making modern agricultural technologies available to smallholder farmers and pastoralists to increase productivity. The private sector has also been encouraged to increase its share of investments in commercial agriculture.

With these developments, Ethiopia's agriculture sector has grown and poverty has fallen from 44 percent in 1999 to 29 percent in 2014/2015. However, structural and institutional constraints of high population pressure, low productivity, weak market linkages, and persistent poverty still characterize the sector. Stunting and wasting ratios of 44 and 29 percent, respectively, are indicative of the extra mile needed to tackle widespread malnutrition and hunger. The MOA, government research centers, and BOAs have historically been marred by weak project implementation capacity.

Responding to these challenges, USAID/Ethiopia launched USAID-CIAFS to support the country's efforts for agricultural transformation. Implemented by Fintrac Inc., USAID-CIAFS was a four-year project designed to raise awareness of international best practices and develop greater knowledge of policy alternatives that will empower key policy makers to push for policy reform and increase the efficiency of program management.

The project followed a systemic approach to capacity building that was designed to develop the leadership and management competency of decision makers from the public and private sectors. Capacity building also aimed to strengthen institutions and enterprises to propel and sustain change for economic growth and poverty reduction. Project activities empowered leaders in agriculture to catalyze change, drive growth, and reduce poverty. CEOs, managers, and entrepreneurs were trained in business skills as well as legal and regulatory frameworks for improved competitiveness in a global market. Demand-driven analytical studies of the enabling environment addressed critical policy impediments. Further, best practices, technologies, and institutions were identified and disseminated for scaling up to minimize the effects of climate change and improve sustainable management of natural resources. Civil societies, professional associations, and research and academic institutions were engaged to support national initiatives for agricultural transformation. The MOA planning and M&E systems were strengthened and the related human capacities developed to improve planning and institute M&E systems to track progress and measure outcomes.

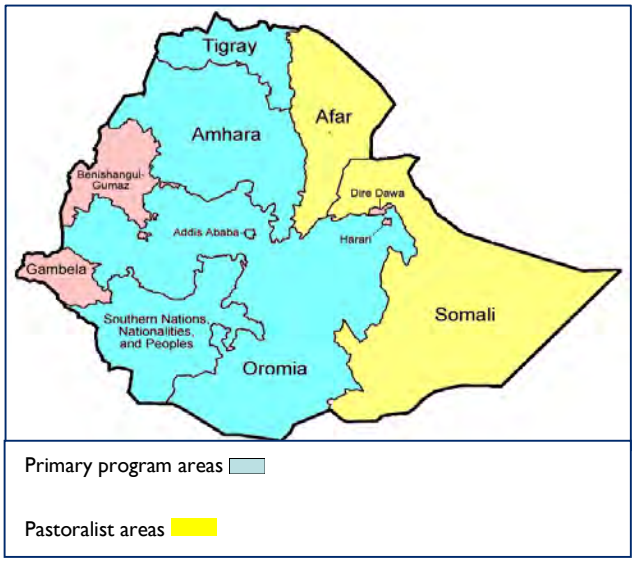
2.2 BENEFICIARIES AND GEOGRAPHIC COVERAGE

USAID-CIAFS implemented a range of capacity building activities focused on four high potential and priority regions including Tigray, Amhara, Oromia, and SNNPR. As a result, the project was aligned to the government's five-year agricultural transformation plan. The project also supported the pastoralist regions of Afar and Somali with targeted capacity building programs. Over the life of the project, USAID-CIAFS reached 4,783 people from the federal MOA and regional BOAs through its leadership training, study visits, and other capacity building instruments. Nearly all those in leadership positions – deputy bureau heads, directorates, process owners, and other officials – have benefited from project activities.

The project also built the entrepreneurship and leadership capacity of CEOs, managers, and entrepreneurs from 280 firms dealing with the key FTF commodities of coffee, honey, milk, meat, wheat, sesame, and maize. Many of these entrepreneurs also learned new ideas and practices through study visits and trade fairs. The majority of private sector beneficiaries (70 percent) were from the four target regions while fewer than 30 percent were from Addis Ababa and the surrounding catchment areas. Though the project directly supported agribusinesses, smallholders and pastoralists across the country benefited from increased market integration, improved enabling environment, and signed contracts stemming from support to enterprises and firms.

2.3 IMPLEMENTATION APPROACH

As a demand-driven project, USAID-CIAFS based its design process on consultations with project stakeholders, including senior personnel from federal and regional bureaus, civil societies, agribusiness associations, and the taskforce specifically constituted by the MOA to interface with USAID-CIAFS. Activities and ad hoc requests were channeled through this taskforce and jointly reviewed for appropriateness. The development of concept papers and terms of references also informed the design process as they were shared with the taskforce, other stakeholders, and specialists for feedback to develop viable plans and implementation modalities.



The project worked collaboratively with the MOA and allied institutions, regional BOAs, and NGOs. USAID-CIAFS also collaborated with chambers and sectoral associations to design and deliver demand-driven support for agribusiness. This strategy served as the basis for designing several diverse activities including organizing public-private dialogues (PPDs) to discuss regulatory and institutional constraints to agribusiness in Ethiopia. USAID-CIAFS also collaborated with regional development agencies (e.g. Organization for Relief and Development of Amhara (ORDA) and the Oromia Development Agency) and local consulting firms to deliver leadership training, and to cascade the training to regional leaders through agents of change. Additionally, USAID-CIAFS engaged research and academic institutions and professional associations to conduct specific analytical studies for the enabling environment, convened national workshops, and developed curriculums for tertiary education. The project's approach also created and strengthened consortiums and forums for sharing experiences and costs.

2.4 PROJECT SUSTAINABILITY

As an inherent theme of project design and implementation, sustainability goals led the project to align activities with national development aims; establish and maintain positive relationships with stakeholders; and ensure local ownership and buy-in for sustained support. Project activities integrated with existing institutional frameworks and development programs to enhance opportunities for sustainability. As a demand-driven project, USAID-CIAFS designed and implemented activities collaboratively with appropriate government institutions, civil society, the private sector, and other stakeholders. Consultations and collaborations with partners and stakeholders allowed USAID-CIAFS to leverage resources and experiences, increase synergy, manage costs, and achieve sustainable development. Collaboration with partners and concerned stakeholders eased USAID-CIAFS' transition of its activities to local control at the end of the project and also deepened stakeholder commitment to sustaining achievements. Lessons learned were thoroughly documented, and impacts were assessed and shared with key stakeholders.

3. PROJECT ACTIVITIES AND RESULTS

Capacity building activities corresponded to six components: strategic capacity building through training; analytical studies for enabling environment; technology and best practice dissemination; food security and nutrition; climate change adaptation; and M&E support. Activities were largely demand-driven and relied on stakeholder consultation before being translated into work plans. This section elaborates the activities and output level results.

3.1 COMPONENT 1: STRATEGIC CAPACITY BUILDING TRAINING

Strategic capacity building through training was at the heart of USAID-CIAFS' approach. The project convened 50 training events; provided specialized training in leadership, planning, and M&E; and disseminated best practices to key agents of change from the MOA and BOAs of Oromia, Tigray and Amhara, and civil society organizations. The Afar and Somali regions also benefited from this capacity building program. USAID-CIAFS engaged agribusinesses involved in key FTF value chains through modular training programs to enhance their efficiency and competitiveness and to engage key government representatives with PPDs for efficient regulatory systems and business practices. Cumulatively, the project trained 2,488 senior decision makers and technical specialists from the public and private sectors and civil society. Nearly 21 percent of those trained were women. Another 1,885 people, drawn from the public and private sectors and civil society, participated in various capacity building workshops and PPDs.

3.1.1 Leadership training

As a central feature of the capacity building program, the leadership training aimed to inspire, energize, and mobilize senior management and decision makers in the public sector and civil society to be creative, visionary, and strategic in their approach to agriculture and climate change.

Strategic leadership training for agents of change. USAID-CIAFS provided a series of trainings to senior decision makers from the MOA and allied institutions. The curriculum, initially developed by Africa Lead in Kenya for regional application, was customized to the Ethiopian context to maximize its relevance and application. The training was complemented by case studies and study visits to selected government institutions delivering services and relevant technologies, and sites showcasing best practice in agriculture and climate change. The curriculum empowered those in leadership roles with the fundamentals needed to achieve agriculture change and food security. Modules were developed explicitly for those in high-level decision making roles at the federal and regional levels and civil society. Figure 1 shows the breakdown by training area/component.

Figure 1: Agents of Change Training

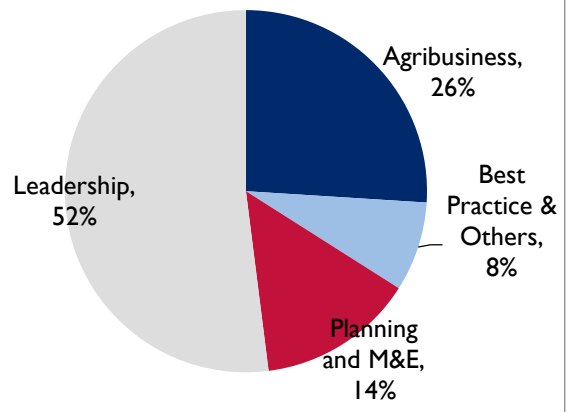
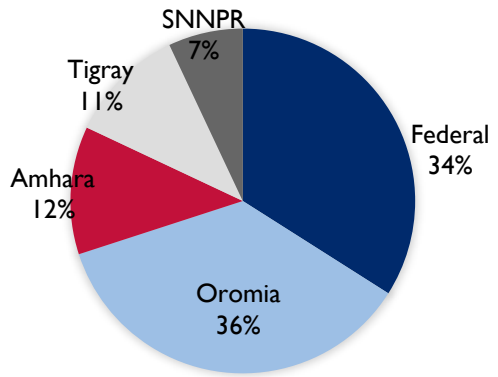


Figure 2 depicts a summary of achievements by region. Since its inception in 2011, the project held 20 rounds of leadership training for 1,301 agents of change. Trainees are senior leaders, directorates and process owners, and specialists from agricultural universities and colleges, research stations; input and livestock agencies; food security offices; and civil societies. Just under 40 of those trained were Training of Trainers (TOT) from the four primary regions and two civil societies – South Ethiopia Peoples' Development Association and ORDA. Women account for nearly 24 percent of those trained in leadership, and were primarily from the federal and Oromia region.

Figure 2: Leadership Training by Region



Key agents of change from districts. The leadership curriculum, initially developed for leaders from the federal and regional bureaus, was also customized to district contexts. An initial 184 district agriculture heads, process owners, and administrators from the Agricultural Growth Program (AGP) districts of Oromia were trained. The curriculum will be rolled out to all AGP districts using the TOT model, thus aligning the training with the government's five-year agricultural transformation plan and AGP II.

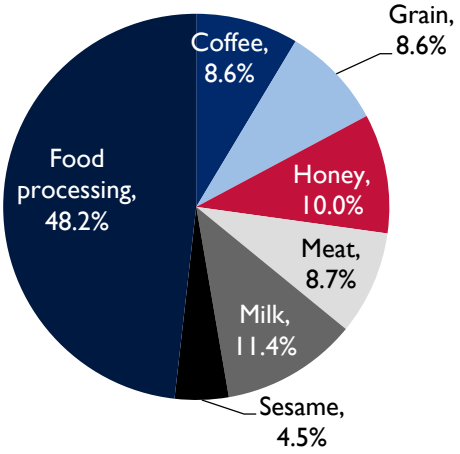
3.1.2 Private sector

Capacity building training also targeted the private sector, notably agribusinesses involved in key FTF value chains. Activities were implemented to address institutional impediments, technical shortcomings, and related constraints hindering agribusiness development in Ethiopia, including:

Training in doing agribusiness. A series of modular training programs on doing agribusiness in Ethiopia were delivered to business owners and managers to enhance the efficiency and competitiveness of the private sector and to effectively reach key government representatives for streamlined regulatory systems and business practices. Topics included grades and standards; competitiveness; business classification and registration; legal and regulatory frameworks; food quality standards and safety; and bankable business plan preparation to enhance the entrepreneurial and business management skills and competencies of entrepreneurs. One module specifically intended to equip female entrepreneurs with essential knowledge and skills. All training programs incorporated site visits to service-providing institutions and business development services offices. Successful agribusiness owners were invited to share their experiences in the hope of inspiring participants. The project collaborated with the Ethiopian Conformity and Assessment Enterprise; the National Animal Health Diagnostic and Investigation Center; and the Quality, Inspection, Testing, and Certifications Services Plc. to deliver these trainings.

Cumulatively, the project trained 642 CEOs, managers, and entrepreneurs in 10 training programs over the past four years. Figure 3 shows the trainee breakdown by sector. Just over 42 percent of those trained were women. Agribusinesses utilized the skills and knowledge gained from the trainings to expand businesses and engage in wholesale and export trade by capturing comparative advantages and streamlining costs to be competitive in global markets. Some firms successfully developed bankable business plans to leverage funds from the commercial sector. A USAID-CIAFS survey from a sample of agribusiness firms attested that beneficiary firms were able to increase their production and productivity.

Figure 3: Agribusiness Training



Market value chain training to MOA/BOA staff. USAID-CIAFS co-sponsored a five-day market value chain training for 42 participants drawn from the MOA and regional BOAs. This training aimed to impart the value chain approach, analysis, and intervention design for household asset building as an alternative pathway out of poverty.

PPD workshops for improved enabling environment. USAID-CIAFS organized several PPDs on topics related to the enabling environment, which included two workshops on fertilizer acquisition and marketing based on a technical study conducted jointly with the International Food Policy Research Institute (IFPRI) and Michigan State University. The potential for contract farming in Ethiopia was also presented to three rounds of PPD workshops; moreover, two PPDs were convened on improving the seed system through seed certification. USAID-CIAFS also organized a national PPD in collaboration with the Ethiopian Association of Agricultural Professionals on the role of commercial agriculture in the context of the Growth and Transformation Plan (GTP). These PPD workshops averaged 60 attendees from the private and public sectors and civil society, and complemented technical studies conducted by the project that were published and shared with stakeholders to improve the policy environment for agribusiness. Some of the key recommendations from these studies and follow-on PPD workshops later provided the rationale for certain government policies and strategies (see section 3.2).

Donor assistance group meeting. USAID-CIAFS organized the first regional private sector development, technical working group meeting to discuss barriers to the expansion of the private sector, identify capacity building needs, and brainstorm long- and short-term solutions to address any barriers.

Organized in collaboration with the Amhara Region Chamber of Commerce and sectoral associations, the meeting brought together 113 development partners, government representatives, and leaders from the regional Chamber of Commerce and the agribusiness sector.

Capacity building of sectoral associations. One strategic objective of the project was to raise awareness of international best practices to strengthen sectoral associations across priority value chains. USAID-CIAFS sponsored two representatives of the Ethiopian Coffee Roasters Association to participate in the 24th Annual Symposium and Exposition of Specialty Coffee Association of America, held in the US (Oregon). This activity offered participants the opportunity to learn about the technology and equipment used in coffee roasting and packaging; follow new products and market trends; and forge market connections with potential buyers. Participants also learned about global quality standards and certification requirements to access premium coffee markets. The lessons learned from this visit were shared with members of the association in a workshop. Additionally, USAID-CIAFS partially funded an international exhibition to support the honey sector. The project financially supported the Ethiopian Apiculture Board to organize Apiexpo-Africa 2012 under the theme of beekeeping for food security and combatting climate change. The event exposed members of this sector to new ideas, technologies, and experiences.

3.2 COMPONENT II: ANALYTICAL STUDIES FOR ENABLING ENVIRONMENT

USAID-CIAFS undertook eight demand-driven analytical studies to improve Ethiopia's enabling environment; these reports were published and extensively circulated among stakeholders. Additionally, the project conducted an assessment of the market for high-value commodities including cotton and honey. Evidence-based policy analysis and specialized studies are powerful instruments to inform decision makers of best practices and policy options for successful agriculture and agribusiness sectors. Highlights from these studies include:

Fertilizer procurement and marketing. USAID-CIAFS collaborated with the Agricultural Transformation Agency (ATA), IFPRI, and Michigan State University to conduct an analytical study on fertilizer purchase and marketing in Ethiopia. The study has significantly shaped public policy in Ethiopia. Previously, government fertilizer demand estimates relied on a simple projection based on past history and development agent reports that often overstated actual use by farmers. The study showed that the country had been importing 900,000 metric tons (MT) of fertilizer annually at a value of $350 million, with stock carry-over averaging 275,000 MT. The opportunity cost of holding high volumes of fertilizer from one season to the next showed the inefficiency in the fertilizer value chain and government policy. The carry-over stocks would have supported 130,000 productive safety net program beneficiaries. The study developed econometric models to determine effective demand. Given current technology, the annual fertilizer requirement was estimated at no more than 600,000 MT. The ATA and the MOA accepted this estimate, and has since adjusted fertilizer downward by 200,000 MT annually, thus saving the country significant amounts of foreign currency. The study also looked into the efficiency of the fertilizer procurement and distribution system and argued that the domestic trade of fertilizer needs to be deregulated to allow private dealers to manage distribution while leaving bulk import to the government. Currently, the ATA and the MOA are considering this recommendation.

Seed certification. The agricultural strategy of Ethiopia emphasizes increasing the productivity of smallholder farming through a package of technologies and best practices, including the supply of improved seed varieties. However, inefficiencies in the regulatory system and weak linkages and enforcement mechanisms have left the seed supplied to farmers susceptible to adulteration, instability, and disease. USAID-CIAFS conducted a seed certification study in close collaboration with the ATA and MOA. Drawing on examples from other developing countries, the study assessed current seed certification practices and areas where policy change must occur to increase the supply of certified seed to satisfy national demand. The study proposed actionable recommendations that balance the regulatory interests

of the government with the efficiency required by the private sector. The study was the first of its kind and provided substantial information to parliament and policy makers engaged in developing seed law.

Contract farming. The Plan for Accelerated and Sustained Development to End Poverty (PASDEP) and other government policy documents prescribe contract farming to shift smallholder agriculture from low-value crops to export commodities, enhance food security, and simultaneously increase government revenue. However, little was known about the various modes of contract. Moreover, the absence of a legal framework for contract farming meant loose entry and exit conditions. USAID-CIAFS conducted a rigorous analysis of contract farming in response to demand from the Investment Directorate of the MOA. The study determined contract farming's potential for technology diffusion and commercialization of smallholder agriculture in Ethiopia. Given input from the government, research institutions, the private sector, smallholder farmers, NGOs, and donors, the study produced evidence-based recommendations for the sector. Findings were published and distributed to key stakeholders, including institutions of higher learning and government bodies; results were also presented at PPD workshops to inform policy making.

3.3 COMPONENT III: BEST PRACTICES, TECHNOLOGIES, AND INNOVATIONS

Another important component of USAID-CIAFS was raising awareness of national and international best practices and developing greater knowledge of policy alternatives, which empowered key policy makers to push for reform and increase the efficiency of program management. Several innovative activities were implemented to support this strategic objective:

Diffusing agricultural best practices. In-country study visits were organized for 121 professionals and leaders drawn from the federal ministry and regional BOAs. Agricultural professionals, experts, and leaders visited demonstrations of more than 20 proven practices, including seed multiplication, natural resource management and protection, watershed management, and the use of improved seed varieties. The visits provided participants the lessons and hands-on experience needed to increase production and productivity in their regions. Post-study workshops allowed for cross-fertilization of experiences and to develop action plans to scale up technologies and practices.

Best practice in pastoral development. USAID-CIAFS contributed substantially to formulating livestock sector policy in Ethiopia. The project spearheaded the formation of a consortium of partners, comprised of the Ministry of Federal Affairs, the MOA, USAID-CIAFS, USAID-Ethiopia Land Administration Program, the Food and Agriculture Organization (FAO), and Oxfam-Great Britain, and organized a field visit to West Africa (Mali and Niger), East Africa (Tanzania and Kenya), and the Fentale model pastoral settlement project in Kereyu, Ethiopia. The delegation was drawn from pastoralist representatives of Afar, Somali, and Borana; parliamentarians; the MOA; the Ministry of Federal Affairs; and other relevant agencies. The delegation returned with a wealth of experience and scalable practices in water resource management, integrated land use planning, livestock development, mobility and cross-border trade, and land tenure legislation. Following, a three-day workshop shared experiences and lessons learned with high-level government officials, donor organizations, NGOs, pastoral council leaders, and others. USAID-CIAFS then constituted a Pastoral Forum comprised of consortium members, and followed up on the implementation of the recommendations. Proceedings from the study visits and the ensuing workshop have been published and shared with policy makers and practitioners. Some key recommendations from the study visits and the following workshop provided the impetus for formulating the Livestock Agency under the auspices of a state minister.

Best practice in extension design and delivery. USAID-CIAFS organized a tour to Thailand for eight high-level officials, including directorates from the federal MOA and deputy regional bureau heads of Amhara, Tigray, and SNNPR for a wider perspective on strategic approaches to smallholder agriculture transformation. High-level meetings were held with the Thai Ministry of Agriculture and Cooperatives to

appraise the organization and structure of Thailand's extension system and delivery mechanisms. The program also included visits to research institutions, biotechnology labs, farm machinery centers, database systems, and smallholder farms. Discussions and meetings were held with local government officials, agribusiness sector members, the scientific community, extension workers, and other stakeholders. Complementing these meetings and field visits, the delegation attended presentations and lectures by specialists from the Asian Institute of Technology and academic and research institutions involved in agriculture technology diffusion. Thailand's extension system shares similarities with Ethiopia's and several aspects of it were considered scalable in the short-to-medium term; these were stipulated in the report prepared by the delegation and presented to the federal MOA and the regional BOAs for future action.

USAID-CIAFS also organized a study tour for the General Manger of Oromia Seed Enterprise to participate in the Chochran speed production and certification annual conference in the US. This event drew experts and policy makers from around the world to deliberate on the development of new seed varieties, seed production systems, marketing, certification, and to share country experiences.

Capacity building in biotechnology. USAID-CIAFS implemented a number of major activities to support public policy in biotechnology and biosafety. The project sponsored a visit to India to learn best practices related to biotechnology and biosafety regulations, environmental risk assessment techniques, and the skills and technicians required for a standard operating practice in Ethiopia. USAID-CIAFS also co-sponsored a two-day international conference titled Agricultural Biotechnology in Africa: Fostering Innovation organized by a consortium of national and international institutions. Based on the recommendations from the first, the project sponsored a second high-profile, two-day international conference on biotechnology and biosafety to raise public awareness and build national consensus in harnessing agricultural biotechnology. At least 100 government officials from the MOA, regional bureaus, and other concerned ministries; scientists and researchers from Ethiopia and overseas; and representatives of USAID and other donor programs attended the conference. A series of actionable recommendations were proposed for scaling up biotechnology in Ethiopia. USAID-CIAFS synthesized these recommendations, research materials, and discussion points and published these proceedings to inform public policy.

Leveraging professional association input. USAID-CIAFS collaborated with EEAP and organized a national conference on large-scale commercial agriculture for transformation. Although the GTP recognizes the importance of commercial agriculture and the need to shift production to high-value crops, the enabling environment, including the regulatory regimes, input supply, finance, extension, and output market information, remain heavily driven by the priorities of international investors. The conference explored how local investors can also be engaged in large-scale commercial agriculture and the necessary supportive environment to sustain their efforts. USAID-CIAFS also co-sponsored the 14th annual Agricultural Economic Society of Ethiopia (AESE) conference on the role of agriculture in achieving the GTP objectives and targets to transform the Ethiopian economy. The conference brought together a sizeable number of AESE members and non-members, policy makers, donors, and NGOs who deliberated on contemporary challenges in agriculture development in Ethiopia and suggested possible policy solutions. The conference prioritized strategic and policy options for agriculture development in Ethiopia, and presented these possibilities to government institutions for consideration. Conference proceedings were published by AESE and disseminated to stakeholders.

Dialogue on Ethiopian agriculture. USAID-CIAFS convened two rounds of dialogue and a roundtable discussion on the status of agricultural education and the role of agricultural research in the face of climate change and food insecurity. Organized in collaboration with Haramaya University, these dialogues brought together participants from US universities, diaspora from research institutions in Africa, international research organizations, government representatives, federal and regional research institutes, the private sector, and local universities. The presentations and papers served as background materials to stimulate discussions and derive concrete recommendations and suggestions on enhancing the quality of tertiary

education and research capability in Ethiopia. USAID-CIAFS compiled the papers and presentations from the second dialogue and published the proceedings for wider dissemination.

Training in video production. USAID-CIAFS trained 20 public relations directorate staff in video production. Trainees were drawn from the regional bureaus, the federal MOA, and allied offices; they included PR and communications experts, photojournalists, and audiovisual professionals. A demand-driven activity, the training was aimed at enhancing the ministry's outreach program to boost agricultural productivity through short videos and briefs.

Tools for transformation briefs. The project produced and disseminated 18 editions of the Tools for Transformation technical bulletin to agents of change and stakeholders in the public and private sector and civil society. USAID-CIAFS reached more than 150 people with this series, including government officials, agents of change, and USAID.

3.4 COMPONENT IV: CLIMATE CHANGE ADAPTATION

Agriculture in Ethiopia needs to adapt to the changing climate and be more resilient to protect smallholders and pastoralists from climate risks. Research suggests that climate change is not institutionalized in government, academia, civil society, and vulnerable sectors and communities. Often, development planning does not effectively and comprehensively integrate climate change and seldom considers the risks associated with climate change in key sectors. USAID-CIAFS undertook various innovative activities to build capacity and scale adaptation practices to support two Global Climate Change (GCC) adaptation pillars to inform decision making and improve governance related to climate change.

Climate change and food security nexus. USAID-CIAFS collaborated with Haramaya, Mekelle, and Bahir Dar Universities to research the nexus between climate change and food security in the smallholder context. In total, 28 technical papers and policy briefs were prepared, covering land degradation, agro-climatic data analysis, smallholder perceptions of climate change, adaptation strategies and technologies, and food security. Regional workshops presented key findings from these studies to researchers and academic staff from universities across the country, government officials, regional BOAs, the Climate Resilient Green Economy (CRGE) team, and farmers' cooperative leaders. The research materials and ensuing workshops received extensive media coverage, both nationally and regionally, and raised public awareness on the linkages between climate change and food security for smallholder farmers in Ethiopia.

Climate change training manual and public awareness. Managing climate change to achieve growth and food and nutrition security will require, among other things, raising public awareness of adaptation practices and building communities' leadership and planning capacity. USAID-CIAFS produced a TOT manual covering conflict prevention, common property management, and local institutions to help raise awareness. Designed in consultation with the USAID-Pastoralists' Areas Resilience Improvement through Market Expansion (PRIME) project and produced in collaboration with Haramaya University, the TOT manual has been piloted and translated to Oromiffa. Both the English and Oromiffa versions were distributed to USAID-PRIME and other projects involved in public awareness activities. The initial plan was also to translate the manual to Afar and Somali languages and train TOTs who in turn would sensitize pastoral council leaders and communities. However, the lack of qualified translators hindered the completion of this translation and follow-on training during the life of the project.

Tertiary education curriculum on GCC. Analysis of higher-education curriculum confirmed that universities fail to emphasize climate change. Consequently, a gap exists in the manpower needed to implement the CRGE program for a green economy. USAID-CIAFS supported the policy process through the articulation of GCC tools and concepts into the curriculum at Haramaya, Mekelle, Bahir Dar, and Dire Dawa Universities; some particular achievements include:

- Stand-alone Master of Science (MS) degree curriculums (Haramaya and Mekelle).

- Post-graduate curriculums that incorporate climate change into natural resource management, environmental sciences, and development policy, among others (Haramaya, Mekelle, and Bahir Dar).
- Five ongoing MS degree courses that integrate climate change courses (Haramaya and Mekelle),
- A short-term course in climate change targeting government officials and practitioners in development (Haramaya).

External experts reviewed the curriculums and presented them at workshops organized in each region to receive critiques from civil societies, professional associations, other universities, research institutions, and regional bureaus of agriculture before finalization. Currently, Dire Dawa University is training 30 students for an MS in Economic Policy that integrates climate change science into the syllabus. The other universities are expected to admit students in the next academic year.

These universities now have the curriculum to train engineers, economists, planners, and students of other disciplines in climate change risk identification, assessment, analysis, quantification, prioritization, and planning. The next step is to standardize and compile the curriculums into a coherent set and present them to the Higher Education Authority of the Ministry of Education for roll out across the country to graduate more skilled manpower to support climate change programs in Ethiopia.

Capacity building in climate-smart agriculture. USAID-CIAFS organized a climate-smart agriculture study visit to Kenya and Uganda for 10 key persons, eight of whom were drawn from the MOA and the BOAs of Amhara and SNNPR. The other two participants were from USAID-CIAFS and USAID/Ethiopia. Participants visited 12 CSA projects and institutions in Kenya and Uganda over 15 days. The team interviewed farmers and private entrepreneurs engaged in CSA interventions, and engaged with experts, researchers, NGOs, and academics supporting local initiatives. Key lessons learned were documented in videos and presented at the national conference convened by USAID-CIAFS on climate adaptation and smallholder agriculture. The project also sponsored two senior MOA staff to attend the CAADP Climate Smart Agriculture workshop in Kenya.

Climate change and smallholder agriculture. USAID-CIAFS supported a national conference on climate change to expose policy makers to the consequences of climate change and promote an integrated approach to food security. Organized in collaboration with the Climate Change Forum-Ethiopia, the Climate Change, Agriculture and Food Security Research Program of CGIAR, and the MOA, the conference identified policies to help the agricultural sector adapt to climate change, further exploring opportunities to harness best practices for sustainable land and water use management. The conference, attended by state ministers, directorates, researchers, and other government officials, proposed recommendations to scale up international best practices to mitigate the effects of climate change and advance the country's food security agenda.

Building on the success of this first conference, USAID-CIAFS also organized a national conference on climate change impacts and adaptation options to sustain smallholder agriculture in Ethiopia. More than 100 senior representatives from key ministries, regional governments, parliament, academia, multilateral agencies, research, and the media attended this two-day conference. The conference provided a platform for sharing knowledge and experiences in mainstreaming adaptations into development programs. As a result, a National Climate Adaptation Forum was formed under the auspices of the Ministry of Agriculture to map strategic direction and advise government institutions and donor interventions. USAID-CIAFS was chosen to serve as secretariat to the Forum.

Climate change and livestock production. USAID-CIAFS awarded a series of grants to professional associations to organize workshops and conferences on topics related to climate change. One such grant was awarded to the Ethiopian Society of Animal Production (ESAP) for the 20th annual conference on the theme of livestock at the crossroads of climate change and variability. The workshop brought together specialists and policy makers from the MOA and allied institutions to deliberate on strategic issues for

livestock development in the country. Key recommendations and papers were compiled and printed and distributed to government offices and other stakeholders to support policy initiatives.

Climate change adaptation publications and videos. USAID-CIAFS developed a series of videos and publications to highlight climate change adaptation and mitigation practices used by small-scale farmers in Ethiopia. USAID-CIAFS formally presented the videos to the MOA and regional BOAs to support their extension efforts. These videos also reached FTF partners, NGOs, and local community-based organizations (CBOs) working with farmers on climate and related themes.

3.5 COMPONENT V: FOOD SECURITY AND NUTRITION

Nutrition security is an integral part of Feed the Future and, accordingly, USAID-CIAFS promoted nutrition to support Ethiopia's food security. This consideration marked a radical departure from the customary definition of food security where food availability, accessibility, and stability reflect the well-being of a population. Nutrition security is about the supply of adequate nutrition at all times to achieve the MDGs. The project embraced this guideline from USAID, developed a curriculum specifically on nutrition security, and trained senior government officials and other actors on the linkages between agriculture and nutrition security. Two major initiatives were undertaken:

Leadership for nutrition curriculum. USAID-CIAFS collaborated with ENGINE to revise the leadership curriculum and deliver trainings demonstrating the relationship between agriculture, food, and nutrition security; the underlying causes of nutrition insecurity and malnutrition; and strategies for household nutrition security. The curriculum also covered sectoral coordination mechanisms and leadership roles for nutrition security in Ethiopia. These trainings allowed USAID-CIAFS to better sensitize decision makers and leaders from the public and private sectors about the causes and consequences of malnutrition and the need to mainstream nutrition security into development programs.

Leadership for nutrition training. USAID-CIAFS organized two rounds of nutrition-specific training for 105 high-level officials including directors, senior and mid-level managers, and process owners from the MOA, regional bureaus, allied organizations, and members of the Agricultural Standing Committee of the Federal Parliament. This training complemented FTF nutrition security programming being implemented at *woreda* levels. USAID-CIAFS organized a similar training for 54 managers and CEOs from CBOs, women's groups, and national and international NGOs on a cost-sharing basis with the International Orthodox Christian Charities to stress the importance of nutrition. The MOA requested that USAID-CIAFS integrate the curriculum on nutrition into the technical and vocational education and training syllabus for development agents.

3.6 COMPONENT VI: PLANNING AND M&E

M&E in USAID-CIAFS played a dual role: design and implement an M&E system for USAID-CIAFS and provide M&E support to USAID, the government of Ethiopia, and other FTF projects. In line with this mandate, the project implemented several activities, including:

3.6.1 Capacity building of the MOA and BOAs

The project implemented several activities to build the human and institutional capacity of the MOA for evidence-based planning, analysis, and M&E capabilities. Through these activities, the project achieved two of its strategic objectives: strategic capacity building activities for key agents of change and M&E system support to the MOA.

Training in data collection, management, and analysis. A technical training was delivered to 48 MOA M&E specialists from the federal directorates and the regional bureaus in survey and data collection

methods, data management, and analysis using hands-on software like Excel. This training aimed to equip key staff with requisite skills to develop standardized and scientific survey methodologies and analytical tools to collect high-quality data, and to perform credible analyses for planning and reporting purposes.

Training in planning and M&E. USAID-CIAFS trained 115 specialists from the MOA, and Afar, Amhara, Oromia, SNNPR, Somali, and Tigray regional BOAs on project cycle management. The training integrated planning tools, approaches, and systems including indicator development. The curriculum was contextualized in the agriculture and rural development sector, and was supported with case studies representing different agro-ecologies and socioeconomic conditions, including pastoralist communities.

Training in GIS and resource mapping. The MOA needs assessment and USAID-CIAFS follow-on rapid assessment identified significant skill gaps in using modern tools for planning and reporting, particularly in the application of GIS for planning and resource mapping. While some BOAs had GIS capability, the technical know-how needed to operationalize the system was severely limited. To address this skill gap, USAID-CIAFS delivered a modular GIS and geospatial capability for resource mapping training to 177 specialists. Post-training follow-up and case studies conducted by the project showed that the training measurably improved specialists' data management and analysis skills, and therefore the quality and dependability of data and reports generated by the regional bureaus.

Biannual planning and M&E workshops. USAID-CIAFS spearheaded three biannual workshops that brought together 216 senior planning and M&E personnel from 10 regional bureaus, the MOA, and allied offices such as the Ministry of Finance and Economic Development, National Planning Commission, the Central Statistics Agency, Seed Enterprises, Institute of Agricultural Research, Cooperative Agency, and the National Animal Health Centre. These meetings discussed M&E issues including harmonizing planning, instituting coordinated M&E and reporting systems, and strategizing collaboration between the AGP partners to enhance implementation of agriculture initiatives in the context of GTP/ATP. The forum also provided participants the opportunity to build upon the progress made in developing the sector-wide M&E system initiated by FAO. The biannual planning and M&E workshop has been institutionalized by the MOA as a successful model in bridging the gap between federal and regional offices and in strengthening the linkages between the government and collaborating donor projects. As a prelude to the workshop, a sensitization workshop was convened on the importance of planning and M&E as a management tool; 92 senior planning and M&E officials and specialists from the regional BOAs, allied institutions, and the MOA attended. This sensitization workshop – the first of its kind in Ethiopia – provided a platform for the World Bank, ATA, and FAO to present their program to support the Ministry's planning and M&E capability.

Consolidating the M&E taskforce. USAID-CIAFS actively participated in the delineation of the objectives and terms of reference of the M&E taskforce organized under the auspices of the Rural Economic Development and Food Security committee and chaired by the MOA Planning and Programming Directorate. The taskforce, which included representatives from the MOA, ATA, World Bank, FAO, and USAID-CIAFS, met periodically to discuss strategic issues and coordination mechanisms to harmonize approaches for better synergy and impact.

3.6.2 M&E support to USAID and FTF partners

USAID-CIAFS provided technical support to USAID/Ethiopia and other FTF projects to improve knowledge management capacity and conducted key M&E-related assessments. The following bullets summarize achievements:

- **Data quality assessment.** The project conducted data quality assessments of 10 FTF projects, which included validation of the quality, transparency, and reliability of data and information generated by the various FTF M&E systems. Key findings from these assessments were reported to USAID and also reviewed with the partners themselves.
- **FTF push-pull assessment.** USAID-CIAFS undertook a national survey to determine the relevance of the push-pull model to the FTF program in Ethiopia and organized a stakeholder

workshop to present key findings. The model seeks to build the capacity of vulnerable and food insecure households to participate in economic activity (the push), while spurring market-led agricultural growth to generate relevant economic opportunities and demand for smallholder production, labor, and services (the pull). Key issues, recommendations, and comments from the workshop were incorporated into the final report submitted to USAID for consideration.

- **FTF monitoring system (FTFMS) training.** USAID-CIAFS provided user training, reference materials, and guidelines for the FTFMS to 18 M&E specialists and two chiefs of party from 12 FTF programs operating in Ethiopia. The project has also trained 12 contracting officer's representatives and other senior specialists from USAID in FTFMS. Additionally, FTF projects received follow-up and support to further improve their data management and reporting.
- **FTF partners' coordination meetings.** USAID-CIAFS organized six quarterly partners' meetings until this responsibility transferred to the Agriculture Knowledge, Learning and Documentation Project in the third quarter of 2014. Each meeting was organized around a unique agenda where partners shared information, discussed agriculture sector policy and strategy issues, and developed informal guidelines for best practices.

4. PROJECT PERFORMANCE AGAINST INTERMEDIATE RESULTS

USAID-CIAFS contributed to ensuring Ethiopia has the capacity to implement an ambitious agenda for agriculture development and improved national food security that supports agriculture growth while decreasing poverty (Intermediate Result (IR) 1). The project also implemented innovative activities against a set of IRs not required by the Task Order but requested by USAID per the Performance Management Plan (PMP). Overall, the project achieved, if not surpassed, its targets and milestones. Annex 1 presents a complete list of performance against intermediate results and indicators. Key successes include:

IR1: *Ethiopia has the capacity to implement an ambitious agenda for agriculture development and improved national food security that supports agriculture growth while decreasing poverty.*

Indicator: The result is measured by the following two impact indicators set out in the Task Order:

- According to data from the Ministry of Finance and Economic Development, during the last four project implementation years, Ethiopia has continued to register on average a double digit economic growth, of which agriculture has grown by more than 8 percent.
- Annual GTP progress reports indicate that during the last five years poverty has fallen below 30 percent and in 2014/15 it is estimated that it will decrease to below 25 percent.

These impact indicators are broad and could not be achieved by USAID-CIAFS alone; they have to be measured at a wider AGP and FTF program level, not project level. Nonetheless, USAID-CIAFS has contributed to catalyze change for agricultural transformation and improved food security and poverty reduction in Ethiopia.

IR 1.1 (Task Order) *Key change agents have the skills to affect change in critical agriculture policy areas that support agriculture growth and poverty reduction.*

USAID-CIAFS surpassed its target by improving seven major agricultural policies over the life of project. The following policy initiatives are at different stages of development:

- Fertilizer marketing and demand estimation
- Seed certification
- Harnessing the potential of biotechnology for food security and agricultural transformation in Ethiopia
- Commercial agriculture
- Contract farming and policy options
- Pastoral development

Additionally, the project contributed to policy improvements in climate change by incorporating GCC into the tertiary education curriculum and constituted national forums to facilitate the enabling environment.

IR 1.1.1 (Task Order) *Key change agents from the public sector, private sector and civil society actors have opportunities to broaden their knowledge of international best practices in agriculture development.*

Cumulatively, the project has increased the capacity of 1,301 agents of change from the public and private sectors and civil society through various training programs against the minimum target of 100 set out in the Task Order. Capacity building took on various forms, including strategic leadership training for food/nutrition security and agricultural transformation; exposure to best practices through in-country and international study visits; and planning and M&E training to the MOA and BOAs. Annex 1 provides a specific breakdown of the achievement against indicators. A large number of the agents of change have registered successes in scaling up improved technologies and practices and instituting efficient management and leadership systems. Surveys and field assessments captured these outcome level impacts.

IR 1.2 (Task Order) *USAID/Ethiopia's improved knowledge management capacity allows strong articulation of initiative results and informs future programs.*

USAID-CIAFS completed eight high-quality studies and project evaluations on a demand-driven basis to capture best practices in agricultural development. These eight included needs assessments for the public and private sector, impact studies, and best-practice inventories. Another notable achievement was the assessment of the FTF push-pull hypothesis and its application. Additionally, USAID-CIAFS established an M&E database (CIRIS) to track the project's capacity-building efforts. On a demand-driven basis, the project also provided other M&E support services to USAID/Ethiopia to monitor and track FTF implementation, which included organizing six FTF quarterly partners' meetings to discuss strategic issues and harmonize interventions, providing training and technical support to M&E specialists from 12 FTF implementing partners in the use of FTFMS, and the completion of DQAs of 10 FTF programs.

IR 1.1 (FTF) *Enhanced human and institutional capacity development for increased sustainable agriculture sector productivity.*

Under USAID-CIAFS, 2,488 individuals received US government-supported short-term agricultural sector productivity or food security training. This support applies structured knowledge transfer through modular training programs delivered to key agents of change from the public and private sectors and civil society to encourage agriculture and food security transformation.

IR 1.3 (FTF) *Improved agriculture policy environment.*

USAID-CIAFS exceeded its target of completing six policies aimed at improving the agriculture environment. In addition to the seven policy initiatives reported under IR 1.1, the project also influenced public policy in GCC through the development of appropriate curriculums for tertiary education. Experiences and best practices gained from international study visits were used as inputs to formulate pastoral livestock development policies and programs.

IR 4.1 *Disaster risk management, response, and adaptation strengthened.*

Under USAID-CIAFS, 28 stakeholders increased their capacity to adapt to climate variability and change. This number exceeded the program target of 27 stakeholders. This group included stakeholders that scaled up best practices in agriculture and climate change as well as improved land use management practices for pastoral livestock system. Additionally, the project supported two major policy initiatives to address capacity constraints to sustain climate adaptation. One of these initiatives supported the development of tertiary-level curriculums that incorporate climate change to train graduates capable of supporting the CRGE and related initiatives. USAID-CIAFS has also supported livestock sector policy improvement through study visits on pastoral land use practices in East and West Africa and the incorporation of best practices to restructure the sector at a state minister level under the MOA.

IR 4.3 *Natural resource management improved.*

Under USAID-CIAFS, 344 people received US government-supported training in natural resource management and/or biodiversity conservation. This assistance included CSA study tours and follow-up meetings; scaling up workshops on the linkages between food security and climate change conducted by supported universities; and pilot testing a TOT manual for natural resource management.

5. EMERGING PROJECT IMPACT

USAID-CIAFS measured impact not just in terms of direct project-level outcomes (such as trainings) but also on the impact these outcomes had on trainees and the wider community. These results were assessed six months after implementation of an activity to allow agents of change enough time to mobilize resources, seek buy-in from high-level authorities, and scale up the skills and technologies acquired through training, best practice study visits, workshops, and other activities.

5.1 PUBLIC SECTOR TRAINING OUTCOMES

A survey was conducted in all four regions to track outcome-level changes in leadership and management at the individual and organizational levels. Since quantitative indicators cannot entirely capture these changes, qualitative assessments were also used to track emerging results, behavioral changes, and application of improved leadership techniques. The assessment indicated that the leadership training had a substantial impact on the key functions of the trainees. Trainees applied the tools gained to improve their leadership styles, motivate staff, and enhance institutional efficiency and productivity. Agents of change have succeeded in changing mind-sets, thinking creatively, and introducing new and better ways of operating and providing efficient services to customers.

As a result of this training, 64 percent of participants reported that the training enabled them to perform their work more effectively. Another large proportion – 55 percent – noted that the training enhanced

their professional competence and confidence. The development of skills and knowledge, as well as changes in attitudes, perspectives, and behavior were also captured as outcomes of the leadership training. Trainees noted they could better influence decision making within their organization. Of the respondents, 57 percent reported that the training created a sense of urgency among the leadership to achieve food security. This immediacy spurred technical specialists to formulate initiatives to address low agriculture productivity in the region. For example, leaders found that low livestock productivity in the region did not meet the GTP targets, and therefore worked to identify the root causes to craft a solution and introduced hormone synchronization. The pilot for this technology resulted in at least a 50 percent increase in milk production, with additional increase still expected.

The MOA recognized USAID-CIAFS' leadership training as complementary to the MOA's Balanced Score Card and Business Process Re-Engineering programs for transformational leadership. Regional bureaus also acknowledged the training as central to their capacity building program.

5.2 AGRIBUSINESS TRAINING OUTCOMES – CASE STUDY FROM AMHARA

A large number of trainees who attended the competitiveness and entrepreneurship trainings in Amhara have gained special skills to expand existing businesses and/or start new ventures. Trainees can now prepare bankable business plans, negotiate business deals, and raise capital. Their management and leadership competency has also increased: 94 percent said they increased production and productivity by identifying potential products that compete in the market. More than two-thirds are now accessing the services provided by public organizations and institutions like the Quality and Standards Authority and Animal Health Lab for testing and grading and certification of export products like honey and meat. Up to 87 percent are now able to network and forge linkages with international markets and potential buyers.

> The heightened level of awareness of food insecurity triggered a sense of urgency among two specialists in Amhara to devise innovative ways of increasing production and productivity. The regional soil and animal laboratory officials who attended the leadership training pooled resources and know-how and introduced environmentally friendly bio-fertilizer for legume crops at affordable prices. The practice has led to a doubling of bean production. These professionals demonstrated the value of bio-fertilizer as a substitute to chemical fertilizer, and as a result the regional government purchased necessary equipment to enable the soil laboratory to produce it sustainably for wider distribution.

The entrepreneurship and leadership training has had equally significant impact on the performance of agribusiness firms. CEOs, managers, and business owners were able to boost their knowledge and skills to plan, organize, and manage a successful business. More than two-thirds of the trainees networked with international buyers, learned more about global commodity markets, and enhanced their entrepreneurial competency. More than 75 percent were able to generate new business ideas, conduct strategic planning, and prepare bankable business plans while 42 percent secured financing for business expansion. Trainees also paired leadership qualities with entrepreneurship, thus inspiring and managing their staff for better results.

As a result of these trainings, various sectors saw improvements. Coffee exporters entered the world market and increased their share by introducing quality packaging material and grading coffee beans while a processing company in the honey sector engaged smallholders with contract farming, provided technical training and modern equipment, and boosted productivity to trade in international markets. As another example, when a dairy farm was losing money during the fasting seasons, the manager applied the skills she learned at the training and preserved milk products for several months to withstand the decreased demand in this time period.

More than 80 percent of respondents were able to expand their business using the skills and knowledge gained from the training. Nearly 70 percent started new businesses while 30 percent got a foothold in the

international market. Approximately 80 percent have increased their profit margin, partly by controlling costs but also by improving product quality and meeting consumer demands and expectations. More than 70 percent of the trainees have improved their product quality, resulting in increased domestic market share. The survey further revealed that 35 percent were able to increase their revenue to a large extent while another 42 percent thought that their earning level was on an upward trend.

5.3 SCALING UP BEST PRACTICES

Scaling up best practices and technologies for climate adaptation and food security was a central strategy of USAID-CIAFS. The documentation and distribution of these best practices undertaken by the project resulted in key successes, including:

- In Awzi *woreda* in Amhara, agents of change worked closely with *woreda* officials, development agents, and the local communities to create enclosures for integrated watershed management schemes. Communities now manage these watersheds that serve as an income source for landless youth who earn a living from beekeeping activities integrated into the watersheds.
- Scientists and researchers from Amhara scaled up banana tissue culture technology after visiting the biotechnology farm in Jimma, Oromia. For years researchers had been trying to introduce banana to Amhara, and this visit resulted in the regional bureau allocating resources to strengthen the local laboratory and establish several new centers. This initiative allowed the regional agriculture research center to deploy experts who had participated in the study tour to produce banana tissue culture for wider dissemination to smallholder farmers.
- Impressed by the bench terracing seen in Oromia, agents of change from Tigray organized landless youth and allocated degraded land to construct bench terraces. In addition, they invited professionals to provide training on bench terracing for agricultural experts, development agents, and farmers. Bench terracing has reached such a scale in Tigray that this operation has even gotten attention from policy makers at the federal level.
- Agents of change from Tigray were also successful in scaling up a participatory forest management system witnessed in Wolayta, SNNPR. As a common property, forests in Tigray lacked ownership, so the agents of change designated forest rights under government and privately-owned lands. The region has now five major forests, including the national park, that covers over 217,643 hectares under government ownership. Negotiations are ongoing with farmers to transfer 30,000 hectares of forest land to them so that they can benefit from carbon harvesting.
- Following the awareness and sense of urgency created through the study visits, row-planted *teff* in some zones of Oromia achieved high yields. In Wayou Tuka *woreda*, for example, a farmer harvested 50 quintals of *teff* per hectare, which represents a four-to-fivefold increase over the conventional method. Based on the lesson learned from this farmer, the Oromia BOA organized training to *woreda* development agents and farmers from other *woredas* and zones to further scale up the practice in the region.
- Row planting in Tigray initially saw minimal adoption as farmers resisted the practice because of its high labor demand. This resistance dissipated after agents of change planted major crops in rows to demonstrate its high yield potential. Farmers who adopted the practice raised *teff* productivity to 35 quintals per hectare compared to 9 quintals using the broadcasting method. Currently, the bureau is training *woreda* experts to diffuse the technology more widely in the region.

6. LESSONS LEARNED AND CONCLUSION

The lessons learned underscore the importance of treating capacity development as a long-term and systemic process rather than a singular event. USAID-CIAFS continuously refined its approach and methodologies to build and improve upon prior experience and ensure activities generated desired outcomes. The following list summarizes key takeaways:

- Effective capacity building interventions require long-term commitment, especially in Ethiopia where the initial base has been weak. Substantive improvements will require commitment beyond the customary project time limits of four years. Specialists have generally suggested time horizons of 5-10 years or even 10-15 years for effective capacity strengthening. Sustained support over a long period is necessary to institutionalize new approaches, systems, and practices. Moreover, many issues and gaps continue to impede the development agenda. Indeed, the country is a long way from achieving food security, and poverty levels have yet to fall below the target set by the FTF intermediate result. This situation requires additional capacity building projects with an extended, although clearly bounded, time commitment to sustain the efforts initiated by USAID-CIAFS so that a hiatus or shifting priorities does not erode emerging gains.
- USAID-CIAFS' experience also suggests that a sound and detailed capacity needs assessment, in which the beneficiary and its key stakeholder organizations play an active role, is critical in establishing the base scenario against which targeted activities can be specified for a successful

capacity building program. The gaps identified through such assessments establish and rationalize subsequent capacity building initiatives for agribusiness development, food security, and CSA.

- USAID-CIAFS' activities complemented MOA/BOA policies and strategies, which recognize capacity building as a cornerstone to achieving and sustaining agricultural growth for food security and poverty reduction. USAID-CIAFS sought alignment with regional bureaus and institutions to define priority areas and implementation modalities to better deliver targeted services. This experience showed that adjusting activities to account for the host government's priority areas provides numerous benefits. Achieving this coordination necessitates working through existing government institutions and capitalizing on the experiences and knowledge of the key staff. Parallel systems that bypass the ministry's systems and structure represent a missed opportunity to strengthen system-wide capacity.
- Besides efficient use of resources, synergetic collaborations sustain impact. One of USAID-CIAFS' preferred models was to engage concerned bureaus and the private sector with a coordinated planning and design process through partner fund subcontracts. This approach provided the client with a sense of ownership, while also allowing time for policy makers' buy-in and approval.
- By utilizing local service providers and providing training and relevant accreditation, USAID-CIAFS has successfully built the capacity of local service providers, including consulting firms, training and research institutions, and other civil society organizations. Subcontracting local consulting firms and the TOT model boosted local service provider capacity for future work. Sustainable development requires building on this institutional infrastructure.
- The project used PPDs effectively to address the wider systemic constraints associated with innovation in fertilizer, seed, and contract farming. Collaboration and social learning through PPDs resulted in the development of improved regulatory and institutional arrangements for innovation and transformation. Building on the World Bank model, the project developed a modular curriculum on PPD that has been tested and found effective. Incoming projects should take advantage of this knowledge base.
- USAID-CIAFS strove to ensure the equitable participation of women in its activities and achieved a target of 15 percent for female participants in the leadership training programs. Although the MOA and regional BOAs have few women in leadership positions, through a conscious program of affirmative action, women in decision making roles can be supported to build leadership and management competencies, allowing Ethiopia to empower more women and increase gender equity.
- USAID-CIAFS has produced a number of documents over the four years, including well-organized and structured training manuals on relevant topics for agribusiness development and public sector leadership; research materials and proceedings dealing with biotechnology, food security, and climate change, among other crucial subjects; and published proceedings, analytical studies for policy dialogue and assessments. Many of these reports have informed decision making and policy options. Incoming projects and stakeholders would benefit from these documents in their quest for viable project approaches and experiences. Experience suggests that a shared history of information and development experience provides better opportunities for continuity and sustainability of initiatives.
- Finally, USAID-CIAFS' experience underscores the importance of treating capacity building as a core objective for agriculture transformation in Ethiopia and ensuring activities are country-owned, results-oriented, and evidence-based. To the extent possible, project activities must be demand-driven for stakeholder ownership and for good use of the technical support provided.

ANNEX 1: PERFORMANCE AGAINST INTERMEDIATE RESULTS

#	Intermediate Results	Indicator	LoP Performance (Feb 2011- April 2015)			Remarks
			Target*	Achieved	Percent	
I	**Results and Indicators in Task Order**					
	IR 1.1 Key agents of change have the skills to affect change in critical agriculture policy areas that support agriculture growth and poverty reduction	Five major agricultural policies are improved	(5) 6	7	117%	Seed certification; contract farming and policy options; fertilizer demand estimation and marketing; pastoral development; biotechnology; large-scale commercial agriculture; tertiary education curriculum in GCC
	IR.1.1.1 Agents of change from the public sector, private sector, and civil society actors have opportunities to broaden their knowledge of international best practices in agricultural development**	Number of agents of change from the public sector participating in CIAFS' capacity building efforts including workshops and experience-exchange visits	(100) 1,592	1,208	76%	Participants in leadership and planning and M&E trainings and workshops from the public sector
		Number of key agents of change from the private sector participating in CIAFS' capacity building efforts, including workshops and experience-exchange visits	590	642	109%	Includes women and men who participated in agribusiness and entrepreneurship trainings (4 modules)
		Number of key agents of change from the civil society sector participating in CIAFS' capacity building efforts, including workshops and experience-exchange visits	120	93	78%	Includes leadership training provided to local and international NGOs, CSOs, and research and academic organizations
		Number of agents of change receiving sub-grant resources to broaden knowledge and affect future policy changes in Ethiopia. Resources can be used for policy pilot activities, workshops, education, PR, advocacy, national forums, and other relevant forums	52	57	110%	Includes change agents involved as trainers and facilitators qualified for grants through local NGOs, and private firms to cascade leadership training to the regions

#	Intermediate Results	Indicator	LoP Performance (Feb 2011- April 2015)			Remarks
			Target*	Achieved	Percent	
	IR1.2 USAID Ethiopia's improved knowledge management capacity allows strong articulation of initiative results and informs future programs	On a demand-driven basis, high quality studies and project evaluations are conducted that capture best practices in agriculture development	(5) 8	8	100%	Includes: FTF push-pull assessment; 2 needs assessments; best practice inventory; and 4 impact studies
		M&E database is established to track CIAFS capacity building efforts as well as other capacity building efforts of FTF projects	1	1	100%	CIAFS has developed a web based M&E system (CIRIS) to track its capacity building activities
		On a demand-driven basis, other M&E support services are provided to USAID/Ethiopia to monitor and track FTF implementation	4	4	100%	DQAs, FTFMS support, FTF quarterly coordination meetings, repository website for FTF projects
2	**Results and Indicators Not in Task Order**					
	IR 1.1 Enhanced human and institutional capacity development for increased sustainable agriculture sector productivity	Number of individuals who have received USG-supported short-term agricultural sector productivity or food security training	3,093	2,488	80%	Includes agriculture and food security-related trainings provided to public and private sector and civil society
	IR 1.3 Improved agriculture policy environment	Number of policies completing the following processes/steps of development as a result of USG assistance in each case: analysis; stakeholder consultation/public debate; drafting or revision; approval (legislative or regulatory); full and effective implementation	6	7	117%	Seed certification, contract farming, fertilizer demand estimation, pastoral livestock development, large-scale commercial agriculture, integration of GCC curriculum in tertiary education, and biotechnology.
	IR4.1 Disaster risk management, response, and adaptation strengthened	Number of stakeholders with increased capacity to adapt to climate variability and change as a result of USG assistance	27	28	103%	# of *woredas* and zones that participated in climate adaptation study tours and verified different adaptation practices for scale-up
		Number of laws, policies, strategies, plans, agreements, or regulations	2	2	100%	GCC curriculum integration into tertiary

#	Intermediate Results	Indicator	LoP Performance (Feb 2011- April 2015)			Remarks
			Target*	Achieved	Percent	
		addressing climate change (mitigation or adaptation) and/or biodiversity conservation officially proposed, adopted, or implemented as a result of USG assistance				education; pastoral land use system
	IR 4.3 Natural Resource Management improved	Number of people (men and women) receiving USG supported training in natural resource management and/or biodiversity conservation	345	344	100%	Includes overseas study tour participants in CSAs and follow-on workshops

*Figures in parenthesis are targets given in the Task Order; the rest are targets set out in project work plans.

**Agents of change are individuals from the public and private sectors and civil societies who participated in training programs and study visits. The project has implemented various capacity building workshops through institutions like professional associations. Participants in these workshops (1,885 in total) do not necessarily meet the definition of agents of change and as such are reported separately.

ANNEX 2: STUDIES, PROCEEDINGS AND REPORTS

A. Analytical Studies

Proceedings: Pastoral Development in Ethiopia, Study Visits and National Workshop, 2012

Seed certification in Ethiopia: Issues, Experiences, and Options for Improvement, May 2013

Fertilizer in Ethiopia: Policies, Value Chain, and Profitability, July 2012

Contract Farming and Policy Options in Ethiopia, September 2012

Proceedings: The Role and Prospects of Large-Scale Commercial Agriculture in Meeting Ethiopia's Growth Transformation Plan, December 2012

Proceedings: Harnessing the Potential of Biotechnology for Food Security and Agricultural Transformation in Ethiopia – A Condensed Version, December 2014

Proceedings: A Dialogue and Roundtable Discussion on Ethiopian Tertiary Education in the Agricultural Sciences, July 2011

Inventory of Best Practices in Amhara, Oromia, Tigray, and SNNPR Regions, November 2014

Best Practice Study Tour I, November 2014

Best Practice Study Tour II, November 2014

The Market for Honey, Market Survey #01

The Market for Cotton, Market Survey #02

B. Technical Reports

Capacity Needs Assessment of the Ministry of Agriculture at the Federal and Regional Levels, September 2011

Private Sector Capacity Building Needs Assessment and Workshop Report, September 2011

Assessment of the Push-Pull Hypothesis, Final Report, December 2013

Post-Training Impact Assessment: Private Sector Training on Competitiveness Leadership, and Entrepreneurship, June 2013

Impact Assessment USAID-CIAFS National and Regional Leadership Training, November 2012

A Report on a Study Tour of Smallholder Agriculture Transformation and Good Practices in Thailand, 17 – 27 September, 2014

Kenya and Uganda Climate Smart Agriculture Study Tour Trip Report, September 2014

C. Short Videos for Extension (12-15 minutes long)

Documentary film on Climate Smart Agriculture Visit to Kenya

Documentary film on Climate Smart Agriculture Visit to Uganda

Water Harvesting

Honey

Integrated Watershed Management

Irrigation

Rust Resistance Wheat Variety

Seed Multiplication

Quncho Teff Variety

Coffee

Vertisol Technology

Milk and Dairy Production

D. Training Manuals

Climate change TOT training manual for pastoral communities

Doing agribusiness in Ethiopia, module 1

Doing agribusiness in Ethiopia, module 2

Doing agribusiness in Ethiopia, module 3

Doing agribusiness in Ethiopia, module 4

Women entrepreneurship training manual, module 1

Women entrepreneurship training manual, module 2

Leadership training manual, module 1

Leadership training manual, module 2

District leadership training manual, module 1

Data management and GIS training module I

Data management and GIS training module II

Project cycle management training manual

Data collection, management, and analysis training manual

E. Case Studies

Published:

- Integrated Watershed Development
- Seed Production by Smallholder Farmers
- Land Reclamation for Improved Livelihoods through Bench Terracing

Draft:

- Upscaling Rain Water Harvesting
- Row Planting of Cereals
- Improving Agricultural Extension through Farmer Training Centers
- Transformational Leadership for Extension Delivery
- Improved Technology for Agriculture Productivity: A Case Study in BBM Application for Vertisols
- Upscaling Modern Planting of Coffee
- Application of Data Management and GIS Capability for Resource Mapping and Planning

F. Success Stories

SS#1: Training Inspires Policymakers and Private Sector

SS#2: Transforming Agriculture through Leadership

SS#3: Transforming Agriculture through Technology

SS#4: Training Helps Ethiopian Farmer Save Livestock

SS#5: Trainings Trigger Solutions for Competitiveness

SS#6: Better Management Practices Make Big Impact

SS#7: Training Helps Agribusiness Expand

SS#8: Training Helps Trader Reach New Export Markets

SS#9: Training Leads to Improved Irrigation Management

SS#10: CIAFS Trainings Help Improve Seed Quality

SS#11: Trainings Inspire Oil Processors to Join Forces

G. Tools for Transformation

TfT#1: Gender Mainstreaming in Agriculture: Impact through Access, Education, and Equity

TfT#2: Code of Practice for Vegetables, Fruits, and Herbs: Impact through Consumer Confidence

TfT#3: Haricot Bean Seeds: Impact through Partnership for Multiplication and Certification,

TfT#4: Combating Ectoparasites: Impact through Drug Testing and Treatment

TfT#5: Drip Irrigation: Impact through Smart Water Management,

TfT#6: Coffee Cupping: Impact through Marketplace Leadership

TfT#7 Health and HIV/AIDS: Impact through Awareness, Prevention, and Support

TfT#8: Greenhouses: Impact on Incomes and Food Security through Low-Cost Technology

TfT#9: Warehouse Receipts: Impact through Innovation in Microfinance

TfT#10: Integrated Pest Management: Impact through a Problem-Solving Approach

TfT#11: Geographic Information Systems: Impact through Improved Data Management and Analysis

TfT#12: Apiculture: Impact through Modernizing an Industry

TfT#13: Improved Grain Varieties: Impact through Research and Development

TfT#14: Water Harvesting: Impact through Conservation Practices

TfT#15: Maize Production: Impact through Improved Agronomic Practices

TfT#16: Fertilizer: Impact through Boosting Soil Fertility

TfT#17: Contract Farming: Impact through Access to High-Value Global Markets

H. Climate Change and Food Security Nexus: Unpublished Technical Studies

Bahir Dar University

- Household Perceptions and Adaptation to Climate Variability in Drought-Prone Areas of Amhara Region: The Case of Lay Gayint District, Ethiopia

- Variability of Rainfall, Its Current Trend and Adaptation in Crop Production in Amhara Region, Ethiopia
- The Effect of Climate Variability on Domestic Ruminant Population and Livestock Disease Outbreak in Amhara Region, Ethiopia
- Past and Future Climate Change, Climate Variability, and Growing Season at Kabie Watershed Area, South Wollo, Ethiopia
- Experiences and Lessons in Climate Change Adaptation and Mitigation Measures to ensure Food Security and Agricultural Production in Ethiopia: The case of Coping with Drought & Climate Change Project
- Land Use Land Cover and Climate Change in Northwest Amhara Development Corridor, Ethiopia
- Livestock Technologies and Management Options for Climate Change Adaption and Mitigation: Review of Literature
- Perception of Smallholder Farmers' on Climatic Variability and their Adaptation Mechanisms: The Case of Alefa Woreda, North Western Ethiopia
- Impacts of Climate Change and Variability on the Livelihoods of Smallholder Farmers and their Adaptation Strategies: The Case of Banja Woreda, Amhara Region, Ethiopia
- Beekeeping, Climate Change, and Food Security: The Case of Eastern Amhara Region, Ethiopia
- Food Security at the Crossroads of Climate Variability: Case Study of Sekota District of the Amhara Region of Ethiopia
- Climate Change Trend Analysis, Vulnerability and Adaptation Strategies in LakeTana Sub-Basin, Ethiopia
- Agricultural Technologies to Enhance Farmers' Adaptation Capacity to Climate Change Impacts: Lessons from Gumara-Maksegnit Watershed
- Farmers' Perceptions to Climate Change and their Adaptive Strategies in Amhara Region: A Literature Review
- Climate Change Impacts on Freshwater Ecosystems and Fisheries and the Way Forward
- Climate Change Impact and Adaptations in Forestry: A Literature Review

Mekelle University

- Climate Change Resilience and Adaptation Measures in Kola Tembien, Tigray, Northern Ethiopia
- Climate Change Trend and Adaptation through Environmental Rehabilitation: The Case of Tigray
- Climate Change and Livestock Activity Choice in Nile Basin of Ethiopia
- Adaptation to Climate Change in an Agroforestry: Evidence from the Nile Basin of Ethiopia
- Integrated Climate Risk Assessment and Crisis Response Strategies for Agriculture
- Comparative Carbon Footprints between Abreha Atsbeha and Adeke Sandid Communities
- Improving Decision Making Capacity of Smallholder Farmers in Adaptation to Climate Change in Three Drought Prone Districts of Tigray

Haramaya University

- Food Security and Adaptation Strategies to Climate Change
- Nexus Between Climate Change and Agriculture, and the Prospects for Smallholder Agriculture in Sub-Sahara African Countries: In view of Some Evidences from Ethiopia
- Econometric Analysis of Climate Change Induced Food Insecurity and Coping Strategies: Empirical Evidence from East Hararghe Zone, Ethiopia
- Intensifying the Emerging Climate Change Resilient Efforts of the Rural Communities of Dire Dawa Administration

ANNEX 3: TESTIMONIALS AND APPRECIATIONS

The following is an illustrative list of support received from various stakeholders throughout the life of the project:

- Letter of appreciation: The corporate council
- Letter of appreciation: Amhara BOA
- Letter of appreciation: Oromia BOA
- Letter of appreciation: Tigray BOA
- Letter of appreciation with regard to the Api Expo: MOA
- Letter of recommendation: Dire Dawa University
- Certificate of appreciation: Apitrade Africa
- Certificate of acknowledgement: ESAP

Capacity to Improve Agriculture and Food Security (USAID-CIAFS)