Innovations to help our country grow.
A MESSAGE FROM THE MINISTER OF AGRICULTURE

Agriculture is Ethiopia’s most important sector, crucial for the country’s food security and the livelihoods of nearly 85% of its people, but also the engine for the country’s Agriculture Development Led Industrialization (ADLI) strategy. The sector is the largest contributor to the overall economy and is fundamental to Ethiopia’s overall development. Despite the dominance of traditional smallholder farmers in the sector, a new type of dynamism has begun to emerge. Over the past decade, productivity and production have consistently grown at near double-digit rates. Increased engagement with mid and large-scale private sector partners has also brought new technologies and improved market linkages.

Accelerating agricultural growth in Ethiopia has wide-ranging impacts beyond smallholder farmers and rural development. Proactively including women will have significant impact on household nutritional status and increase women’s contribution to the country’s overall development. Increased agricultural productivity and commercialization – and in particular the increase in related upstream and downstream economic activities that are part of this development – can also provide employment opportunities for Ethiopia’s youth as well as drive industrialization and create export growth.

Similar to the trend over the past decade, we have continued to see marked improvements in agricultural productivity and production over the past year. Preliminary reports from the Central Statistics Agency indicate a 15.35% increase in cereal production over the past year alone. Progress has been even more remarkable for the three crops (tef, wheat and maize) initially prioritized by the Agricultural Transformation Agenda. The CSA estimates that the productivity and production increases in maize for the past year have been 5.39% and 7.87% respectively. For wheat the numbers are even more encouraging, with productivity levels estimated to increase at 12.18% and overall national production projected to increase by 17.60%. Over the past year, the most impressive gains however have been in tef. Based on the concerted effort placed by all partners on popularizing the “TIRR” (Tef, Improved seed, Reduced seed rate, and Row planting) technology package, national tef productivity has increased by 44%. CSA also estimates national tef production to increase by a staggering 24% from the production levels seen last year.

None of this could have been possible without close coordination between federal and regional public sector partners, extending to woreda-level cooperative promotion agencies and the nearly 50,000 extension workers that ensure that high-quality information and technologies are delivered to farmers. This strong coordination has been fundamental to achieving the massive production gains seen over the past year, but also in advancing many of the more systemic interventions identified within the Agricultural Transformation Agenda. A special mention must also be made to our various development partners that have been important contributors to Ethiopia’s transformation plan. Their engagements have been instrumental in providing timely support and advice on many aspects of the Transformation Agenda and beyond. Finally, I would also like to recognize the contribution provided by the various private sector and NGO/civil society organizations that are partnered in this effort with us. While their participation on the Agricultural Transformation Agenda has been limited to date, we expect this to grow exponentially in the coming years.

I am confident that the diversity of partners that have committed to Ethiopia’s agricultural transformation journey will provide the necessary drive and energy to help the agriculture sector become the primary engine to our country’s goal of reaching middle-income country status by 2025. I am encouraged by the progress made to date on the Agricultural Transformation Agenda and fully expect the progress to accelerate in the coming years.

Tefera Deribew
Minister of Agriculture
A MESSAGE FROM THE CEO OF THE ATA

Over the past five years, Ethiopia’s agriculture sector has begun a period of rapid growth and transformation. Through the leadership of the Agricultural Transformation Council and the efforts of many different stakeholders, the past two years have seen an acceleration of this transformation process. The prioritization of key interventions under an Agricultural Transformation Agenda has provided the necessary focus and attention to major systemic issues that can create a paradigm shift in Ethiopia’s agriculture sector.

The past year has been a year of great progress and learning within the Deliverables included in the Transformation Agenda. As outlined in the pages of this Annual Report, significant gains have been made in key value chains, systems, and crosscutting initiatives. Through the concerted effort of many partners at the regional level, a fundamental change is happening in the tef, maize and wheat value chains. Primary drivers of this change include enhanced farmer access to improved agronomic practices and inputs, such as improved seed and fertilizer. In addition, market linkages have been strengthened to accelerate the transition of smallholder farmers from subsistence to commercial orientation.

On the systems side, innovations such as the Direct Seed Marketing project, the Ethiopian Soil Information System (EthioSIS), and Commission Based Cooperative Marketing are already being implemented. Improving the input credit system, refining the biosafety legislation, and strengthening the standards of irrigation pumps are a few of the other system interventions that are also underway. Beyond these, many stakeholders have also been working in a number of crosscutting areas to ensure that the transformation of Ethiopia’s agriculture sector is financially, environmentally, and socially sustainable. Exciting activities within the gender, climate, and technology areas are addressing both structural and operational bottlenecks.

This past year has also been a period of great learning for both the Ethiopian Agricultural Transformation Agency (ATA) and the partners working on the Transformation Agenda Deliverables. One of the most important learnings has been on the need to better integrate the Agricultural Transformation Agenda Deliverables with the multitude of activities already underway within different aspects of the overall agriculture sector. While good progress has been made in this regard, more work still needs to be done. There were also some very important lessons on how the ATA could best support partners implementing Deliverables, in order that long term capacity is built within the system. Finally, many lessons were learned on how to improve the alignment across partners, both at the federal and regional level, but also across the public, civil society, and private sectors.

While the gains and learnings from the past year give us great optimism for the progress to come, the sense of urgency remains constant. We at the ATA and across all the partners working on the Transformation Agenda continue to be inspired by the perseverance and tenacity of the smallholder farmers of Ethiopia. We draw great strength and encouragement from their commitment to provide for their families and feed our country. We are equally committed to do our part – helping to identify and remove the bottlenecks in the system and ensuring that they have access to the technologies and opportunities to undertake their noble task more productively - today, tomorrow and in the years to come.

Khalid Bomba
Chief Executive Officer, ATA
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WHY IS TRANSFORMING ETHIOPIA’S AGRICULTURE SECTOR IMPORTANT?

Ethiopia is fundamentally an agrarian country. Although the transformation towards a more manufacturing and industrially oriented economy is well underway, the agriculture sector continues to be the most dominant aspect of the Ethiopian economy, accounting for nearly 46% of GDP, 73% of employment, and nearly 80% of foreign export earnings. Furthermore, the majority of the agriculture sector is made up of smallholder farmers who live off of less than 2 hectares of land.

As such, transformation of the agriculture sector will be central in Ethiopia’s drive to reach middle-income country status by 2025. While many opportunities exist to accelerate growth and transformation in the sector, there are also many systemic challenges that must be overcome.

Ethiopia has long recognized the importance of agriculture sector transformation for stability and growth. Over two decades ago, Ethiopia put agriculture at the heart of its economic development by launching its Agriculture Development Led Industrialization (ADLI) strategy. This strategy puts agriculture at the forefront of Ethiopia’s development process. It also provides an overarching plan for economic development on the basis of agricultural transformation for increased productivity, production and product quality. This would then lead to increased employment, incomes, and investable surplus for the development of other sectors of the economy.

Growth rate of GDP and Agriculture

Source: GTP Annual Progress Report CSA(2013)
Ethiopia is one of the few African countries that have consistently met both of the African Union’s CAADP (Comprehensive Africa Agricultural Development Program) targets of: (1) increasing public investment in agriculture by 10% by year 2008, and (2) boosting agricultural production by an average annual growth rate of at least 6% by 2015.

On the metric related to spending on agriculture as a percentage of overall government expenditure, Ethiopia has invested an average of 14.7% of government spending on the agriculture sector since 2003. There have also been considerable gains in increasing agricultural productivity: since 2006/07, overall agricultural production of cereals has increased by 45% while production levels per hectare (yield) have grown by 22% in the same period.

Fueled in large part by the growth of the agriculture sector, from 2000 to 2010, Ethiopia was the fifth fastest growing country in the world. The Economist magazine also expects that the country will be the third fastest-growing economy from 2011 to 2015.

Despite these staggering achievements, there is still more work to be done. On average, national yields of the main cereals, such as maize, wheat, barley and sorghum, have increased at a faster pace than the rest of the world, and yet Ethiopia’s yields are still only 55% of the overall world averages. Although the transition of subsistence oriented smallholder farmers into more market oriented production has already begun, there are still many years ahead. Large-scale value addition and agro-industrialization are also expected to be more robust in the coming years.

Agriculture Sample Survey. CSA, 2012/13
http://data.worldbank.org/indicator/AG.YLD.CREL.KG
Agriculture expenditure share in total expenditure (%)
WHAT IS THE AGRICULTURAL TRANSFORMATION AGENDA?

Many agriculture economists will convincingly argue that replicating the type of growth Ethiopia has seen in the past ten years will be far more difficult to repeat in the next ten years. Historically, developing countries achieve very high growth rates in the early stages of development. These growth rates inevitably drop off as the sector increases in size and complexity. However, a number of countries have been able to maintain a high level of growth over an extended period, or entered into a second phase of fast growth after a short period of consolidation.

Several years ago, Ethiopia recognized this trend and sought to address any possible slow-down it might face proactively, before it started. This led to an engagement with the Bill & Melinda Gates Foundation, which resulted in a series of diagnostic studies led by the Ministry of Agriculture. The recommendations from this study provided some important lessons from other countries that have allowed Ethiopia to develop its own approach to maintain its high level of agricultural productivity and production growth while fundamentally transforming the sector; shifting subsistence based smallholder farmers into market oriented producers that continue to fuel overall economic growth and transformation.

This approach requires a systematic and multi-stakeholder approach to identify and prioritize the main drivers of transformational change. It also requires leadership and ownership of the approach by the highest levels of government and buy-in from all key stakeholders and partners. Finally, it requires an effective entity that can catalyze the process and provide the necessary horsepower to support the execution of the interventions intended to bring about transformational change.
In Ethiopia, an Agricultural Transformation Council (chaired by the Prime Minister) provides strategic direction and leadership in prioritizing the key Deliverables that are expected to transform Ethiopia’s agriculture sector. The aggregation of the Deliverables across priority program areas constitutes the Agricultural Transformation Agenda – a series of strategic and well-coordinated interventions.

The Deliverables within the Transformation Agenda are classified into four broad program categories:

1. **Value chains**: include crops and commodities that are deemed to be of the most significant importance to Ethiopia’s smallholder farmers and the economy at large. Initial focus has been on key cereals (tef, wheat and maize) that are critical for food security. Additional focus has also been placed on high value crops, such as oilseeds (especially sesame) and pulses (especially chickpeas). Livestock has also been prioritized for focus going forward.

2. **Systems**: constitute the key building blocks of prioritized value chains. These include areas such as seed systems, soil health and fertility, cooperatives/farmer organizations, and research and extension systems.

3. **Crosscutting Initiatives**: ensure that the solutions identified in the value chain and systems program areas consider important issues that will mitigate unintended consequences and address issues of social, environmental and financial sustainability. These areas include gender, technology access and adoption, climate and environmental sustainability, and monitoring, learning, and evaluation.

4. **Special Projects**: provide a platform to address unique issues that do not easily fit into any of the above areas, but that can catalyze the transformation of the agriculture sector by addressing a key structural or systemic issue. One such issue is the strengthening of public private partnerships that have the capability to introduce additional capacity, technology and innovation from the private sector.

Finally, this approach also leverages learnings from the diagnostic study facilitated by the Gates Foundation to carve out a separate operational structure, outside of the normal activities of the Ministry of Agriculture and other partners, to develop and execute the Deliverables within the Transformation Agenda. While the MoA and many other partners at the federal and regional level play critical roles in identifying and implementing most of the Deliverables in the Agenda, the carving out of the Agenda as a whole is intended to provide an additional level of focus and attention.

The regulation establishing the Agricultural Transformation Council also created the Agricultural Transformation Agency (ATA) to support the successful implementation of the Deliverables in the Agriculture Transformation Agenda.
What is the role of the ATA within the Agricultural Transformation Agenda?

As the Secretariat to the Agricultural Transformation Council, the Agricultural Transformation Agency (ATA) plays a number of different and sometimes overlapping roles in the successful implementation of the Transformation Agenda. First it has the responsibility to provide the Council with the objective data to make decisions on the prioritization of interventions that constitute the Deliverables within the Transformation Agenda. Working in close partnership with the Ministry of Agriculture, Regional Bureaus of Agriculture, and other partners, the ATA is responsible for coordinating the development of national strategies that highlight transformational interventions in key aspects of the agriculture sector. The interventions identified in these strategies are further prioritized by the Agricultural Transformation Council to constitute the Deliverables that are included in the Transformation Agenda.

Once the Transformation Agenda has been set and the owner for each Deliverable has been identified, the ATA plays two roles:

• First, the ATA supports the owners of Deliverables in the Agricultural Transformation Agenda to implement the specific Deliverable on time and at the highest quality. On an as-requested basis, the ATA provides support in capacity building, problem solving, project management, and coordination.

• Second, in unique circumstances, the ATA may be asked to directly manage the execution of a Deliverable in the Agricultural Transformation Agenda.

The ATA also has a role beyond supporting the establishment and execution of the Transformation Agenda. As the Secretariat of the Transformation Council, the ATA provides the Council with an objective accounting of the progress made on all the Deliverables in the Transformation Agenda.

While there certainly could be a perceived conflict of interest between the ATA’s role in reporting on Deliverables while also supporting or directly implementing the same Deliverables, the overarching role of the Ministry of Agriculture as the operational owner of all activities within the agriculture sector and the role of the Minister of Agriculture as the Vice-Chair of the Agricultural Transformation Council are expected to mitigate some of these issues.

Ultimately, the ATA is a problem solving and catalyzing organization – one that seeks to support the efficient removal of bottlenecks, while providing fuel to the solutions that will transform the agriculture sector.
WHAT DOES THIS ANNUAL REPORT COVER?

This Annual Report is an overview and high-level update of the Deliverables that comprise the Agricultural Transformation Agenda. The progress achieved, and that which will be achieved, on the specific Deliverables comes from the leadership and efforts of many different organizations.

The Ministry of Agriculture and Regional Bureaus of Agriculture provide leadership in mobilizing the agriculture sector in executing the Deliverables. Various implementing partners – Directorates within the MoA and RBoAs; federal entities such as EIAR and FCA; the private sector; and NGOs/civil society organizations – do much of the heavy lifting in executing the Deliverables. Development partners also support many of the Deliverables by providing strategic input and funding support.

While strong progress has been made on many critical Deliverables, there have also been challenges in other areas. On the positive side, there have been real, measurable gains in the expansion of the “TIRR” (Tef, Improved seed, Reduced seed rate, and Row planting) technology package. The work on the EthioSIS (Ethiopian Soil Information System) digital soil mapping project is also expected to result in a national soil atlas during 2014.

Despite these gains, there are also areas where challenges exist and a more concerted effort will be required to accelerate progress in the coming year. Two such areas are the cooperatives sector and improving market linkages between smallholder farmers and commercial buyers. There have been some structural improvements introduced in the cooperatives sector, but more focus will be necessary to improve the performance and accountability of individual cooperatives so that they serve their members and the rural community more efficiently. On the market linkage side, there has been some progress in expanding structured market opportunities for smallholder farmers, but improving the alignment of key strategic partners is necessary to accelerate further progress.

The next page provides an overview of the status on all 64 Deliverables included in the Agricultural Transformation Agenda during 2006 E.C. (2013/14). Further elaboration of the progress in key Deliverables in the Transformation Agenda is included in the Highlights and Program Updates sections of this Annual Report.
THE TRANSFORMATION AGENDA IN 2013/2014 INCLUDES 64 DELIVERABLES

- **Seed**: Develop & release Seed Strategy
- **Seed**: Capacitate federal/regional seed regulatory agencies
- **Seed**: Expand Direct Seed Marketing Initiative
- **Seed**: Undertake genetic restoration of key seed varieties
- **Seed**: Capacitate seed research centers
- **Seed**: Improve seed industry contracting process
- **Soil**: Develop & release Soil Sector Strategy
- **Soil**: Complete EthioSIS digital soil mapping project
- **Soil**: Expand woreda level soil fertility mapping
- **Soil**: Establish five fertilizer blending facilities
- **Soil**: Establish MoA Soil Fertility Directorate
- **Soil**: Launch soil test-based fertilizer strategy
- **Soil**: Create a national framework for ISFM and expand trials and scale-ups
- **Soil**: Expand production/distribution of soil amendments
- **Coops**: Develop cooperative certification system
- **Coops**: Improve cooperative auditing structure
- **Coops**: Establish Ardaita as a Cooperative Center of Excellence
- **Coops**: Test cooperative commission-based marketing
- **Input & Output Markets**: Boost exports of strategic crops
- **Input & Output Markets**: Scale up input credit system and launch Rural Finance Strategy
- **Input & Output Markets**: Strengthen warehouse receipt system
- **Input & Output Markets**: Improve fertilizer supply chain
- **Input & Output Markets**: Establish a contracts platform
- **Input & Output Markets**: Design and launch Community Receipt System
- **Research**: Develop and release Research Sector Strategy
- **Research**: Develop new career path structure for researchers
- **Research**: Approval of revised biosafety proclamation
- **Research**: Launch ADPLAC strategy
- **Research**: Develop strategy to improve technology release process
- **Research**: Strengthen capacity of Holetta biotech research
- **Research**: Establish Ethiopian Agricultural Research Council
- **Extension**: Release Extension Sector Strategy
- **Extension**: Develop new DA career path
- **Extension**: Strengthen extension alignment across institutions
- **Extension**: Accelerate FTC capacitation
- **Household Irrigation**: Release HHI Sector Strategy
- **Household Irrigation**: Launch groundwater mapping project
- **Household Irrigation**: Establish sustainable HHI market linkages
- **Household Irrigation**: Establish HHI pump procurement guidelines
- **Household Irrigation**: Establish standards for HHI pump
- **Tef**: Release Tef Value Chain Strategy
- **Tef**: Establish integrated Tef initiative
- **Tef**: Scale up TIRR - productivity improvement package
- **Tef**: Test tef double cropping with pulses
- **Wheat**: Release Wheat Value Chain Strategy
- **Wheat**: Establish integrated wheat crop initiative
- **Wheat**: Expand EGTE local wheat purchases
- **Maize**: Release Maize Value Chain Strategy
- **Maize**: Establish integrated maize initiative
- **Maize**: Expand WFP (P4P) local maize purchases
- **Technology**: Develop agricultural mechanization strategy
- **Technology**: Design and testing of new row planters
- **Technology**: Deploy multi-crop threshers and harvesters with various economic models
- **Gender**: Conduct MoA gender audit
- **Gender**: Establish Women Economic Leadership project
- **Climate**: Improve use of climate information through downscaled forecasting and rain gauges
- **Climate**: Enhance and expand the application of conservation agriculture
- **MLE**: Strengthen capacity of MoA-PPD
- **Special Projects**: Strengthen capacity of EIA
- **Special Projects**: Convert Grow Africa/G8 investment commitments
- **Special Projects**: Develop Cluster Framework
- **Special Projects**: Launch Coop Storage Facilities project
- **Special Projects**: Launch extension via mobile phone project

On Track  Slight Delay  Significant Delay

- 44.Tef: Scale up TIRR - productivity improvement package
- 45.Tef: Test tef double cropping with pulses
- 46.Wheat: Release Wheat Value Chain Strategy
- 47.Wheat: Establish integrated wheat crop initiative
- 48.Wheat: Expand EGTE local wheat purchases
- 49.Maize: Release Maize Value Chain Strategy
- 50.Maize: Establish integrated maize initiative
- 51.Maize: Expand WFP (P4P) local maize purchases
- 52.Technology: Develop agricultural mechanization strategy
- 53.Technology: Design and testing of new row planters
- 54.Technology: Deploy multi-crop threshers and harvesters with various economic models
- 55.Gender: Conduct MoA gender audit
- 56.Gender: Establish Women Economic Leadership project
- 57.Climate: Improve use of climate information through downscaled forecasting and rain gauges
- 58.Climate: Enhance and expand the application of conservation agriculture
- 59.MLE: Strengthen capacity of MoA-PPD
- 60.Special Projects: Strengthen capacity of EIA
- 61.Special Projects: Convert Grow Africa/G8 investment commitments
- 62.Special Projects: Develop Cluster Framework
- 63.Special Projects: Launch Coop Storage Facilities project
- 64.Special Projects: Launch extension via mobile phone project
2. Annual Highlights
Data, research, quantifiable information, performance history, and statistical analysis are all essential components necessary to inform and fuel transformational change. For Ethiopia’s Agricultural Transformation Agenda, reliable data and analysis, in all of their forms, are the pivotal commodity that inform the identification and prioritization of interventions and Deliverables. Within each Deliverable in the Transformation Agenda, it is the availability of objective data that provides the information necessary for course corrections and validation that quantifiable progress is underway. At the smallholder farmer level, local and context specific information is vital to ensure that the investments made on each plot of land are those that will yield the greatest return.

A number of Deliverables within the Transformation Agenda focus on ensuring that Ethiopia generates and effectively disseminates increasing amounts and types of data to inform decision making at all levels. Three specific efforts highlight the progress in this regard.

The first is the Ethiopian Soil Information System (EthioSIS) digital soil fertility mapping project. In the past, the lack of detailed, localized soil fertility information was hindering the ability of extension agents to guide farmers in making the most effective recommendations for soil nutrient applications. However, through a strategic partnership with several national and international organizations, including Columbia University, the Africa Soil Information Service (AfSIS), Wageningen University, and the National Soil Testing Center (NSTC) in Ethiopia, the EthioSIS project is working to change that. By collecting on-site physical information and soil samples across the country, plus performing soil analysis for 250 woredas in digitized form, EthioSIS is working to project woreda, regional and nationwide estimates of soil nutrient status. This data is then used to prescribe corrective action, and to provide more customized crop and fertilizer recommendations to help smallholder farmers increase their productivity.

Preliminary findings from the mapping work conducted in 162 woredas shows that, in addition to nitrogen and phosphorus, sulfur, potassium, boron and zinc nutrients are deficient in many areas. This data indicated that one compound fertilizer (NPS) and five blended fertilizers (NPSB, NPKSB, NPSZnB, NPKSZnB, and NPSZn) are needed to address the key nutrient deficiencies in the tested soils.

Building on this quantitative data generated from the field and laboratory work, the EthioSIS project undertook extensive demonstrations (approximately 30,000 in total, both on farmers plots and at Farmer Training Centers). These demonstrations helped to validate the new fertilizers while at the same time introducing their potential to smallholder farmers.

In connection with this, Ethiopia began importing new fertilizer ingredients for the first time in more than four decades, in order to distribute to farmers as blends. At the same time, to further enhance blended fertilizer availability, five fertilizer blending plants are being constructed in four of the country’s major regions (Tigray, Amhara, Oromia and SNNP) to deliver customized, field-level soil nutrients to Ethiopia’s smallholder farmers.
Example of Woreda level mapping: South Ari - SNNPRS

**Formula 4:**
\[ 16.9 \text{ N} - 33.8 \text{ P}_2\text{O}_5 - 0.0 \text{ K}_2\text{O} + 7.35 + 2.23\text{Zn} + 0.67\text{B} \]
\[ \rightarrow \text{NPSBZn} \]  
(86 kg/100kg NPS + 6.4 kg/100kg ZnSO₄ + 4.6 Kg/100kg Borax)

**Formula 1:**
\[ 19.0 \text{ N} - 38.0 \text{ P}_2\text{O}_5 - 0 \text{ K}_2\text{O} + 7.05 + 0.00\text{Zn} + 0.00\text{B} \]
\[ \rightarrow \text{NPS} \]

**Formula 2:**
\[ 18.1 \text{ N} - 36.1 \text{ P}_2\text{O}_5 - 0.0 \text{ K}_2\text{O} + 6.75 + 0.00\text{Zn} + 0.71\text{B} \]
\[ \rightarrow \text{NPSB + Cu spray (foliar app.)} \]  
(95kg/100kg NPS + 4.9 kg Borax)

Example of Woreda level mapping: East Wollega-Oromiya

**Formula 5:**
\[ 13.0 \text{ N} - 26.1 \text{ P}_2\text{O}_5 - 13.7 \text{ K}_2\text{O} + 5.65 + 1.72\text{Zn} + 0.51\text{B} \]
\[ \rightarrow \text{NPKSBZn} \]  
(68.7kg/100kg NPS + 22.9kg/ha KCl + 49.4kg/ha ZnSO₄ + 3.56 Borax)

**Formula 4:**
\[ 16.9 \text{ N} - 33.8 \text{ P}_2\text{O}_5 - 0.0 \text{ K}_2\text{O} + 7.35 + 2.23\text{Zn} + 0.67\text{B} \]
\[ \rightarrow \text{NPSBZn} \]  
(86 kg/100kg NPS + 6.4 kg/100kg ZnSO₄ + 4.6 Kg/100kg Borax)

**Formula 2:**
\[ 18.1 \text{ N} - 36.1 \text{ P}_2\text{O}_5 - 0.0 \text{ K}_2\text{O} + 6.75 + 0.00\text{Zn} + 0.71\text{B} \]
\[ \rightarrow \text{NPSB} \]  
(95kg/100kg NPS + 4.9 kg Borax)
Climate information is another area where data analysis and timely communication can be pivotal in providing extension workers and farmers with valuable decision-making information. In the agriculture sector, climate is both a resource and a hazard. Climate change and variability has led to visible shifts in the cropping calendar which makes the use of climate information for agronomic decision making very important. However, there is a big gap between what farmers need and available seasonal climate forecasts in the country.

In Ethiopia, weather and seasonal climate forecasts of the National Meteorological Agency (NMA) cover wide areas. However, such regional-scale outlooks are far from providing a climate service which is adaptable to farmers’ needs. Since the majority of the country’s agriculture is rain-fed, advances in agronomic interventions like improved seed varieties, blended macro/micro nutrient fertilizers and new mechanized technologies require locally specific, timely and demand-driven climate information to maximize the benefits of the interventions. As such, climate information should be treated as an essential ‘input’ (such as fertilizers) to achieving productive outputs.

Moreover, strengthening the connection climate services providers have with users is very important. This can be done by engaging with user communities, building institutional and technical capacity, and decentralizing climate services to be closer to user needs. During 2013, the ATA, NMA and MoA, have undertaken efforts to provide local, user-tailored forecasts to 28 woredas. In addition, a project to install plastic rain gauges at Farmer Training Centers (FTCs) and on selected model farmer plots has been tested in 28 target woredas. Rain gauges have the ability to empower FTCs to monitor rainfall in their respective areas, enabling farmers to undertake evidence-based agronomic decisions. Rain gauges also ensure that farmers will not need to solely rely on traditional crop calendars to make decisions about planting dates or irrigation practices when rainfall is increasingly variable and inconsistent.

Of course, even the most downscaled, accurate forecast has limited benefits unless demand is created among farmers, training them to use the data to make agronomic decisions during the crop season. To help promote this, the MoA, NMA and ATA are helping to train Development Agents and farmers to monitor rainfall, thereby empowering local, independent decisions and creating a better understanding of the true benefits of adopting new technologies in all areas of agriculture.

Finally, the ATA and the Ministry of Agriculture are piloting an Integrated Voice Recording (IVR) and SMS system leveraging mobile technologies to disseminate agricultural information to smallholder farmers.
Typically, extension information is cascaded through various levels of the extension system before reaching its intended recipient. For example, agronomic information is developed and crafted by the Ethiopian Institute of Agricultural Research and the federal Ministry of Agriculture for use by smallholder farmers. This information is then passed down to regional, zonal and woreda staff during annual training sessions. The information will then be delivered to Development Agents, who will eventually disseminate it to smallholder farmers at training meetings. This modality is often stretched out over the course of 6-9 months, with many instances when the intended information may never actually reach the smallholder farmer.

In order to enhance the existing approach, the MoA and ATA have come up with an inventive way of distributing information to smallholder farmers. The Interactive Voice Response (IVR) and SMS system is a technology that will allow individuals to call into a hotline and access a wide range of relevant agronomic information. Through the IVR/SMS system, once the information has been agreed upon and uploaded, smallholders and DAs will have direct access to the pertinent agronomic content whenever it is needed. Users will be able to access pre-recorded messages, in a wide range of languages, at their own convenience.

Distributing agricultural extension materials can be costly and time consuming; however, through this new system, information will be available around the clock. Once the content has been agreed upon, it will be available for anyone to access. Based on the user’s responses to various prompts, and information they enter using their keypads, the user will get specific, tailored agronomic information, in local languages they can understand, thus supplementing the training provided by DAs in the traditional approach.

During 2013, this mobile based IVR/SMS system was piloted with smallholder farmers engaged in irrigated agriculture (more details in the Special Projects section of this Annual Report). Based on this success, the ATA and MOA have begun to scale up this approach to all farmers in Ethiopia during the 2014 main planting season.
Ultimately, any improvement in the livelihoods of smallholder farmers begins by increasing their productivity and production levels. Ethiopia has made significant improvements in this regard over the past decade. Since 2003/4 productivity and production of cereal crops has increased by an annual average of 5.3% and 9.1% respectively. The gains over the past year have been even more staggering. Preliminary reports from the Central Statistics Agency indicate a 15.35% increase in total cereal production over the past year. Progress has been even more remarkable for the three crops (tef, wheat and maize) initially prioritized by the Agricultural Transformation Agenda.

The effort to increase production and productivity within the Agricultural Transformation Agenda seeks to build on the successes of the past decade and introduce innovations that will provide a sustainable base to continue and accelerate the progress. Interventions across the entire value chain have been identified and prioritized to support this effort.

In the areas of access to inputs, innovations such as the Fertilizer Blending and Direct Seed Marketing projects aim to improve the availability of high quality seeds and fertilizers to farmers across Ethiopia. The Fertilizer Blending project envisions the creation of five regionally based fertilizer blending facilities that leverage the data generated by the EthioSIS and woreda level soil fertility mapping initiatives to identify and produce complex fertilizers within Ethiopia. The fertilizer blends provided by these facilities will enable smallholder farmers to access many nutrients that previously had not been available from the standard DAP and UREA mix that they have been using for decades. This project works with Cooperative Unions (woreda level farmer associations) to own and operate the blending facilities as commercial ventures.

The Direct Seed Marketing (DSM) project operates on the last mile input distribution aspect of the value chain. This project seeks to expand smallholder farmers’ access to inputs by introducing well trained private retailers as a complementary model to primary cooperatives in distributing improved seeds to smallholder farmers. The increased retail channels and competition have shown considerable impact in increasing the amount of seed marketed as well as reducing the carryover stock and mismatch between supply and demand.

Beyond these investments and interventions, the introduction of new technologies through a strengthened extension system has been a major area of effort for the Transformation Agenda. The efforts in extending the Tef, Improved Seed Variety, Row Planting, Reduced Seed Rate (TIRR) technology package is an illustration of the significant yield increases that can be realized from seemingly simple technologies.

Source: CSA(2013)
The origins on the current tef technology package stretch all the way back to 2009, when ATA Tef Program Director, Tareke Berhe, and ATA Senior Technical Expert, Zewdie Gebretsadik, were working for Sasakawa Africa Association. Together they partnered with the Debre Zeit Agricultural Research Center to test the practicality and potential of row planting and transplanting of tef. The research also experimented with using a reduced seed rate of 2.5-5 kg/hectare, compared with traditional broadcasting practices that often used 30-50 kg/hectare. By reducing the seed rate and planting in rows, the trials showed that farmers could potentially double or even triple their tef grain and straw yields, while at the same time saving considerable expense on excess seed at planting.

The effort to introduce this shift in planting techniques ramped up in 2011, when the MoA and its regional agricultural extension system, with support from the ATA, began on-field trials of the new technologies. What started with just two model farmers planting under irrigation in April 2011 was then expanded to 1,430 farmers and 90 Farmer Training Centers during the 2011 main rainy season, which resulted in a 65% yield improvement compared to the national averages. Bolstered by these improvements, the effort was scaled up to reach approximately 167,000 farmers in 2012, and more than 1.3 million in 2013. A 70% productivity increase was recorded over the national CSA averages in both 2012 and 2013 by farmers who utilized the new technologies. Plans are now underway to expand this reach to 3.5 million farmers for the next main cropping season.

Crop experts at the Ethiopian Institute for Agricultural Research, the Ministry of Agriculture and the ATA have also worked together to develop technology packages for agronomic practices of other major cereals crops, such as wheat, maize, barley and sorghum, over the past year. These technology packages have been incorporated into the training of extension agents and are being implemented by regional governments across the country. Furthermore, these technology packages have been condensed into smaller formats and have been made available directly to farmers using a mobile phone based Interactive Voice Recording (IVR) System.
Annual cereal production, national level

Million quintals

1 Other cereal include Finger millets, Oats/'Aja' and Rice

Source: Central Statistical Agency Agricultural Sample Surveys 2005-06 to 2012-13
Yields of key cereals, national level Qts/ha

Source: Central Statistical Agency Agricultural Sample Surveys 2005-06 to 2012-13
A focus on increasing productivity and production alone will not help Ethiopia achieve its food security and economic growth targets. Given Ethiopia’s ambition to commercialize its smallholder farmers, food security will rely increasingly on the ability of farmers to access markets for their production as well as their demand for food need. In this regard, each of the Transformation Agenda’s priority crop initiatives have included interventions focused specifically on creating commercial-level, structured demand sinks capable of absorbing increased volumes.

For example, a core aspect of the Maize Initiative is a partnership with the World Food Programme (WFP) to catalyze these types of market opportunities. A Maize Alliance of public, private and development partners has been working with some of the largest maize cooperative unions to link maize farmers with the WFP’s Purchase for Progress (P4P) Initiative. The aim of the program has been to build the capacity of the unions to deliver significant quantities of maize to large commercial buyers, and to use this structured demand to encourage further growth in production. Sixteen unions signed forward delivery contracts to deliver nearly 20,000 MT of maize to WFP in 2013. They also secured minimum-collateral output financing from the Commercial Bank of Ethiopia (CBE) to purchase maize from their members for onward delivery to WFP. The partnership is intended to test, at scale, the linkage of smallholder maize farmers to structured demand, and to use that to drive increases in production efficiency.

Participation for the 2014 effort has increased to 29 unions, with 12 of them having received output financing so far. Twenty of the unions have also begun to aggregate their maize, 10 of which (in the Oromia and Amhara Regions) are making use of mobile storage units (MSUs) to store any potential surplus harvests. The total size of contracts for purchase has also increased from 20,000 MT to 40,000 MT.

More importantly, the ATA, WFP and members of the Maize Alliance have begun working together in order to expand the platform established for P4P purchases to include other commercial buyers. In this way, the structure that was initially designed to link smallholder farmers to food aid purchases through WFP can be leveraged to include even larger commercial buyers who can sustainably purchase surplus production for longer periods of time.

A similar story can be seen in the market component built into the Transformation Agenda’s Wheat Initiative. A partnership has been established with the Ethiopian Grain Trade Enterprise (EGTE) with the aim of replacing the ≈600,000 tons of wheat currently imported annually with locally produced wheat over a 3-5 year timeframe. EGTE has now signed contracts with four unions and is in the process of signing contracts with an additional six.
New marketing ground has also been broken in the tef sector. As detailed in the 2012 Annual Report, a forward delivery contract was established between the Erer Cooperative Union and Mama Fresh Injera, PLC, the country’s leading injera manufacturer and exporter. Through this arrangement, Mama Fresh began sourcing its tef directly from local smallholder farmers, starting with an agreement to purchase 720 metric tons of white magna tef delivered from the 2012 planting season. As part of the arrangement, training in agronomic practices and principles of contract farming were provided to the Erer Coop farmers, helping to ensure the consistency and quality needed to meet Mama Fresh Injera’s commercial standards. Over the past year, in the effort to fulfill this contract, several obstacles were encountered, including a lack of adequate storage space for the grain deliveries, and delays in payment due to Mama Fresh’s inability to access all of the necessary financing. In the end, only half of the target tef volume (360 MT) was delivered and paid. However, encouraged by the potential of this partnership, despite the challenges in the first year, Mama Fresh Injera and the Erer Cooperative Union have agreed to renegotiate a new contract for the coming harvest season and continue with the partnership.

Contract farming agreements such as these have the potential to improve smallholder farmers’ livelihoods and increase agriculture sector growth in Ethiopia by better linking buyers and sellers. However these types of contracts remain rare in Ethiopia due to numerous challenges faced by both buyers and sellers, including difficulties in agreeing to quality standards, facilitating negotiations, and enforcing the ultimate agreements. To overcome these obstacles, an international consultancy was engaged to help develop a proposal that recommends the creation of an institutional solution; a contract platform that facilitates deals between buyers and sellers while systematically addressing the issues encountered in contract farming. Work is now underway with the Ministry of Trade and the Ethiopian Commodity Exchange to establish this new contract platform division aimed at increasing the quantity of output sold through formal contracts.
3. Value Chain Updates
Often considered an “orphan crop” – one which hasn’t received the same kind of international attention from agronomists and commercial growers – tef has yet to fully benefit from modern farming technologies or techniques. These constraints have kept the crop’s potential yields low, while driving the price of the grain out of range for many Ethiopian families. Boosting yields and production of tef, however, has the potential to significantly impact the livelihoods of millions of smallholder farmers along with the country’s economy as well.

The Transformation Agenda interventions aimed at strengthening and expanding the tef value chain include: scaling up the rollout of a core “TIRR” production enhancing technology package, including training and support for new agronomic practices; promoting a tef and chickpea double-cropping system; conducting research on the effectiveness of new and improved planting techniques; and releasing a comprehensive tef value chain development strategy.

As detailed in the Annual Highlights section, preliminary results indicate that significant progress was achieved over the past year in scaling-up the reach of the new “TIRR” technologies. What began as a trial with just two smallholder farmers in 2011 was expanded to reach nearly 2 million farmers in 2013. Additional progress has also been made in introducing mechanized farming implements, both pre and post-harvest, to thousands of tef smallholders. And a national Tef Value Chain Working Strategy was completed and released, including recommendations for ways to continue building the economic potential of this highly nutritious, gluten-free grain, here in Ethiopia and abroad. Support for Transformation Agenda Deliverables related to the tef value chain has been provided by UNDP, USAID, and DFATD-Canada, among others.
Progress on specific Deliverables within the Agricultural Transformation Agenda for the Tef Value Chain include:

Tef Sector Strategy
Given the enormous importance of tef to Ethiopia, both economically and culturally, a comprehensive tef value chain development strategy has the potential to direct sustained growth across the entire value chain. A working strategy document was prepared and released during 2013 in collaboration with the MoA, Regional Bureaus, and other key partners in a series of multi-stakeholder workshops. This process identified bottlenecks throughout the tef value chain along with detailed recommendations for necessary interventions. The Tef National Working Strategy is now serving as a roadmap for addressing key tef sector challenges.

“TIRR” Package Scale-up
The core “TIRR” technology package (Tef, Improved seed, Reduced seed rate, and Row planting) prioritized for tef farmers by the agricultural extension system last year, led to significant increases in crop yields across the country. Detailed analysis of the 2013 TIRR package, with a sample of 1,300 farmers, showed average yield increases of 44% vs. the control group and 72% vs. the CSA national average. For the 2014 planting season, a scaled-up target of 3.5 million farmers has been set, with plans to provide increased access to improved inputs and financial resources, agronomic training, and marketing support. In addition, plans are also in place to expand farmer access to pre and post harvest technologies, such as walking tractors, row planters, broad bed makers, harvesters, and threshers.

Double Cropping
Research and testing has shown that Ethiopia’s tef crops are strong candidates for a legume based ‘double cropping’ system, whereby chickpea is planted on the same field, immediately following the season’s tef harvest. Not only does this technique increase the production from the farmer’s field, but with its nitrogen-fixing quality, chickpea actually returns valuable nutrients to the soil, helping to increase tef production the following season. Piloted in 12 woredas last year, the chickpea double-cropping trials produced very encouraging results. Plans for this year call for continued scale-up, with a particular focus on vertisols.
Tef production and yield across regions

Source: Central Statistical Agency Agricultural Sample Surveys 2005-06 to 2012-13
Regional figures revealed that over 1.3 million farmers planted tef using the “TIRR” technology package in 2013.

Source: 2013 Data from 39 Woredas and 1288 farmers in Amhara, Oromia, SNNPR and Tigray regions: (collected July 2013-January 2014)

Note: Analysis includes data from 1003 farmers (omitting error/outliers from the total data set of 1288)

<table>
<thead>
<tr>
<th>Planting Method</th>
<th>Quintals/hectare</th>
<th>Amhara (n=184)</th>
<th>Oromia (n=365)</th>
<th>SNNP (n=314)</th>
<th>Tigray (n=140)</th>
<th>Total (n=1003)</th>
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<tr>
<td>Row planting with reduced seed rate</td>
<td></td>
<td>17.9</td>
<td>20.4</td>
<td>18.1</td>
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<td>18.4</td>
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<tr>
<td>Broadcasting with traditional seed rate</td>
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<td>25.5</td>
<td>26.7</td>
<td>24.5</td>
<td>26.6</td>
<td>26.6</td>
</tr>
</tbody>
</table>

+44% increase in yields with row planting compared to broadcasting with traditional seed rate.
WHEAT

Last year, 4.8 million farmers produced 34 million quintals of wheat across 1.6 million hectares of Ethiopian land, making it one of the most important cereal crops in the country, particularly when targeting agricultural transformation. CSA estimates indicate that since 2006, the area used for wheat production has shown an average growth of 2.63% per year, while yield and total production have shown average annual growth rates of 5.25% and 7.8% respectively. In absolute terms, total national wheat production is expected to show a 64% growth in 2013/14 from what it was in 2006. Still, although Ethiopia has seen relatively steady improvement in wheat production in recent years, particularly in per hectare production, demand continues to outpace supply, and the production growth has been a fraction of what it could be with more focused effort and attention.

The objective of the Wheat Program is to support significant and sustainable increases in the productivity and incomes of smallholder farmers producing the crop, through the promotion of several key interventions, including access to high quality seeds and fertilizers, training in new and better agronomic practices, more efficient post-harvest processing and handling, and access to financing resources. The program further aims to support the growth of efficient, sizeable, and sustainable markets to help farmers convert their increased production into additional income.

As has now been demonstrated by many farmers in various regions of the country, wheat’s national average yield can be easily doubled simply by improving agronomic practices, providing improved access to technologies, and addressing market problems, such as the price difference between local wheat and subsidized imports. Last year, 400,000 farmers were targeted for productivity enhancing training and support. A forward delivery contract was also negotiated with a large commercial buyer, EGTE, with the aim of purchasing up to 250,000 MT of wheat, largely from smallholder farmers. Support for Transformation Agenda Deliverables related to the wheat value chain has been provided by USAID, UNDP, and DFATD-Canada, among others.
Progress on specific Deliverables within the Agricultural Transformation Agenda for the Wheat Value Chain include:

**Wheat Strategy**
A comprehensive strategy is critical to the long-term, sustainable development of the wheat value chain. This strategy has been in development through a collaboration between the MoA, EIAR, Ministry of Trade, and the ATA. Like all sector strategies developed as part of the Transformation Agenda, the Wheat Value Chain Development Strategy will identify existing bottlenecks, along with recommendations for a series of interventions.

**Wheat Initiative**
In 2013, recognizing that low average yields combined with high demand had been causing Ethiopia to import a significant amount of wheat from other countries, the MoA, with support from the ATA and other partners, initiated a plan to reverse this trend. Working with the Regional Agriculture Bureaus, a wheat productivity increase strategy was developed, with a goal of reaching at least 1 million farmers in three years with a comprehensive technology package designed to enable them to increase yields by at least 50%. By providing wheat farmers with access to improved seed, appropriate fertilizer combinations, financial services through mobile payment platforms, mechanization, and links to markets, the strategy aims to replace all current wheat imports with local production in three years. Following the 2013 effort, which targeted an initial 400,000 farmers, a benchmark assessment is being conducted by IFPRI to monitor the initiative’s impact.

**EGTE Purchase**
The Ethiopian Grain Trade Enterprise (EGTE) plays a big role in wheat marketing, importing wheat and distributing to millers and consumers to temporarily address the high prices and inflation created by the gap between demand and supply. As part of the Transformation Agenda, EGTE planned to buy 250,000 tons of wheat locally in 2013/14. To help link Ethiopia’s smallholders to this sustainable market, a comprehensive contract agreement was negotiated between EGTE and various unions and cooperatives. USAID’s AGP-AMDe project is supporting the unions, through loan guarantees, with access to working capital loans from the Commercial Bank of Ethiopia. A wheat supply chain assessment was also conducted by TechnoServe, from which actionable recommendations for future engagements are being drawn. This deliverable has faced some challenges in executing at the full scale of planned purchases, due to institutional and structural issues that require longer term solutions.
### Annual wheat production by region

**Quintals/hectare**

<table>
<thead>
<tr>
<th>Year</th>
<th>Amhara</th>
<th>Oromia</th>
<th>SNNP</th>
<th>Tigray</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005-06</td>
<td>6.1</td>
<td>13.2</td>
<td>1.5</td>
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<tr>
<td>2006-07</td>
<td>6.8</td>
<td>14.3</td>
<td>1.5</td>
<td>1.5</td>
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<tr>
<td>2007-08</td>
<td>6.2</td>
<td>13.4</td>
<td>2.2</td>
<td>2.2</td>
</tr>
<tr>
<td>2008-09</td>
<td>6.5</td>
<td>15.2</td>
<td>3.3</td>
<td>3.3</td>
</tr>
<tr>
<td>2009-10</td>
<td>9.0</td>
<td>16.8</td>
<td>2.4</td>
<td>2.4</td>
</tr>
<tr>
<td>2010-11</td>
<td>8.2</td>
<td>15.8</td>
<td>2.6</td>
<td>2.6</td>
</tr>
<tr>
<td>2011-12</td>
<td>7.7</td>
<td>16.8</td>
<td>3.0</td>
<td>3.0</td>
</tr>
<tr>
<td>2012-13</td>
<td>20.3</td>
<td>20.3</td>
<td>3.0</td>
<td>3.0</td>
</tr>
</tbody>
</table>

**CAGR (2005-2013)**: 5.6%

Source: Central Statistical Agency Agricultural Sample Surveys 2005-06 to 2012-13

### Annual wheat yield by region

**Qts/ha**

<table>
<thead>
<tr>
<th>Year</th>
<th>Amhara</th>
<th>Oromia</th>
<th>SNNP</th>
<th>Tigray</th>
</tr>
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<tbody>
<tr>
<td>2005-06</td>
<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
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</tr>
<tr>
<td>2006-07</td>
<td>1.8</td>
<td>2.0</td>
<td>2.0</td>
<td>1.4</td>
</tr>
<tr>
<td>2007-08</td>
<td>1.9</td>
<td>2.0</td>
<td>1.4</td>
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<tr>
<td>2008-09</td>
<td>2.0</td>
<td>2.0</td>
<td>1.4</td>
<td>1.4</td>
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<tr>
<td>2009-10</td>
<td>1.9</td>
<td>2.0</td>
<td>1.4</td>
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<td>2010-11</td>
<td>1.9</td>
<td>2.0</td>
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<tr>
<td>2011-12</td>
<td>2.0</td>
<td>2.0</td>
<td>1.4</td>
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<tr>
<td>2012-13</td>
<td>2.1</td>
<td>2.1</td>
<td>1.4</td>
<td>1.4</td>
</tr>
</tbody>
</table>

**CAGR (2005-2013)**: 4.8%
WHEAT UPDATES

Local wheat production and imports
2002-2013 (Million MT)

A wheat import is rising at an average of 9% annually while production is increasing at an average of 7% in the last decade.

Source: CSA Agricultural sample survey, ERCA Import data
MAIZE

Over half of all Ethiopian farmers grow maize, mostly for subsistence, with 75% of all maize output consumed by farming households. This makes maize Ethiopia’s leading cereal crop, in terms of production, with 6.2 million tons produced in 2013 by 9.3 million farmers across 2 million hectares of land. Maize is also the cheapest source of calorie intake in Ethiopia, providing 20.6% of per capita calorie intake nationally, according to a 2010 IFPRI study. However, instead of simply growing maize for subsistence, Ethiopian smallholder farmers have the long-term potential to cultivate large surpluses of the crop for domestic processed food production as well as for export. According to a 2012 FAO report, Ethiopia is the fourth largest maize producing country in Africa, and first in the East African region. It is also significant that Ethiopia produces non-genetically modified (GMO) white maize, the preferred type of maize in neighboring markets.

By instituting a variety of interventions aimed at helping farmers maximize their maize production – including access to improved seeds, fertilizer, credit, and training – and then connecting maize growing cooperatives and unions to commercial output markets, the Maize Program is working to transform this crop that once simply helped Ethiopia to survive, into one that allows its smallholder farmers and their families to thrive.

This past year, planning began for an integrated maize initiative, designed to increase farmer production while connecting cooperatives and unions to commercial output markets. A forward delivery agreement was also facilitated between maize growing unions and the World Food Programme’s Purchase for Progress (P4p) Initiative, providing a new, reliable market for smallholder maize farmers, starting with an initial volume of 19,000 MT purchased in 2013. Support for Transformation Agenda Deliverables in the maize value chain has been provided by the World Bank, USAID, and DFATD-Canada, among others.
Progress on specific Deliverables within the Agricultural Transformation Agenda for the Maize Value Chain include:

Maize Strategy
Similar to other value chains prioritized in the Agricultural Transformation Agenda, the Maize Program has also completed the development of a value chain strategy, including the identification of bottlenecks and a set of integrated interventions. The primary thrust of the Strategy are yield increasing approaches linked to aggregated supplies reaching maize-based agribusiness, and the promotion of agro-processing value addition, as the major drivers of transformation of the sub-sector.

Maize Initiative
Ethiopia’s current national maize yield is 3.2 metric tons per hectare, 28% above the developing world average of 2.5 MT/ha. The ‘developed’ world, however, sees average yields of 6.2 MT/ha, with some countries actually exceeding 10 MT/ha. To help Ethiopia’s maize farmers strive for these increased potential averages, the Maize Initiative is expanding a core technology package aimed at growing smallholder farmer productivity and yields, while at the same time connecting farmers to reliable demand sinks to better market their harvests. The core package, which includes increasing the availability of improved inputs, access to credit, and training on agronomic practices, has been scaled-up for 2014, with a goal of reaching 500,000 farmers across 50 target woredas in the Amhara, Oromia, SNNP, and Tigray Regions.

Purchase for Progress
Last year, with over $2 million USD in financing support from the Commercial Bank of Ethiopia (CBE), the World Food Programme’s Purchase for Progress (P4P) initiative sourced more than 19,000 MT of maize from 16 of Ethiopia’s cooperative unions. Building on this success, the effort is now being expanded for 2014 to a forward delivery goal of...
40,000 MT purchased by WFP, primarily from 29 cooperatives unions. The project is supported by a group of partner organizations which are providing an integrated package of interventions, including business advisory services, training in post-harvest handling, and — most crucially — unprecedented access to finance from CBE and other private commercial banks. Through participation in the Ethiopian Maize Alliance, the WFP, ATA, USAID’s AGP-AMDe, TechnoServe, SG 2000, the Federal Cooperative Agency, and CBE have combined forces to create a greater collective impact. By coordinating plans and resources, with the P4P initiative at the nucleus, the organizations are striving to expand this market linkage platform to other large commercial buyers beyond the food aid and development community.

Source: CSA 2013/14 production forecast, CSA 2010/11 Commercial Farms Survey, ATA Team Analysis
The amount of output finance loans unions accessed without collateral to aggregate and deliver maize to WFP

- **2013**
  - 16 Unions
  - 95 million ETB
  - 35 million ETB
  - 35 million ETB
  - Repayment has not started

- **2014**
  - 27 Unions
  - 136 million ETB
  - 110 million ETB
  - Repayment has not started

The volume of maize that has been supplied to WFP by Farmers’ Cooperative Unions through WFP-P4P Program

- **2013**
  - 16 Unions
  - 30,000 MT
  - 26,700 MT
  - 18,827 MT
  - Repayment has not started

- **2014**
  - 27 Unions
  - 40,000 MT
  - 37,500 MT
  - Delivery in progress

Legend:
- Green: Requested amount
- Orange: Disbursed amount
- Brown: Repayment
- White: Repayment has not started
- Dark Green: Target volume
- Yellow: Contracted volume
- Red: Delivered volume
- White with border: Delivery in progress
Throughout Ethiopia, most smallholder farmers still rely on rain-fed agriculture, lacking appropriate and affordable water control options. This increases their risk and limits their ability to expand into a wider variety of higher-value, income generating crops. Overcoming these challenges promises to provide Ethiopia’s smallholders with new, profitable sources of revenue, while improving resiliency and creating sustainable solutions to much of the country’s food security needs.

Given the enormous potential in irrigation, the MoA, ATA, and related partners are working to improve the adoption and effectiveness of household irrigation technologies throughout the country. Key interventions include a groundwater mapping exercise to identify the available water resources throughout the country, irrigation pump supply chain improvements, and the development of a high-value crops assessment tool to help strengthen the ability for farmers and extension agents to target the best crops for irrigation agriculture.

In 2013, the newly formed Federal Household Irrigation Working Group piloted a groundbreaking model to provide irrigation support services across the value chain in 21 woredas throughout four major regions. The program included agronomic training, equipment maintenance, and markets for high-value crops, with support from the Korean Rural Corporation. At the same time, the Working Group developed countrywide policy studies and information resources to inform policymakers’ recommendations and outreach efforts. Support for Transformation Agenda Deliverables in the HHI value chain has been provided by the World Bank, USAID, and the Royal Netherlands Embassy, among others.
Progress on specific Deliverables within the Agricultural Transformation Agenda for the HHI Value Chain include:

**Groundwater Mapping**

In order to address the lack of water resource knowledge available to inform irrigation practices in Ethiopia, a pilot shallow groundwater mapping exercise is underway. The mapping is intended to provide information on the depth of the static water table, the amount of shallow groundwater resources available, and the command area, as well as the number of beneficiary households that are within reach of water. With the support of the World Bank, a team from technology consultant RTI and Addis Ababa University are working with the MoA and ATA to pilot the WATEX radar technology in 89 woredas. To date, a draft shallow groundwater report and map have been generated, and submitted for stakeholder validation. If successful, the WATEX mapping technology will be scaled up across the country to generate a nationwide map of shallow groundwater resources that will inform recommendations for well drilling and water use policy.

**Irrigation Pumps**

The quality and availability of irrigation pumps in Ethiopia has suffered from three major bottlenecks: the absence of national quality standards, low domestic manufacturing capability, and inefficient procurement and distribution channels. To address these issues, a set of comprehensive interventions, including the creation of national pump standards has been initiated. Mandatory standards ensure that pumps conform to basic quality guidelines, and help farmers gain improved access to spare parts and maintenance services. A set of mandatory national standards for engine-powered irrigation pumps has been approved by the National Standard Council and announced by the Ethiopian Standards Agency. To enforce these standards, the Ethiopian Conformity Assessment Enterprise and MoA are now working to build a testing and certifying facility with support from Société Générale de Surveillance (SGS). In addition to the pump standards work, the HHI initiative is also working with iDE, an irrigation technology nonprofit, to develop training curriculums for the country’s Technical and Vocational Education Training Colleges. At the same time, a national study of the irrigation pumps supply chain is also being conducted, in order to understand how to reform procurement procedures and other policies that affect access to household irrigation technology.
High-value Crops
Certain crops, particularly specific fruits and vegetables, grow especially well under irrigation. However, irrigation technology requires an investment on the part of the grower, and most Ethiopian farmers have not received adequate training or tools to build these factors into their agricultural decision making. To address this, working with agriculture officials in the AGP woredas, a software program was developed that integrated agronomic and market infrastructure variables to determine the best crops for Ethiopia’s farmers to grow under irrigation. Building on this assessment, last year, the HHI Program began working with various partners to facilitate inputs and agronomic training for irrigation practices of these high-value crops. A specific focus was placed on vegetables that have been traditionally de-prioritized in extension efforts, including onions, tomatoes, carrots, potatoes, head cabbage, and hot pepper.

Market Linkages
As part of the MoA’s Natural Resource Management Directorate’s (NRMD’s) pilot of a sustainable irrigation service provision model, a series of contractual agreements was signed between 79 farmers’ cooperatives in 21 woredas and a major domestic buyer, the Ethiopian Fruit and Vegetables Marketing S.C., commonly known as ETFRUIT. The agreements call for ETFRUIT to source up to 20,000 MT of vegetables from the cooperatives in the first year, at flexible prices determined by local market conditions at the time of purchase. As HHI technology is eventually rolled out more extensively, these initial contractual agreements are intended to build the linkage that will allow ETFRUIT to source greater amounts of produce from smallholder farmers for export markets, including supplying to South Sudan, Djibouti, and other neighboring countries. It is also expected that other large commercial buyers can leverage this model to source fruits and vegetables from smallholder farmers.
In 2013, HHI has piloted interventions across the value chain in a sustainable service provision model. The 2013 pilot interventions do not currently include finance due to logistical constraints. RBoAs have been asked to identify appropriate woredas where finance already exists.
4. Systems Updates
Providing farmers with increased access to improved, high-quality seeds is a key step toward raising individual yields throughout Ethiopia, and thereby overall national production. In conjunction with other inputs, high-yielding seed varieties can significantly impact crop output, sometimes producing up to three times the volume vs. output from recycled seeds. This level of productivity enhancement offers obvious potential impact to Ethiopia’s smallholder farmers. Achieving this goal, however, takes a coordinated series of efforts, including seed research and breeding, maintenance of foundation seeds, multiplication of improved or certified seeds, and the creation of efficient distribution networks.

Toward this end, in parallel with the development of a seed sector strategy, some of the interventions now underway to strengthen Ethiopia’s seed system include: strengthening the research and quality maintenance capability of research institutes; evaluation and restoration of the genetic material of key varieties of major staple crops (maize, wheat, tef, and barley); supporting producers to produce the right type and quantity of seed for their target market; improving and expanding the distribution of improved and certified seed through multiple outlet channels; and strengthening the seed regulatory system in order to ensure that farmers receive the highest quality seed possible.

Over the past year, strong progress has been made in many of these areas. The Seed Sector Development Strategy was expanded to include the intermediate and informal subsectors as well. At the same time, work to establish regional seed regulatory authorities has moved into the implementation phase, while a new direct seed marketing scheme was piloted in 33 woredas, with plans to scale up the trial currently underway. Support for Transformation Agenda Deliverables related to the seed system has been provided by the Royal Netherlands Embassy, USAID, UNDP, the World Bank, and the Bill & Melinda Gates Foundation, among others.
Progress on specific Deliverables within the Agricultural Transformation Agenda for the Seed Sector include:

**Seed Sector Strategy**
A well-developed strategy for the improvement of Ethiopia’s seed sector, including the identification of systemic bottlenecks and recommendations for targeted interventions, is an essential tool for prioritizing specific areas to strengthen the country’s seed production and distribution systems. Following last year’s endorsement of an initial Seed Sector Strategy focused on the formal subsector, work was undertaken to expand the Strategy document to include the informal and intermediate subsectors as well. As nearly 90% of the seed reaching farmers in Ethiopia comes from these other subsectors, strengthening these areas is thus equally critical in order to ensure that the improved seed varieties developed by all subsectors effectively reach the largest number of farmers possible. By the end of 2013, the revised Sector Strategy was completed, including recommendations for strengthening all three subsectors. Following this, the draft strategy was presented at a national consultative workshop for further refinement, based on input and feedback from federal and regional level stakeholders. A technical committee comprised of representatives from the MoA Directorates, EIAR, and the ATA is working to incorporate stakeholder feedback and finalize the strategy document by mid 2014.

**Genetic Restoration**
Assessments conducted by the country’s research institutes in 2012 indicated that insufficient maintenance breeding capacity and a lack of quality control had led to significant genetic drift and contamination of much of Ethiopia’s breeder, pre-basic, and basic seeds. This causes the improved seed in circulation to lose considerable yield potential. In order to restore genetic consistency, the MoA, EIAR, and the ATA have been working to ensure that true-to-type nucleus seeds are planted to produce high-quality breeder seeds. Over the past year, the effort to restore the parental line genetic consistency of many of the improved varieties of seed already in use in Ethiopia was expanded beyond the initiative’s initial focus on hybrid maize to include other major crops, such as wheat, barley, and tef.

**Direct Seed Marketing**
The traditional method of distributing seed in Ethiopia has generally been a very time-consuming and resource-intensive process. This approach has also been burdened by a complex demand assessment mechanism and distribution chain. To overcome these bottlenecks, the Direct Seed Marketing (DSM) approach aims to reduce the number of steps in the seed supply chain, while increasing producer and channel competition. The ultimate goal of this streamlined, more competitive model is to provide farmers with a greater selection of improved seed varieties through multiple distribution channels. Piloted with hybrid-maize seed in 33 woredas last season, the DSM trial is currently being
In most of the DSM woredas that were part of the 2013 pilots, agents minimized carryover seed, selling the majority of the seed supplied by producers.

Agents were able to market most of the seed supplied by producers (nearly 90%). Real time inventory management by producers reduces carryover seed and supply shortfall. Official demand figures often under or over estimate real demand.

Source: Amhara and Oromia BoA Input divisions

expanded to close to 70 woredas across 4 regions. In each pilot woreda, multiple seed producers are encouraged to market their products through a variety of channels, including via primary cooperatives, private seed agents, and directly to farmers through their own sales outlets. Flexible pricing is another pillar of the program.

Previously, fixed prices made it difficult for producers to invest in quality beyond minimum standards and grow their footprint to more distant woredas and kebeles. With “open pricing,” seed producers can effectively compete with each other on all fronts, improving farmers’ choice.

Regulatory Authorities

Autonomous, impartial regulatory entities are needed to enforce seed quality standards in Ethiopia, overseeing inspection and certification efforts in their respective areas, in order to protect smallholder farmers and all related stakeholders. Following last year’s passage of an amended Seed Proclamation, work has been underway to establish such Regional Seed Regulatory Authorities in each of the country’s main seed producing regions. At the federal level, an apex regulatory body has also been established as a Directorate within the Ministry of Agriculture. This Directorate has been tasked to lead varietal release registration and protection activities across the country. Moreover, the Directorate will play a key role in coordinating and supporting the efforts of the Regional Authorities.
The majority of Ethiopia's cultivated area has been covered by informal seed, even as Ethiopia's cultivated area has increased.

Cereals account for close to 80 and 90% of the total cultivated area covered by informal and certified seed respectively.

Cultivated area coverage by crop type of certified and informal seed, %, total in hectares, 2010

Source: CSA Annual agricultural sample survey, 2006-09

1Does not take into account amount of seed that has been recycled by farmers within the recommended range.
COOPERATIVES

A well-functioning agricultural cooperatives system that helps smallholder farmers increase their yields, while promoting the marketing of their produce, can have transformative impact on Ethiopia’s agriculture sector. By participating in autonomous, efficient farmers’ associations that provide effective and sustainable services to their members, Ethiopia’s smallholders can access better opportunities than ever to pool their efforts and see increased returns from their farming businesses.

To reach this goal, an Agricultural Cooperatives Sector Strategy was developed, endorsed, and released in 2012. This Strategy included a range of recommended interventions aimed at creating a robust enabling environment of policy and regulatory oversight, as well as capable and reliable service providers that ensure cooperatives have the necessary support to succeed. By building the capacity of the cooperatives themselves and working to institute and promote improved business practices, the goals are to enable farmers to leverage their collective strengths and bargaining power, maximize efficiencies, and grow their income potential together.

Building off of the Cooperatives Sector Strategy developed in 2012, the Federal Cooperatives Agency (FCA) and Regional Cooperative Promotion Agencies have begun to implement a variety of the recommended interventions. Over the past year, a new cooperatives certification system has been developed and is now nearing implementation. A new cooperatives auditing structure is also under development. Significant efforts are also underway to convert Ardaita College into a center of excellence for cooperatives training. Elsewhere in the sector, a commission-based output marketing system is being designed, in order to shift a greater percentage of the wholesale profits to the farmers themselves. Support for Transformation Agenda Deliverables related to the cooperatives system has been provided by UNDP, DFATD-Canada, USAID, the Royal Netherlands Embassy, and the Bill & Melinda Gates Foundation, among others.
Progress on specific Deliverables within the Agricultural Transformation Agenda for the Cooperatives Sector include:

**Cooperative Center of Excellence**
Unfortunately, many of Ethiopia’s agricultural cooperatives lack the technical, financial, and managerial capacity necessary to offer their members a variety of higher value services. To overcome this gap, a fully dedicated ‘Center of Excellence’ in cooperative training is being developed at Ardaita TVET College. Progress toward creating this improved institution has continued over the past year, with a plan to legally establish the institution via government proclamation. Educational programs and training materials for various high-priority areas have already been developed, followed by pilot training efforts held with sesame unions in October 2013. The FCA and Ardaita, with support from the ATA, continue to work on development of this essential institution, including detailing objectives for the center’s governance, management, operations, structure, capacity, and curriculum. Some delays in this deliverable have been experienced due to managerial changes at Ardaita College.

**Advanced Certification System**
An advanced certification system that classifies and certifies cooperatives will enable various partners to work with cooperatives with a clear understanding of their existing capabilities. It will also enable all partners to understand the specific deficiencies in low performing cooperatives in order to better target capacity building and training opportunities. The effort to establish an advanced certification system for Ethiopia’s cooperatives is now underway. The FCA is leading the development of certification directives and criteria, which will serve as a framework for the new system. Once piloted and launched, the new Advanced Certification System will provide cooperatives with measurable assessments of their effectiveness, while at the same time letting farmers, financers, and buyers know which cooperatives are functioning best and which require support. The new system will also incentivize individual cooperatives to strive for greater levels of quality and service, both to their member farmers and to the cooperatives sector on the whole.
Auditing
Independent, objective, and accountable public auditing of cooperatives is another essential component of the strategy to drive improvement throughout the sector. Current auditors have acknowledged the gap between the quality of existing audits and the established standards of Ethiopia’s financial and other institutions. To overcome this, the FCA and ATA are working to establish and capacitate an Audit Directorate within the FCA and an Audit Core Process within the Regional Cooperative Promotion Agencies. Once endorsed by the Ministry of Civil Service, the new audit structure will officially be launched. The German Society for International Cooperation (GIZ) is already lending support to the effort, helping to train auditors on the new International Financial Reporting Standard (IFRS) which Ethiopia has adopted.

Commission-Based Output Marketing
In the current marketing systems used by cooperatives, a cooperative will purchase produce from farmers and sell the aggregated produce at a fair price, or store it to be sold as market prices increase in later months. At the same time, cooperatives are expected to pay 70% of the net profit as a dividend to their members. However, in many instances this dividend payment is not occurring as intended, and as a result, farmers are not receiving the benefits they expect from their cooperatives. The Cooperatives Sector Strategy identified this bottleneck, recommending a shift to a new and improved form of marketing system referred to as Commission-Based Output Marketing (CBOM). CBOM is a system whereby cooperatives market the product of farmers and deduct a commission for the service they provide, paying the net profits to farmers. The cooperative society does not take ownership of the product, but rather offers the marketing service to members of the cooperative and receives a commission for its service. The amount of commission is also decided by mutual agreement between the cooperative and the member farmers. To test this new system, the ATA and FCA have partnered with the Canadian Cooperative Association (CCA) to support the piloting and implementation of the CBOM in Ethiopia. The CCA has engaged the Federal and Regional Cooperative Agencies, with plans to pilot the system in the upcoming harvest season.
Certification criteria are grouped into six categories focusing on operations, finances, services, member participation, governance and infrastructure.

- **Cooperative internal operations**
  - Documentation
  - Planning
  - Operational manuals

- **Finance and resource management**
  - Finance
  - Financial bookkeeping system
  - Auditing

- **Cooperative function**
  - Input distribution
  - Output marketing
  - Cooperative extension service
  - Social service delivery and participation
  - Value addition and other services

- **Members participation and benefit**
  - Members’ benefit
  - Women and youth participation

- **Cooperative management and governance**
  - General Assembly
  - Board of Directors (BoD)
  - Control Committee (CC)
  - Human Resource

- **Cooperative internal infrastructure**
  - Office
  - Warehouse
SOIL

Low soil fertility and crop nutrient imbalances are two major obstacles preventing Ethiopia’s farmers from realizing the full potential from their agricultural lands. These issues are further exacerbated by widespread soil degradation, deforestation, and a lack of land management strategies appropriate to specific soils, landscape and climate. Instituting efforts designed to rehabilitate currently degraded soils, while increasing overall soil quality and fertility, can lead to substantial improvements in smallholder productivity throughout Ethiopia.

Some of the recommended interventions identified in the 5-year Soil Sector Development Strategy include: the promotion of agronomic practices designed to rehabilitate degraded soils while preventing further erosion; increasing the availability and access to improved soil nutrients needed to help smallholders maximize their growing potential; and the establishment of a comprehensive sustainable land management program.

Over the past year, with the first generation of the EthioSIS and soil fertility mapping projects nearing completion, Ethiopia’s agronomists, extension agents, and farmers are now poised to take advantage of a vastly expanded range of information about the country’s soil. A digital soil fertility map is also being created, led by the ATA and MoA, which will provide localized data on soil fertility throughout the country. This first-of-its-kind data will help indicate which soil nutrients should be utilized where, in order to increase production of various crops in different areas. In addition, fertilizer blending plants are being constructed in 4 major regions to provide customized, farm-level blends of an expanded range of fertilizers to Ethiopia’s smallholder farmers. Support for Transformation Agenda Deliverables in the soil sector has been provided by the World Bank and the Royal Netherlands Embassy, among others.
Progress on specific Deliverables within the Agricultural Transformation Agenda for the Soil Sector include:

Soil Sector Strategy
Transforming Ethiopia’s agriculture sector will take a concerted effort to institute systemic improvements at every level, with repair and proper maintenance to the country’s vital soil resources among the most essential concerns. In consultation with key federal, regional, and international stakeholders, a 5-year Soil Sector Strategy was developed and then endorsed by the Ministry of Agriculture. The Strategy, which includes the identification of a sector vision, soil-level and systemic bottlenecks, and intervention and implementation frameworks, is now moving toward implementation.

EthioSIS & Woreda-level Mapping
In order to help Ethiopian farmers move beyond the once standardized fertilizer recommendations of DAP and urea, two soil nutrient analysis projects are now underway. Each of these interventions are intended to provide extension agents and farmers with more detailed, localized soil fertility information to help better inform soil nutrient recommendations and usage. The first project, EthioSIS (Ethiopian Soil Information System), uses remote sensing and satellite technology to provide a high-resolution fertility analysis and mapping, while developing a first-of-its-kind national soil information system. As part of this effort, the National Soil Testing Center (NSTC) and regional labs have been equipped with state-of-the-art equipment, while significant capacity building and new soil analysis methodologies are also being introduced. To date, 59 EthioSIS “confluence points” have been sampled across Ethiopia, with analysis taking place at NSTC and the regional labs. Database management and map generation is being handled by the MoA, supported by the African Soil Information System (AFSIS), Columbia University, and CASCAPE/ALTERRA. The second project, a woreda-level fertility mapping initiative, has sampled soil from 133 high-opportunity woredas in its first phase, with 198 additional woredas targeted for the coming year. A total of 14,354 samples were analyzed using wet chemistry, and spectral analysis is also being conducted at NSTC, aided by training received from ICRAF, Nairobi. Using this data, draft fertility maps of 148 woredas were prepared to support fertilizer recommendations and distribution in the sampled woredas.

Blended Fertilizers
Building off of the data being provided by the EthioSIS and woreda-level soil sampling projects, work is also underway to develop the capacity to provide Ethiopia’s smallholder farmers with a wider range of soil nutrients through local sources. As such, the construction of four fertilizer blending plants (one in each of four main regions) is currently underway, with support from the Agricultural Growth Program (AGP). Given the size of the Region, a fifth blending facility is also being constructed in the Oromia Region with the support of USAID. This approach envisions the unions to run the fertilizer blending plants as independent, profit-driven businesses. In conjunction with the blending plants, a plan is in place to help further popularize the use of blended fertilizers through additional demonstrations, with support from OCP S.A. and Allana Potash Corp.
**Soil Test-based Fertilizer**

Although soil analysis provides an incredibly valuable guide for sustainable land management practices and soil nutrient supplement recommendations, the best way to gauge what fertilizers will work best for which crops in which regions is to systematically test the response of crops to different nutrient applications on representative soil types in various agroecologies. To do this, the Ethiopian Agricultural Research Institute (EIAR) and the regional agriculture bureaus are instituting a wide-scale testing of different soil nutrient combinations across the full spectrum of Ethiopia’s different agro-climate regions. Once completed, these tests will help to derive specific fertilizer recommendations for desired yield targets, taking into account the overall and seasonal availability of particular fertilizers, and the financial constraints/access of farmers throughout the country.

**Integrated Soil Fertility Management**

The extensive nutrient depletion, soil degradation, and soil quality deterioration found throughout Ethiopia is due in large part to ineffective agricultural practices and inefficient fertilizer applications. Although some of the practices that could address these issues are occasionally utilized independently, a fully integrated package of interventions that is popularized throughout the country is needed to properly impact soil health and the related potential increase in crop yields. To do this, the MoA is working with regional partners to test and introduce an Integrated Soil Fertility Management (ISFM) program throughout the country. Trials of organic inputs (rhizobium), vermicomposting, minimum tillage, and Conservation Agriculture techniques have already been conducted, as a first step in launching a full-scale ISFM package across Ethiopia.

A five year research plan has been developed to carry out iterative research activities on benchmark sites in 100 research sites and 600 farmers plots on four major crops.
INPUT & OUTPUT MARKETS

Connecting smallholder farmers to financial resources that can help them increase their productivity and grow their businesses remains one of the most essential elements of transforming the agriculture sector overall. If a farmer does not have the means to purchase improved inputs at planting time – such as fertilizer and seeds – chances are slim that they’ll see the increased yield at harvest, which they need to expand their efforts the following season. At the same time, those farmers who do manage to generate surplus stock need links to output markets where they can sell their harvests; particularly to commercial buyers who provide reliable markets and often offer higher prices than local and regional brokers.

Some of the interventions being pursued in these areas include: streamlining the fertilizer supply chain; redesigning the input credit system; developing routes and linkages to more profitable and sustainable markets; and trialing a new model that lets farmers sell their output via a more reliable and localized warehouse receipt structure.

Among some of the progress achieved over the past year, the new input credit system was successfully trialed, with three financial institutions providing nearly 25,000 farmers with approximately ETB 86 million in loans to purchase improved agricultural inputs. This effort is being expanded in the coming planting season to 200,000 to 400,000 farmers. At the same time, the proposed community receipt system was piloted with four cooperatives in the Amhara Region, with plans for additional scale-up over the coming year. Support for Transformation Agenda Deliverables in the Input & Output Markets areas has been provided by DFATD-Canada and the Royal Netherlands Embassy, among others.
Progress on specific Deliverables within the Agricultural Transformation Agenda for the Input & Output Markets area include:

**Input Credit**

It’s clear that credit is a major determinant of the adoption and sustained use of agricultural productivity enhancing inputs, such as fertilizer, improved seeds, and crop protection chemicals. Due to a variety of bottlenecks in the existing credit system, many of Ethiopia’s farmers are unable to afford the full package of input recommendations, limiting their yield and output. To address this, the ATA, MoA and RBoAs are working to popularize an overhauled input credit model. This new framework shifts the lending emphasis away from cooperatives and unions, and instead channels input credit through microfinance institutions (MFIs) and other qualified lenders with the necessary capabilities, systems, and risk mitigation mechanisms. At the same time, the new model reduces the need for physical cash, replacing it with a voucher system designed to streamline the flow of funds while adding increased accountability and transparency. This new system was piloted by two MFIs (Amhara Credit and Saving Institution and Oromia Credit and Saving Share Company) and one bank (Cooperative Bank of Oromia) in 2013. Across the three financial institutions, ~25,000 farmers were reached with a total credit disbursement of about ETB 86 million (~$4.5 million). This effort is being expanded in the upcoming planting season to reach 200,000 to 400,000 farmers.

**Rural Finance**

Beyond input credit, the overall financial system in the rural areas of Ethiopia needs significant enhancement. The Rural Financial Services Program (RFS) is an initiative developed by the Government of Ethiopia to provide rural communities with increased access to a wide variety of financial services in an efficient, scalable and financially sustainable manner. This effort seeks to vastly increase access to input credit; aggressively accelerate mobilization of savings; provide risk mitigation strategies that reduce the guarantee burden on regions and provide farmers with support in case of catastrophic events; and develop improved mechanisms to deliver financial services more efficiently to rural communities (i.e., mobile, electronic platforms, etc.). Over the last year, the strategy for this program has been created through collaboration with various government stakeholders, including the Ministry of Agriculture and the Economic Policy & Analysis Unit in the Ethiopian Development Research Institute (EDRI). It has now been transferred to the ATA for refinement and implementation.

**Fertilizer Supply Chain**

Over the past year, a number of reviews of Ethiopia’s fertilizer supply chains have been conducted. These reviews have identified bottlenecks in fertilizer procurement, demand estimation, adoption/affordability, and last-mile distribution. Based on these studies, the MoA and ATA have identified several opportunities for improvement of the system, which are now being prioritized and pursued. These opportunities include diversifying
ports, reducing seasonal peak demand by changing ordering timing, improving and expanding the trucking sector, developing ICT tracking systems, expanding hours at the border crossing, and organizing 24/7 offloading of trucks in Ethiopia. A further analysis is also underway on last mile distribution.

**Community Receipt System**

At harvest time, many Ethiopian farmers face high cash needs, since they have to repay a range of costs incurred during the production process (e.g., inputs, labor, etc.). Given their need for cash and a lack of buyer options, they have little bargaining power and will often accept cash payment at a farm-gate price significantly lower than the full value of their output. While alternative buyers, such as cooperatives, offer a potential solution to this situation, poor capitalization and lack of sufficient working capital financing have limited the ability of cooperatives to be large participants in this market. To address this, work was initiated with USAID’s AGP-AMDe project to launch a locally based receipt platform called the Community Warehouse Receipt System. This system allows farmers to deposit their commodities at cooperative warehouses as collateral, in order to access output marketing loans from local MFIs, which will be repaid after the commodity is sold. The system is being piloted in two woredas in the Amhara Region, with two unions and four primary cooperatives participating.

**Contract Platform**

Contract farming has the potential to improve smallholder farmers’ livelihoods and increase agriculture sector growth by better linking buyers and sellers. However, contract farming is currently limited in Ethiopia due to numerous challenges faced by both buyers and sellers, including difficulties in identifying opportunities to contract, facilitate negotiations, and enforce the ultimate agreements. An institutional solution that facilitates deals between buyers and sellers can systematically address this and other issues. To achieve this, in collaboration with the Ministry of Trade, work has been underway to finalize and launch a new, comprehensive Contract Platform. The platform is intended to link buyers and sellers by providing accurate market information and profiles, facilitating negotiations and contract signings, and enforcing the contracts through multiple layers of accountability systems. This deliverable has been delayed due to management transitions at the Ethiopia Commodity Exchange (ECX), the proposed home of the contract platform.
RESEARCH & EXTENSION

Ethiopia’s agricultural extension agents, known as Development Agents (DAs), are the people responsible for disseminating knowledge, training and support to Ethiopia’s farmers, making them a critical component in the effort to increase agricultural production and transform the sector. Similarly, the country’s research system relies on highly skilled professionals to identify, test, and avail new technologies and techniques that can help Ethiopia’s farmers grow a higher volume of better agricultural commodities, more efficiently and more profitably. Both of these systems however have suffered from systemic and operational bottlenecks. Making systemic improvements in these two key areas has the potential to positively impact Ethiopia’s agricultural productivity, and thereby, smallholder farmer incomes and livelihoods.

Some of the interventions identified for strengthening these two systems include: overhauling the agricultural researcher incentive structure in order to attract and retain the highest quality staff; revising the country’s biosafety proclamation to pave the way for new and better related technologies; establishing an agricultural research council; enhancing the extension agent career path and incentive structure; and strengthening the mechanisms linking research outputs to the extension system and farmers.

Over the past year, work began on developing sector strategies for both the research and extension systems, with key partners and stakeholders convening to collaborate on the initial drafts. The formation of the new Ethiopian Agricultural Research Council (EARC) was approved and is now in the process of being established. In addition, many of Ethiopia’s current Farmer Training Centers have been targeted for much needed upgrades, paving the way for better dissemination of the new productivity enhancing techniques and technologies down to the farmer level. Support for Transformation Agenda Deliverables related to the Research & Extension systems has been provided by the World Bank, USAID, and the Royal Netherlands Embassy, among others.
Progress on specific Deliverables within the Agricultural Transformation Agenda for the Research & Extension systems include:

**Ethiopian Agricultural Research Council (EARC)**

The Ethiopian National Agricultural Research System (NARS) consists of a collection of related entities, including the Ethiopian Institute of Agricultural Research (EIAR), the Regional Agricultural Research Institutes (RARIs), and higher learning institutions (HLIs). A lack of a single body to effectively coordinate the system at a national level, addressing overlap, and integration issues, has reduced the system’s ability to function as effectively as possible. Over the past year, progress toward establishing a single apex body to align the various elements of the NARS has made great strides. Slated to be called the Ethiopian Agricultural Research Council (EARC), this new body will coordinate and oversee the integration and overlap of efforts by the various stakeholders and institutes. Formation of the EARC has now been approved by the Prime Minister’s office, and a taskforce is managing the development of a roadmap to institutionalize and launch the Council.

**Research Career Path and Incentive Structure**

Ethiopia’s agricultural research system has suffered from high staff attrition rates, negatively impacting the quality of the work and its potential to positively contribute to the transformation of the agriculture sector as a whole. The primary reasons for the high turnover rates have been low researcher salaries, unfavorable working conditions, and dissatisfaction with the current career path/incentive structure. Unless this situation is reversed, it will negatively impact not only the current technology supply but also the GTP II period and beyond. Led by the Ethiopian Institute of Agricultural Research (EIAR), in collaboration with the ATA and regional research institutes, relevant stakeholders have undertaken a study to understand and develop solutions to key issues related to researcher salaries and other benefits/working conditions. This study has resulted in a positive response from the office of the Prime Minister and the Ministry of Civil Service to significantly increase the compensation package of the national research system. This will in turn improve both the quality and quantity of appropriate agricultural technologies generated by the research system, with the potential of impacting food security and reducing poverty.

### PhD holders as a % of total researchers

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### Total % postgrads

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Source: ASTI/IFPRI agricultural research dataset 2008
Biosafety Proclamation

Realizing that many modern biotechnology applications, both transgenic and non-transgenic, have great potential to increase agricultural productivity, nutrition, and environmental health, work is progressing to help expand the use of these innovations in Ethiopia for the benefit of the country’s farmers. Ethiopia’s current biosafety proclamation and associated directives impose very tight limits on the introduction of many of these highly productive technologies, including Bt-cotton, which could help Ethiopia meet its annual textile demand of 659,000 metric tons. The MoA, Ministry of Environment and Forestry, and EIAR have revised the biosafety proclamation to encourage the use of safe and beneficial technologies that can help Ethiopia reach the goals set in the current and future Growth & Transformation Plans. There is now a consensus to further revise the proclamation to make it more enabling, so that the country will benefit more from the utilization of biotechnology tools and commercial products. In partnership with these efforts, the Ethiopian Academy of Sciences, EIAR, and the ATA have held a series of well-attended public lectures on key biotechnology topics, along with a related workshop for policy makers in the country. This effort has culminated in publishing a book in Amharic on biotechnology, to increase the awareness of the general public on the subject. Collaboration between EIAR, the ATA, and the African Agricultural Technology Foundation has resulted in the formation of the Ethiopia Chapter of the Open Forum on Agricultural Biotechnology (OFAB) that is housed by EIAR. OFAB will allow scientists, law makers, journalists, civil society, and the public to openly discuss the benefits of modern biotechnology, address any concerns, and help create an enabling environment for biotech research and deployment.

Agricultural Development Partners Linkage Advisory Councils (ADPLACs)

The linkage between the research and extension systems plays a significant role in the generation and dissemination of appropriate technologies. Currently, the responsibility of fostering linkage among the rural innovation actors, including the research and extension systems, lies with the Agricultural Development Partners Linkage Advisory Councils (ADPLACs). Structurally, ADPLACs are organized at national, regional, zonal, woreda, and kebele levels. However, they all face various systemic and operational challenges, ranging from inadequate institutionalization to limited number and capacity of ADPLAC experts at all levels. To make the ADPLAC meetings more productive and manageable, stakeholders are working on a proposal to establish sub-committees to address specific crop or function areas, giving more say to the most invested stakeholders. Moreover, this will promote learning and interaction among thematic area experts and encourages regular general assembly meetings where each thematic area reports its accomplishments, challenges, and the way forward.

DA Career Path

With about 21 Development Agents (DAs) for every 10,000 farmers, Ethiopia has one of the densest agricultural extension systems in the world. However, staff retention and quality have been ongoing problems throughout the system due in large part to poor living and working conditions, and inconsistent implementation of career paths and incentive packages. To solve this, the MoA is working with Oxfam America, SG2000, and the ATA to introduce an overhauled DA career path and incentive structure, using international benchmarks as a guide. The new DA career path has a starting salary comparable with the country’s health extension workers, and more salary ranges than the old career path, which provides more room for advancement. The new career path and incentive structure also includes training and advanced education opportunities, housing at the FTCs or a housing allowance, improved human resource management, and access to better facilities, supplies and transportation needed for DAs to provide the quality extension services that Ethiopian farmers need.
Ethiopian Institute of Agricultural Research

17 Federal Agricultural Research Centers
- Ambo Plant Protection Research Center
- Assosa Agricultural Research Center
- Bako National Maize Research Project
- Debre Zeit Agricultural Research Center
- Pawe Agricultural Research Center
- Werer Agricultural Research Center
- Wondo Genet Agricultural Research Center
- Forestry Agricultural Research Center
- Holetta Agricultural Research Center
- Jimma Agricultural Research Center
- Kulumsa Agricultural Research Center
- Melkassa Agricultural Research Center
- National Fish and other Aquatic Lives Research Center
- Chiro Agricultural Research Center
- Tepi Agricultural Research Center
- Mehoi Agricultural Research Center
- Fogera Rice Research and Training Center

7 Regional Agricultural Research Institutes
- Oromia Agricultural Research Institute (OARI)
- Amhara Region Agricultural Research Institute (ARARI)
- Southern Agricultural Research Institute (SARI)
- Tigray Agricultural Research Institute (TARI)
- Somali Region Pastoral and Agro Research Institute (SoRPARI)
- Afar Pastoral and Agro Research Institute (APARI)
- Gambella Agricultural Research Institute (GARI)

12 Universities/Higher Learning Institutes
- Haramaya University
- Hawassa College of Agriculture
- Wondo Genet College of Forestry
- Mekelle University
- Veterinary College of Debre Zeit
- Jimma University
- Ambo University
- Semera University
- Jigjiga University
- Bahir Dar University
- Soddo University
- Debre Birhan University

Source: EIAR Research Centers.htm
GENDER

Throughout Ethiopia, female farmers make up roughly half of the agricultural workforce; however when it comes to access to vital resources and opportunities, women’s interests remain vastly underrepresented. For example, female farmers only account for a mere 15% of agricultural cooperative membership in the country. Obtaining financial credit to run and grow their businesses and a lack of proper training and extension services are additional obstacles that many of Ethiopia’s female farmers still face. A 2013 World Bank study of six sub-Saharan African countries showed that these inequalities have resulted in a productivity gap of 23% between female and male farmers. On the other hand, studies show that addressing gender inequality in the sector has the potential to increase overall productivity by 15 to 40%.

To advance the representation and benefit of women throughout the sector – ultimately striving for equal opportunities and resources to be made available to all female, male, and youth farmers – a variety of initiatives are being instituted. An assessment of existing capacities, as it relates to gender issues, is being conducted across related institutions, agencies, and public and private partners. Based on this analysis, sensitization of staff members and farmers themselves is being planned, with the goals of educating about gender disparity and roles, building capacity and program development, and institutionalizing gender mainstreaming practices at every level. At the same time, the MoA’s Women’s Affairs Directorate and RBoAs are engaging with the full spectrum of other agricultural initiatives and programs, to ensure that gender related issues are integrated within all strategies and interventions being promoted in the field. Support for Transformation Agenda Deliverables in the gender area has been provided by DFATD-Canada and the Royal Netherlands Embassy, among others.
Progress on specific Deliverables within the Agricultural Transformation Agenda focusing on Gender issues include:

Gender Analysis & Audit
A primary bottleneck to mainstreaming gender equality throughout the agriculture sector is the absence of adequate sex and gender disaggregated data. Such an analysis would show a better picture of the current status of both, while illuminating the causes of inequality, which could serve to inform program development while also offering a baseline to track progress. In order to address this gap, the ATA and MoA are working with IFPRI to synthesize a report on research done in the area of gender in agriculture over the last ten years, while also reviewing an analysis of sex and gender disaggregated data collected by the CSA. As part of the capacity building efforts, a gender audit of the MoA and RBoAs is also underway. The purpose of the audit is to prompt organizational learning on gender mainstreaming within the Ministry and Regional Bureaus by systematically assessing the political will, technical competence, organizational culture, and accountability structures from a gender perspective. The results of these studies will be used to help design a comprehensive capacity building plan to enhance the gender responsiveness of the related institutions, strengthening their ability to more sensitively respond to the needs of both male and female farmers.

Women's Economic Leadership
Despite a variety of programs aimed at mainstreaming gender to ensure the benefit of female farmers throughout the sector, there is still a lack of adequate progress in engaging women to move from subsistence farming into more prominent positions in market-based agriculture in many areas. To begin to alter this, in partnership with Sasakawa Global 2000, a two-year Women's Economic Leadership pilot was initiated last year in Tigray, Amhara, Oromia, and SNNPR. Designed to create new opportunities for women farmers and cooperative members by increasing their agricultural production, marketing, and value addition efforts, the program has already yielded operational enterprises in three of the regions, providing seed capital, equipment, post-harvest training, and business plan development support.

Crop Initiatives
In order to mainstream gender issues across the full agriculture sector, it's important to make sure that these concerns are integrated into all of the work and programs being conducted by the MoA, the regional bureaus, the ATA, and their partners. To do this, gender mainstreaming initiatives are being incorporated into the sector strategies being developed for each of the Transformation Agenda's value chain programs, starting with the tef, maize, and wheat strategies. In order to develop a clear picture of what a gender responsive crop value chain looks like, a pilot project is also being planned, based on an assessment result which showed that the major bottleneck female farmers face is limited institutional capacity to respond to their needs. The pilot will work to ensure that the crop value chain strategies are addressing sociocultural issues throughout the process, providing female farmers with access to agronomic training and on-farm support, plus increased access to seed, fertilizer, credit, and improved technologies.
Rain-fed agriculture is the primary driver of the Ethiopian economy, contributing to nearly 45% of the country’s GDP and employing 85% of its population. As a result, the variable impacts of climate change, such as unpredictable rains, droughts, and floods, often weigh especially heavy on Ethiopia’s smallholder farmers. In addition, ongoing environmental degradation caused by issues such as over tillage and overgrazing is reducing topsoil and fertility, particularly among the 60% of Ethiopians living in highland areas. In fact, long-term productivity losses due to soil erosion alone are predicted to reduce annual agricultural GDP by up to 3%. Addressing these and other climate related issues is essential to transforming the country’s agriculture sector and preparing Ethiopia’s farmers for future environmental changes and impact.

In light of these issues, the Climate & Environmental Sustainability Program within the Agricultural Transformation Agenda aims to work with a range of public and private-sector partners to research, test, and promote tools and techniques designed to mitigate the effects of climate change, while educating extension agents and farmers about ways to protect and enhance Ethiopia’s environment, creating a long-term, sustainable growth in productivity.

This past year, progress was made in educating extension agents about new and improved ways to assess and use climate forecast information, starting with training for nearly 900 Development Agents in 28 woredas. Rain gauge technology and training was also provided to an initial group of Farmer Training Centers, leading to significant yield improvements for many of those participating. Training was also provided to over 1,100 extension expert and agents on Conservation Agriculture techniques; knowledge they can pass on to farmers to better address the effects of climate on their land. Support for Transformation Agenda Deliverables in the climate and environmental sustainability areas has been provided by the Royal Netherlands Embassy, among others.
Progress on specific Deliverables within the Agricultural Transformation Agenda focusing on Climate & Environmental issues include:

**Downscaled Forecasts**
Most climate information released by the National Meteorological Agency (NMA) focuses on a broad, regional scale, lacking the detailed, localized (or ‘downscaled’) forecasts needed for farmers to make best-practice agronomic decisions. As such, work has been underway with the NMA to introduce key ‘agro-meteorological’ skills to the country’s extension agents, including the training of over 887 extension system stakeholders across 28 target woredas in 2013 on the agronomic skills needed to advise farmers on making weather-based decisions such as choosing optimal planting dates.

**Rain Gauges**
As part of the effort to provide smallholders with more localized weather information, rain gauges have the ability to empower Farmer Training Centers (FTCs) to monitor rainfall in their respective areas, enabling farmers to undertake evidence-based agronomic decisions. To facilitate this, working with the NMA and the MOA Extension Directorate, the ATA is helping to build agro-meteorological capacity. In 2013, 931 plastic rain gauges and training were provided to FTCs and farmers in 28 prioritized tef, wheat and maize woredas. Early feedback from these efforts has shown maize yield improvements of up to 80% where climate information and rain gauges were used together.

**Conservation Agriculture**
Conservation Agriculture (CA) plays an essential role in rehabilitating degraded land and preserving remaining fertile farmlands through the application of techniques such as minimal soil disturbance/tillage, permanent soil cover (by keeping crop residue in the ground) and rotating and/or mixing crops. Studies also show that CA can reduce farmer maize labor time and costs by as much as 40% and 50% respectively. In 2013, 48 regional and zonal experts, 268 woreda extension agents, and 819 agricultural development agents were trained in CA, responsible for an area covering 56,000 farmers, on practices such as minimum tillage, residue retention, and double cropping (for example, planting tef early and using residual moisture to plant nitrogen fixing chickpea).
TECHNOLOGY ACCESS & ADOPTION

As technological advancements have soared in recent decades, farmers around the world have taken advantage of innovations to streamline their farming operations and maximize crop output. These productivity enhancing advancements, however, have thus far been slow to reach Ethiopia and its 15 million smallholder farmers. To change this, the Agricultural Transformation Agenda’s Technology Access & Adoption effort aims to identify, evaluate, and promote new agronomic tools and technologies that can make the smallholder farmer’s job easier, more effective, and more profitable.

Via a collaboration between the Ministry of Agriculture, the regional bureaus, the Ethiopian Institute of Agricultural Research (EIAR), and the ATA, work is underway to develop and popularize mechanized technologies (both pre and post harvest) with the potential to increase farmer productivity and production. By allowing farmers to work more efficiently, mechanization can save time, reduce labor costs, increase yields, and expand a smallholder farmer’s ability to grow their business and income.

Over the past year, efforts began to craft a comprehensive mechanization strategy to identify the best, most economically viable ways to introduce new agricultural technologies into the sector. At the same time, initial trials of three particular technologies – planters, harvesters and threshers – began, with row planter prototypes being trialed by tef farmers, multi-crop mechanical threshers being tested, and three different thresher models being demonstrated in the field. Support for Transformation Agenda Deliverables in the technology area has been provided by DFATD-Canada, USAID, the Royal Netherlands Embassy, and the Bill & Melinda Gates Foundation, among others.
Progress on specific Deliverables within the Agricultural Transformation Agenda focusing on Technology Access & Adoption include:

Mechanization Strategy
In order to develop a comprehensive strategy for the large-scale access, production, distribution and maintenance of mechanical agricultural implements in Ethiopia, relevant lessons and best practices have been drawn from case studies on smallholder mechanization in other countries, such as China and Brazil. The research conducted focused on the suitability for adapting approaches to the Ethiopian context, including an analysis of enabling policies, financing, capabilities and skills, and coordination mechanisms across key value chain components – such as testing, certification and release, production, distribution, and adoption and utilization. Prior to release, the Agricultural Mechanization Strategy will be finalized in collaboration with all key stakeholders, including smallholder farmers, cooperative unions, and related private sector actors (importers, manufacturers, rental services, and financial institutions).

Row Planters
Planting in rows with the appropriate seed rate (vs. traditional broadcasting) has been shown to significantly increase farmers’ yields while at the same time reducing their input costs. However, there are currently no readily available mechanized planting devices in Ethiopia, particularly for use on tef crops with their uniquely tiny seeds. As a starting point, the ATA and EIAR have been working together to identify, test, and refine domestically and internationally sourced mechanical row planters for tef planting in Ethiopia. These prototype models verified the potential for farmers to reduce their seed rate to just 5 kg/hectare while seeing yield increases of up to 70%. For 2014 these efforts have been expanded, testing refined models and preparing to scale-up production and distribution of planters to tef farmers across the country. The ultimate goal is to deliver low-cost planting devices for tef that can apply both seed and fertilizer across various soil types; ideally ones that are produced locally from sustainable materials.

Threshers
Post-harvest mechanization is another high-impact area of opportunity for Ethiopia’s smallholders, with the potential to reduce labor time and costs, while increasing yields by saving 25-30% in post-harvest losses. Last year, the MoA Extension Directorate, the ATA, and the Regional BoAs identified, tested, and deployed nearly 70 multi-crop mechanical threshers using a variety of business models. This effort has been scaled up for 2014, deploying various models in target tef, wheat, and maize cluster woredas, while testing a range of different sustainable business models for delivering this post-harvest service.

Harvesters
Mechanical harvesters also offer potential increased efficiencies and long-term cost savings for Ethiopia’s farmers. Using mechanized harvesters can reduce the amount of days of labor needed to harvest one hectare by 70-80%. To explore the benefits of this technology, the MoA/RBoA Mechanization Directorates and the ATA worked to deploy two different prototypes in 2013. Based on the results of these demonstrations and tests, mechanical harvester procurement and promotion will be scaled up throughout the country in the coming years.
MONITORING, LEARNING & EVALUATION

A key driver of sustained long-term growth is the ability to measure the performance of your efforts, evaluate the successes and setbacks, and adjust the course accordingly. As the Ethiopian agriculture sector endeavors to transform and grow, tracking and assessing progress is essential to ensuring that all of the efforts of the MoA, the Regions, the ATA, and the many public and private partners, achieve the positive outcomes intended. Clear targets and strong implementation capacity are primary tools that can help to steer the direction of overall strategies, while accurate results measurement and a clear learning agenda indicate the most effective way forward.

Some of the initiatives being pursued in the MLE realm include: the completion of an institutional survey to assess the capacity of many of the country’s key agricultural agencies and resources; capacity building efforts targeting the MLE functions within various public sector entities, including the MoA, RBoAs and other agricultural institutions; and programs aimed at tracking and assessing the progress and results for the Deliverables being pursued as part of the Transformation Agenda. Support for Transformation Agenda Deliverables in the MLE area has been provided by the World Bank, UNDP, DFATD-Canada, USAID, and the Royal Netherlands Embassy, among others.
Progress on specific Deliverables within the Agricultural Transformation Agenda focusing on MLE and Data Management related work include:

Transformation Agenda Monitoring, Learning & Evaluation
Monitoring, learning and evaluation mechanisms are also essential to the long-term success of the interventions being pursued on the various Transformation Agenda Deliverables. In order to measure the success and impact of each program, ensuring effectiveness and enabling the stakeholders to learn from and correct any inefficiencies, an integrated results framework, identifying standard indicators at the organizational and program levels has been established. The results framework is part of a detailed monitoring plan and M&E guide to help Transformation Agenda programs track and report on all of their progress, while steering future efforts toward the most productive paths. Specific efforts include such projects as guiding teams to set measurable milestones and targets, development of an ATA-wide results framework, introduction of a performance management plan, a wheat directional survey, a household irrigation baseline survey, an ATA midline survey, and a review of Ethiopia’s Policy and Investment Framework.

Sector Strengthening
Beyond the efforts to monitor and evaluate the progress and results being achieved by the Transformation Agenda Deliverables, the agriculture sector must track and learn from all of the changes being seen throughout the sector. To help build this MLE capacity within Ethiopia, the Ministry of Agriculture's Planning and Policy Directorate and the ATA's MLE team are working together to establish an integrated monitoring and evaluation platform across the agriculture sector, aggregating and synthesizing data, in order to report on national targets, including those in the Growth and Transformation Plan and the Policy and Investment Framework, among others.

Sector-wide Agricultural Database
Agriculture sector transformation requires a broad range of stakeholders to understand, adopt, and apply strategically and analytically sound, data-driven and evidence-based approaches, as well as continuous learning and improvement. Weaknesses in strategic planning, problem-solving and analytical capacity, plus the use of reliable data, geospatial resources and best-practice frameworks and tools from the public and private sectors are all major bottlenecks to successful transformation. To address this, the Transformation Agenda aims to enhance the availability and provision of high-quality, reliable, user-friendly databases, maps, and geospatial resources throughout the sector, leveraging innovative technology solutions.

Institutional Survey
Monitoring and learning from the progress being made throughout the agriculture sector requires a clear initial understanding of the existing landscape. To obtain this detailed snapshot, a primary household-level baseline study is being conducted, led by the MoA Extension Directorate, with support from the Regional Agriculture Bureaus and the ATA. This information will allow the various agriculture sector stakeholders to better monitor, track, and support the specific institutions that are implementing Transformation Agenda interventions.
SPECIAL PROJECTS

In addition to the large number of Deliverables identified in the core program areas within the Transformation Agenda, there are also a number of emerging areas where some preliminary work has begun. These emerging areas do not constitute a full program area but are rather exploratory Special Project areas where significant potential may exist.

Two such special project areas are: Public Private Partnerships (PPP) and Information and Communication Technologies (ICT) for Agricultural Development.

In the PPP area, the aim is to accelerate the transition of smallholder farmers from subsistence to market orientation by creating large scale demand sinks by supporting the emergence of large commercial buyers and private sector investment throughout the agriculture sector. This work has focused on strengthening the capacity of the Ethiopian Investment Agency to aggressively identify commercial investors and improve the ability to convert investment interest into actual transactions. There is also an effort to prioritize a set of already active investors and increase their links to smallholder farmer production.

On the ICT for Agricultural Development area, the major focus has been to enhance the use of information and communication technologies to expand the access of agricultural information to smallholder farmers. This has included the use of traditional technologies, such as radio, but also increasingly looking at mobile-based technologies. Support for Transformation Agenda Deliverables in the special projects areas has been provided by USAID and DFATD-Canada, among others.
Progress on specific Deliverables within the Agricultural Transformation Agenda focusing on these Special Project areas include:

Ethiopian Investment Agency
In order to connect Ethiopia’s smallholder farmers with new and sustainable output markets, a variety of efforts are underway to identify commercial buyers, both domestic and international. Drawing new investments in agro-processing is one way to increase the demand for smallholder output. However, investors often face challenges understanding the full economic potential within Ethiopia, or taking these opportunities forward to initiate large scale investments on the ground. With a view toward attracting, supporting, and facilitating these types of investments, support is being provided to build the capacity of the Ethiopian Investment Agency (EIA) into a world class, one-stop-shop for investment promotion, coordination, and aftercare activities, encouraging greater investment in Ethiopian agriculture.

Linking smallholders to commercial buyers
Commercial output markets that provide farmers and cooperatives with reliable outlets to sell their stocks are an essential step in helping transform Ethiopia’s agriculture sector from a subsistence oriented one into a true commercial agricultural economy. Public/Private Partnerships (PPP) with domestic and international agro-processors and buyers are an ideal way to incubate this process, connecting Ethiopia’s smallholder unions with reliable demand sinks, especially those that allow a larger share of the value addition and profits to be captured by the farmers themselves. To address this, the PPP initiative has been working to create a strong international presence at trade shows, conferences, and with key partner agencies, such as Grow Africa, the World Economic Forum, and Global AgInvesting, among others. Emerging from these efforts, investments in barley malting, sesame hulling, and chickpea processing have already started to develop.

IVR/SMS System
Despite the strength and volume of agricultural information and training available through Ethiopia’s extension system, getting up-to-date data and knowledge out to the farmers in an efficient manner can be a great challenge, particularly when targeting the remote rural smallholders that make up the majority of the sector. To address this, a new interactive voice response (IVR) system is being developed, along with a companion text message delivery platform. These new IVR and SMS systems are intended to assist the Regional Bureaus of Agriculture, development agents, and extension workers distribute agronomic best practices and other related information to a much wider range of recipients in a fraction of the time required by previous methods. The initial IVR pilot is focusing on a limited number of crops and information, allowing smallholders to call in to an automated telephone system, free of charge, and obtain information on land preparation, seed selection, fertilizer/pesticide application, irrigation water management, and harvest/post-harvest handling. Recognizing the diversity of Ethiopia’s smallholders, the IVR system functions in three local languages (Amharic, Orominya, and Tigrinya) and provides
The new IVR system received 20,256 calls from the 21 pilot woredas in its first 2 months of operation. In the scale-up, 22,820 calls were received in just the first week.

Farm Radio
Radio presents another strong option for improving communications with Ethiopia’s rural farmers, particularly given the still growing penetration of mobile phone ownership in the country and the many different regional dialects in use. As an initial pilot for expanding the potential of radio communications for agricultural extension purposes, a partnership was developed with Farm Radio International, targeting Ethiopia’s tef farmers in particular. A specialized radio communications strategy was created, with the objective of increasing farmer knowledge of improved production techniques, enabling smallholders to learn about, discuss, and apply new agronomic methods for tef farming. Targeting four main tef growing regions, this initial 6-month Participatory Radio Campaign is expected to reach at least 1.6 million farming families, while allowing the MoA, Farm Radio, and the ICT stakeholders to assess the information and resource needs of smallholders in the regions, build the capacity of the local radio stations, and prepare for future scale-up of the initiative.

information about crops specific to soil type and altitude. The IVR system is also being integrated into an SMS based information system already being rolled out by the MoA.
6. The Way Forward
THE WAY FORWARD

Transformation requires a systematic leveraging of technologies and approaches. It requires the clear vision, as articulated in Ethiopia’s Growth and Transformation Plan, to guide the selection of interventions and solutions. By applying a “transformational approach” to address the bottlenecks for input availability, productivity increases, post-harvest value addition, and strong farm to market linkages, significant progress will come to the agriculture sector and catalyze the industrialization of Ethiopia.

In the coming year, agricultural transformation can be accelerated by making progress on the high-priority Deliverables identified within the Agricultural Transformation Agenda. The Ministry of Agriculture, the ATA, and other federal and regional partners have worked to develop clear activities, milestones, and accountability mechanisms for the successful implementation of these Deliverables for next year. While many of the 2007E.C (2014/2015) Deliverables represent a continuation of the efforts that were prioritized and initiated during the past year, some new areas of work are also emerging.

Overall, for long-term sustainable impact to be realized from these Deliverables, a number of broader strategic issues have to also be addressed. These include:

Alignment with the next five-year Growth and Transformation Plan:
The Transformation Agenda for agriculture over the past few years has worked to support the achievements of the objectives in the current Growth and Transformation Plan. With the development of the next five-year plan well underway, it will be important for the Ministry of Agriculture, the ATA, and other partners to clearly define how the Transformation Agenda for agriculture will support the next GTP.

Galvanizing development partners, NGOs, and the private sector:
The Transformation Agenda lays out a clear list of areas where the Government of Ethiopia will mobilize resources and prioritize its own activities. These priorities will allow donors to select complementary investments that reflect their individual areas of interest, knowing that their resources can leverage other investments by government. It will also allow NGOs to
understand how their work fits with the larger agriculture sector agenda and how the private sector can engage in specific areas that show the greatest potential for market opportunities.

Providing benefits across multiple sectors: Agriculture underpins the country’s development by contributing to economic growth, food security, and health. Clearly articulating the link between the investments in the Transformation Agenda for agriculture with other sectors will allow connection points to be identified in areas such as nutrition, business development, and education. Coordinated efforts across these sectors can benefit the entire country while supporting sector-specific as well as national targets.

Geographic focus for better coordination: As the systemic interventions that are addressed in the Transformation Agenda have begun to take root, it has been recognized at the regional level that an on-the-ground integration of these interventions is necessary to maximize their impact. As such, the MoA, Regional Bureaus, and ATA are working very closely together to identify specific clusters of woredas that have high production and productivity potential to intensively coordinate the investments of government, donors, and other partners. By establishing these clusters to initiate a value chain approach at scale, productivity increases are expected to link more efficiently to market opportunities, thus accelerating the transition of smallholder farmers into commercial farmers.

Implementation of the Transformation Agenda will however not occur without challenges. While research has shown what works, the greatest challenges come from creating a more integrated and coordinated approach in order to work at a scale that will transform the lives of millions of farmers. It is about engaging the right partners at the right time and in the right locations.

As such, the coming years of the Transformation Agenda will continue the focus on problem solving efforts but will also include efforts related to coordination and strengthening linkages across interventions and sectors. This will enable Ethiopia to maximize the return from the investments made by government and development partners while creating business opportunities for private sector partners to positively transform the lives of Ethiopia’s nearly fifteen smallholder farmers and their families.
To achieve its systemic and geographically oriented goals, the Agricultural Transformation Agenda works in partnership with a wide range of organizations. These partners provide significant input during the problem solving efforts intended to address systemic bottlenecks. Many of these institutions, such as the Regional Bureaus of Agriculture, are also implementers and managers of the interventions that are the key to transforming Ethiopia's agriculture sector. Finally, a number of development partners also provide financial and thought partnership support to the Transformation Agenda.

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Addis Ababa Chamber of Commerce & Sectoral Association Agri Busines Support Facility
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African Development Bank
African Union
Agriculture Growth Program (AGP)
AGP-AMDe (Agribusiness and Market Development)
Agricultural Input Supply Enterprise (AISE)
Agriterra
Alana Potash
Alliance for Green Revolution Africa (AGRA)
Amhara Credit & Savings Institution (ACSI)
Amhara Micro Finance Institution
Amhara Regional Bureau of Agriculture
Amhara Seed Enterprise
Apposit
Asella Malt Factory
Bavaria
Bill & Melinda Gates Foundation
Bioeconomy Africa
Boortmalt
Canadian Coopertive Association
CASCAPE
Central Statistics Agency
Chinese Academy of Agricultural Mechanization Sciences
CNFA: Commercial Farm Service Program (CFSP)
Colombia Global Center
Commercial Bank of Ethiopia
Cooperative Bank of Oromia
DAL Group
DANIDA
Dedebit Credit & Savings Institution
Dedebit Micro Finance Institution
Deloitte
Department for Foreign Affairs and Trade & Development - Canada
Department for International Development - UK
DGRV (German Coop Federation)
Diageo
Digital Green
DUPONT Pioneer
Dutch Government
Earnst & Young
eCom Technologies
Economic Policy Analysis Unit (EPAU)
Ecopia
ETFRUIT
Ethiopia Commodity Exchange
Ethiopian Chamber of Commerce & Trade Associations
Ethiopian Conformity Assessment Enterprise
Ethiopian Geological Survey
Ethiopian Grain Trade Enterprise (EGTE)
Ethiopian Institute of Agricultural Research (EIAR)
Ethiopian Investment Agency
Ethiopian Seed Enterprise
Ethiopian Seed Growers and Producers Association (ESGPA)
Ethiopian Shipping and Logistics Service Enterprise
Ethiopian Standards Agency
European Union
Export Trading Group (ETG)
Farm Radio
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Food and Agriculture Organization (FAO)
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German Technical Cooperation (GTZ)
GIZ (German Federal Enterprise for International Cooperation)
Gonder Malt Factory
Guts Agro
Heineken
Hilina Food Processing
IBM
Information Network Security Agency
Integrated Seed Sector Development Programme
International Center for Agricultural Research
International Crops Research Institute for the Semi-Arid Tropics
International Development Enterprise
International Finance Cooperation
International Food Policy Research Institute
International Fund for Agriculture Development
International Institute of Tropical Agriculture
International Livestock Research Institute
International Maize & Wheat Improvement Center
International Potato Center
Irish Aid
Kifiya
Korean Rural Community Corporation
Kotabe Metal Works
Malteurop
Mama Fresh “Injera” Processing Company
Maviga
Ministry of Civil Service
Ministry of Finance and Economic Development
Ministry of Foreign Affairs
Ministry of Industry
Ministry of Trade
Ministry of Water, Irrigation and Energy
Mofer PLC
MyMedia Engineering
National Soil Testing Center
Netherlands Development Cooperation
OCP S.A.
Omo Microfinance Institution
One Acre Fund
Oromia Credit & Saving Share Company
Oromia Irrigation Development Authority
Oromia Regional Bureau of Agriculture
Oromia Seed Enterprise
Oxfam America
Regional Cooperative Promotion Agencies
Regional Research Institutes
Royal Netherlands Embassy
Sabra
Sasakawa Global 2000
SNNP – Irrigation Agency
SNNP Regional Bureau of Agriculture
South Seed Enterprise
Spanish Agency for Development Cooperation
TechnoServe
Techtra Engineering
Tiger Brands
Tigray Regional Bureau of Agriculture
UK Cooperative College
UN Women
United Nations Development Programme
United States Agency for International Development
Wageningen University
Wolliso TVET
World Bank
World Food Programme
World Vision
Yara