AGRICULTURAL TRANSFORMATION AGENDA
ANNUAL REPORT
2015-16
Innovations to help our country grow
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Economic development continues to be one of Ethiopia’s top priorities in the quest to reach middle-income country status by 2025. Despite many challenges, including the impact of the recent El Niño weather patterns, significant gains were made in this regard during the first Growth and Transformation Plan (GTP I) from 2010 to 2015. Over the past 18 months, a concerted effort has been made by all sectors of the economy to design and begin implementing the second GTP, which covers the period 2015 to 2020 and builds on these gains. As always, the agriculture sector remains a critical component of the Government’s economic development strategy, given that it still accounts for approximately 40% of the country’s GDP and nearly 70% of its employment.

Though the agriculture sector has shown steady annual growth rates for over a decade, it remains dominated by subsistence-based farming and pastoralist practices. Inherent in Ethiopia’s process of agricultural transformation is the transition of our smallholder farmers and pastoralists from this subsistence-based model toward market orientation and broader agricultural commercialization.

For the agriculture sector to make this transition, it must address deep-rooted structural challenges that do not lend themselves to quick solutions. For this reason, the Government of Ethiopia launched the Agricultural Transformation Agenda to prioritize critical interventions that will address such structural bottlenecks. These interventions are not limited to actors in the agriculture sector alone, but cut across many other related areas such as trade, industry and water, among others. While a major focus of the Transformation Agenda remains on increasing the production and productivity of smallholder farmers, there is also an increased emphasis on market orientation, private sector development, and ensuring that growth is both inclusive and sustainable.

As the Transformation Agenda has evolved, so too has the role of the Ethiopian Agricultural Transformation Agency (ATA). Retaining its focus on providing strategic input in the design, scoping, and monitoring of Transformation Agenda Deliverables, in GTP II the ATA is also expected to take a leading role in the implementation of some strategic interventions while simultaneously enhancing the capacity of public sector actors to lead these initiatives in the long term. In particular, the ATA is expected to be integral in the design and implementation of the new Agricultural Commercialization Clusters (ACC) Initiative, which will integrate many interventions within the Transformation Agenda into specific high-potential geographies around the country.

GTP II lays the foundation from which Ethiopia can continue to build on gains made in the last five years and raise living standards and prosperity across the country. The ATA and the Transformation Agenda are expected to be impactful in helping Ethiopia reach many GTP II targets. As this report shows, delivery of the Transformation Agenda during the first year of GTP II has made considerable progress, continuing the momentum of work that began in GTP I. Nevertheless, more work needs to be done in order to accelerate and scale-up these gains so that the process of agricultural transformation can support all smallholder farmers throughout the country.

Hailemariam Desalegn
Prime Minister, FDRE
For the past 25 years, transforming Ethiopia's agriculture sector has been the priority of successive national and sectoral government strategies. These have mirrored the Government of Ethiopia's commitment to base the country's economy on the development of the agriculture sector, which has long been recognized as one of the most important sectors in the country. Not only does agriculture provide the basis for the livelihoods of the vast majority of the population, it is also the foundation on which Ethiopia can achieve its short- and long-term industrial and manufacturing ambitions and meet its food security objectives. For these reasons, the Government of Ethiopia has dedicated at least 10% of its budget to agriculture since 2003.

These commitments are intended to support accomplishment of GTP II agricultural goals, which focus on enhanced production emphasizing high-value commodities; broad-based growth that is sustainable and inclusive and eliminates food gaps; the development of more responsive market systems; and improved implementation capacity. Given Ethiopia’s vast and diverse farmable land, the majority of which is untapped or underutilized, there is remarkable growth potential within the sector. The high degree of climate diversity across Ethiopia’s land mass equally creates an impressive variety of agricultural opportunities, on which GTP II intends to capitalize.

Given development efforts over the last decades, the agriculture sector is already demonstrating impressive progress, growing by nearly 7% annually in the past ten years. In 2014, agriculture accounted for approximately 40% of Ethiopia’s total GDP, making it the single highest GDP contributing sector in the country. Ethiopia has achieved remarkable average growth in overall cereal (tef, wheat, maize, sorghum and barley) production and productivity, 63% and 41% respectively, between 2009 and 2015.

To build on these successes, create the environment in which the agriculture sector is able to flourish, and unlock many of the systemic obstacles that have limited growth, the Agricultural Transformation Agenda provides a systematic, multi-stakeholder approach to identify and prioritize the main drivers of agricultural change in Ethiopia. Owned largely by the Federal Ministry of Agriculture and Natural Resources (MoANR), Ministry of Livestock and Fisheries (MoLF), and the Regional Bureaus, the Transformation Agenda is intended not only to maintain the growth rates seen in the agriculture sector over the past decade, but to accelerate and expand them in the years to come. By prioritizing key interventions, the Transformation Agenda sets the stage for mobilizing critical stakeholders around a set of agreed targets and objectives that enable better coordination, resource allocation, and monitoring and oversight.

The MoANR is optimistic that Transformation Agenda Deliverables – with the commitment of government officials at both federal and regional levels, the collaboration of our counterparts in other ministries and government agencies, the greater engagement of the private sector, and the strategic support of the ATA – will continue to drive agricultural growth and catalyze transformation in the sector. In this way, agriculture will remain a vital component in driving Ethiopia’s economic development in the years ahead.

Tefera Derbew
Minister of Agriculture and Natural Resources, FDRE
With estimates placing livestock numbers at more than 56 million cattle, 57 million poultry, 29 million sheep, and 29 million goats, Ethiopia boasts the largest livestock population in Africa and the tenth largest population in the world. This makes the livestock sector an important contributor to Ethiopia’s overall economic performance and potential. To guarantee that this vital sector receives the high level of attention, expertise, and resources it warrants, the Government of Ethiopia first established a State Ministry for Livestock under the Ministry of Agriculture in 2013, which was reorganized over the last year as a stand-alone Federal Ministry of Livestock and Fisheries. Chief among the responsibilities of the Ministry is to drive the Livestock Master Plan, developed in support of GTP II and designed to guide growth and transformation in the livestock sector from 2015 to 2020.

Livestock is not only a means of livelihood in and of itself, it is also critical to other components of the agriculture sector, with animals traditionally being used to undertake and support a variety of farming related activities. Within the formal sector alone, livestock accounts for nearly half of agricultural GDP, or roughly one-fifth of the country’s overall GDP. Current efforts to develop the livestock sector are focused on improved productivity and production in key poultry, red meat, milk, and crossbred dairy cow value chains. Given the long-standing beekeeping culture across Ethiopia, honey production is also increasingly taking prominence. Furthermore, as the Ethiopian economy continues to grow and expand, the demand for livestock products will increase very rapidly. The GTP II plan for livestock has also set a number of targets for other key interventions required for the sector to transform, including better genetics, feed, and veterinary services alongside improved processing, output storage, and domestic and export market development.

The livestock sector in Ethiopia is complex, with livestock being important to pastoralist, agro-pastoralist, and agrarian communities – all of which are extremely diverse – across the country. Livestock rangeland covers two-thirds of the country, and is concentrated in the arid and semi-arid regions of Ethiopia’s southern and eastern regions, much of which are drought vulnerable and chronically food insecure.

Unlike the broader agriculture sector, the livestock subsector already has some market orientation and thus requires enhancement of these features and acceleration of production and productivity interventions. In addition to providing food, income, and a means of transportation and farming power to many pastoralist and agro-pastoralist communities, livestock is a means of accumulating and storing wealth and has cultural significance beyond its economic potential. Growth and transformation within the livestock subsector must recognize and account for these many different factors and tailor interventions to the particular needs of the various communities involved.

The GTP II Transformation Agenda acknowledges the importance and diversity of the livestock sector. As such, livestock-specific Deliverables have been developed within four different program areas to ensure that livestock interventions receive adequate and specific focus, unique from conventional crop-focused activities. In highlighting livestock interventions, the Transformation Agenda provides clear objectives, outputs, and targets to address the systemic bottlenecks in the sector and catalyze faster economic growth in order to achieve our vision for a transformed and prosperous Ethiopia, free of poverty and dependence on food aid.

Sileshi Getahun
Minister of Livestock and Fisheries, FDRE
Agriculture continues to be at the forefront of Ethiopia’s rapid economic growth, not least because of important gains made during GTP I (2010 to 2015). While agriculture will continue to play a critical role in Ethiopia’s development, providing the output required to feed a growing population, it also plays an important role in the industrialization and overall transformation of the broader economy. Central to advancing the transformation of Ethiopia’s agriculture sector is the need to ensure that smallholder farmers and pastoralists are empowered with the tools, knowledge, and support needed to transition from a traditional subsistence orientation to one that is market focused and more commercialized.

Supporting this transition and helping to identify and address systemic bottlenecks that limit growth in the agriculture sector has been the ATA’s mission since it was established in 2010. The ATA works with all key stakeholders in the agriculture sector to catalyze transformation by focusing on a targeted set of critical deliverables that form the Government of Ethiopia’s Agricultural Transformation Agenda.

In alignment with the objectives of GTP II, the Transformation Agenda for the 2015 to 2020 period is more cross-sectoral in its focus and includes a wider range of actors and partners. In addition to the traditional focus on increasing the production and productivity of both crop and livestock commodities, there is now a greater emphasis on market linkages and the development of domestic and export markets. Central to all of the work is a renewed commitment to ensure that growth within the sector is broad-based and brings both social and environmental benefits such that transformation is inclusive, equitable and sustainable.

This first year of the GTP II Transformation Agenda has seen varying levels of progress across the 50 Deliverables and 190 Sub-deliverables that have been identified. For Deliverables that were carried over from GTP I, activities have continued at an impressive pace. Newer Deliverables and Sub-deliverables have used the first year of GTP II to consolidate plans and build a common understanding among all stakeholders involved on roles and responsibilities in moving each intervention forward. Perhaps most significantly, the last year has seen the introduction and launch of the Agricultural Commercialization Clusters (ACC) Initiative, which will integrate key Deliverables and Sub-deliverables within the Transformation Agenda in high-potential geographies across the country.

Any successes in the Transformation Agenda require the collective efforts of all key stakeholders in the sector, including public, private and civil society organizations. Our development partners have been essential to the process by providing critical thought partnership and financial support to many Deliverables. The role of Development Agents and regional, woreda, and kebele level officials must also be recognized. Ultimately, however, the major effort of transforming Ethiopia’s agriculture sector has and will continue to rely on the ingenuity and hard work of our smallholder farmers. They are the backbone of the country’s agricultural system and will be the major actors in the transformation process.

Khalid Bomba
Chief Executive Officer, the ATA
AGRICULTURE IN ETHIOPIA
Overview

Over the past decade, Ethiopia has made tremendous economic progress to become one of the fastest growing countries in the world. Between 2005 and 2015, the country’s GDP more than quadrupled from 12.4 billion USD to 55.6 billion USD, compared to the more moderate increase of 63% from 7.6 billion USD to 12.4 billion USD in the previous ten years (1995 to 2005). This growth was fueled by widespread institutional and policy reforms carried out by the Government of Ethiopia (GoE) across all major sectors (education, health, water, transport and telecommunications), but particularly in agriculture, which forms the backbone of the national economy. These reforms have gone a long way toward reducing the number of Ethiopians living in poverty: in 1995 nearly 79% of the population was living in poverty, a figure that has been slashed by more than half to 34% 20 years later.

This remarkable progress notwithstanding, Ethiopia’s agriculture sector remains paradoxically underdeveloped. As the largest component of the economy, agriculture employs a majority of the Ethiopian population. The majority of these are smallholder farmers practicing subsistence farming on less than one hectare of land. Furthermore, the country is not exploiting effectively its vast natural resources, as less than half of all arable land is currently under cultivation (15% versus 36% of total land area). Additionally, a majority of the agricultural activity is environmentally unsustainable and relies on annual rainfall despite the availability of abundant water sources.

Nonetheless, considerable and continued investments by the Government have succeeded in helping farmers increase their crop production and productivity, adopt yield-enhancing inputs, and leverage community organizations like cooperatives to aggregate produce so that farmers can benefit from economies of scale. Recent economic gains have also made Ethiopia an attractive destination for foreign direct investment. Coupled with the wide range of crops (over 100) that can be cultivated across the country’s varied agro-ecological zones and climates, there are plenty of reasons to be optimistic about future agricultural developments.

The GoE’s primary development target is to reach middle income country status by 2025, an aspiration that requires serious attention to be paid to the existing systemic bottlenecks hindering further agricultural growth. In addition, agriculture must serve as the basis for industrialization in order to reap maximum rewards from the country’s comparative advantages in producing raw materials. For example, coffee, sesame and vegetables – the country’s top agricultural exports – account for a combined 1.4 billion USD in annual earnings, but could fetch far more after agro-processing for value addition than they do as raw materials.

Capitalizing on these agro-processing opportunities, however, requires addressing challenges along the entire value chain, including: limited transportation and processing infrastructure; insufficient aggregation and storage capacity; outdated farming techniques yielding lower quality outputs; low input use; and high vulnerability to climate change and extreme weather events, such as the 2015 El Niño phenomenon.

In light of these circumstances, the Government has set out clear objectives to transform the agriculture sector, and the economy as a whole, in successive Growth and Transformation Plans (GTPs).
Status of Ethiopian Agriculture

Diversity of Climate and Agro-ecologies

Ethiopia’s geography is as varied as it is large, ranging from an altitude of 4,620 meters at the peak of the mountain Ras Dashen to a low of 126 meters below sea level in the Danakil Depression. This range, coupled with climactic heterogeneity and the country’s proximity to the equator, enables a wide array of agricultural systems and livestock rearing to be carried out in different parts of the country.

Altitude in Ethiopia is correlated with rainfall. With the exception of the west, which is both low-lying and wet, higher areas generally receive more rainfall than lowlands, which constitute more than half of the country’s geography and tend to be more suitable to grazing than consistent crop production. A number of other factors are influenced by altitude, including land and soil suitability, natural vegetation types, and crops grown.

Traditionally, Ethiopia’s agro-ecologies are categorized into five major groupings that have been used for hundreds of years: hot and dry, hot and wet, warm, cold and wet, and cold and dry. Much of Ethiopia experiences twice-yearly rainfall, with the short wet season in March and April followed by the long rains between June and September. In many areas, this allows for cultivation of two crops a year.

Farmers have long recognized that these climactic conditions considerably impact agricultural potential and production. Accordingly, the belt of land bordering the Rift Valley (which divides the southern part of the country) experiences the most intensive farming activity; the weather here is temperate, rainfall is consistent, and soil is fertile. In the central and northern highlands, as well as in the west, where rainfall is heavy, a mix of crop types and livestock can be found. The arid east, on the other hand, is home to an array of pastoralist communities who depend primarily on livestock for their livelihoods.

Major Crops and Livestock

Smallholder farmers, whose output is predominantly cereal crops, account for 95% of agricultural production in Ethiopia. Maize, wheat, and tef are the most important cereals in terms of volume, accounting for a combined total of 77% of all cereal production, but barley, sorghum and millet are also widely grown. Pulses and oilseeds constitute other major crop types grown for domestic consumption and export, including chickpea, sesame, sunflower, groundnut, and various beans. Root vegetables such as carrot, potato, and cassava are also cultivated, as is enset (also known as “false banana”, an endemic staple crop in Ethiopia), and several horticultural crops.

Coffee is Ethiopia’s biggest export crop in terms of value; it earns 844 million USD per year, followed by sesame: 349 million USD, and fruits and vegetables: 237 million USD. The climate in many parts of the country is suitable for growing an assortment of tropical and sub-tropical fruits like banana, mango, papaya, guava, and pineapple. Leather is another major export; in 2015, leather and leather products earned 1.47 billion USD in international markets. This industry is maintained with a steady supply of skins and hides from Ethiopia’s livestock population, the biggest in Africa. An estimated 56 million cattle, 29 million sheep, 29 million goats, and 57 million poultry are found in the country. Equines, which serve as pack animals in most areas, make up another nine million, while one million camels can be found in the lowlands of the north and east. In addition to providing skins for leather products, cattle, sheep, and camels are exported live, in large part to the Middle East.

The dairy industry, however, remains nascent in Ethiopia, with smallholders consuming much of the milk, butter, and cheese they produce in the household, but medium-to-large scale dairy production is developing around major towns and cities, though per capita dairy consumption remains low as compared to neighboring countries.

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Production of Major Cereals in 2015

- **All Cereals**: 236 million tons
- **Maize**: 48 million tons
- **Wheat**: 11 million tons
- **Sorghum**: 20 million tons
- **Tef**: 43 million tons
- **Barley**: 42 million tons
- **Others**: 72 million tons

Production of Major Livestock in 2015

- **All Animals**: 181 million
- **Poultry**: 57 million
- **Cattle**: 29 million
- **Sheep**: 18 million
- **Goats**: 29 million
- **Others**: 10 million

Challenges to Agricultural Growth

The enormous diversity of Ethiopia’s topographies, climates, and agricultural systems also presents challenges that require equally varied and tailored solutions in order to address the needs of the communities whose livelihoods depend on proper utilization of the country’s natural resources.

Some 19 different soil types can be found throughout Ethiopia, all of which have varying fertility needs. Extensive soil fertility studies carried out by the ATA and partners have shown that most soils are deficient in one or more nutrients (such as phosphorous and nitrogen) and require rehabilitation. Without adequate application of the right fertilizers, these soils cannot be expected to increase and sustain higher crop yields. This is compounded by a soil erosion rate of an estimated 1.5 billion metric tons of soil per year.\textsuperscript{11}

Soil erosion is exacerbated by a high incidence of deforestation: between 1995 and 2010, the area of land covered by forest decreased by 14.6\% (from 144,000 square kilometers to 123,000 square kilometers) before increasing marginally at a rate of 1.6\% over the subsequent five years.\textsuperscript{12} Widespread deforestation results from Ethiopia’s rapidly expanding human and livestock population, which leads farmers to clear forests for cropland and animal grazing.

In addition, the vast majority of Ethiopian agriculture remains rain-fed, although small-scale, low-mechanization irrigation is practiced in some areas. This often entails diverting streams and small rivers toward cultivated land, but does not access the stores of ground water reserves Ethiopia is known to have. Irrigation of this sort is labor-intensive and does not capitalize on the relatively simple irrigation technology manufactured in the country. More importantly, the overreliance on rainfall makes agriculture highly variable to climate change and extreme weather events, in particular recurring droughts that have plagued the country for decades.

Development Plans

Over the years, the Government of Ethiopia has formulated and implemented a number of policies to transform the economy using agricultural development as the primary driver of change. Beginning with the Agricultural-Development Led Industrialization (ADLI) strategy in 1993, the Government initiated a two-pronged approach to developing agriculture through the production of agricultural commodities for export, domestic consumption, and industrial output; and the expansion of the market for domestic manufacturers. This was followed in 2000 with the five-year Sustainable Development and Poverty Reduction Program (SDPRP), an economic policy that envisioned agriculture-driven economic growth as a means to reducing poverty. Since

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\includegraphics[width=\textwidth]{Agriculture Share of GDP 1995-2015}
\caption{Agriculture Share of GDP 1995-2015}
\end{figure}
becoming a signatory to the Comprehensive Africa Agriculture Development Program (CAADP) compact in 2009, Ethiopia has committed 14% of its budget to agriculture each year. This continues a trend that began well before the signing of the compact and has allowed Ethiopia to consistently surpass the 6% annual agricultural growth target set by CAADP.\textsuperscript{14}

Between 2005 and 2010, a second five-year plan was introduced with the goal to accelerate the transformation of smallholders from subsistence to commercial farming within the framework of the national food security program. This Plan for Accelerated and Sustainable Development to End Poverty (PASDEP) categorized Ethiopia’s major agro-ecologies into three overarching types and outlined tailored approaches to developing farming systems in each one. PASDEP emphasized increasing crop production and productivity in areas with adequate rainfall to help maintain food security; targeted reducing volatility of production and increasing off-farm income opportunities for people in moisture-stressed areas; and encouraged specialization in livestock production and marketing in pastoralist communities.

In 2010, with the launch of the first of three successive Growth and Transformation Plans (GTPs), the Government of Ethiopia has detailed a set of economic objectives and targets that once more put agriculture at the heart of the country’s growth. The first of these plans, GTP I – which outlined development targets for 2010 to 2015 – focused on increasing agricultural production, strengthening agricultural research, and facilitating stronger market linkages. Fourteen specific objectives were set for the agriculture sector and used to determine agricultural priorities for improving crop and livestock production, ensuring food security, strengthening markets, improving agricultural services, and driving investment in the sector.

GTP II, which directs development priorities until 2020, builds on the goals of GTP I, with a gradual shift in emphasis toward high-value crops and livestock and a greater focus on market orientation. Underpinning all of this is a stronger commitment to ensuring that agricultural transformation is environmentally sustainable and inclusive, taking into account natural resource management and climate adaptation and mitigation needs, as well as the particular concerns and participation of women, youth, and marginalized populations.
THE TRANSFORMATION AGENDA
The Transformation Agenda in GTP I and Expectations in GTP II

The goals of GTP I were broad and ambitious. In addressing the goals outlined for the agriculture sector, stakeholders recognized that genuine transformation would require the coordination of a complex range of actors to implement strategically selected and integrated interventions simultaneously. In Ethiopia, this set of prioritized interventions is known as the Agricultural Transformation Agenda. These interventions focus on effective execution of solutions and aligning complementary efforts that, together, may produce exponentially beneficial results and address systemic bottlenecks in the sector.

A number of pilot initiatives in GTP I proved effective enough to scale up across the country, delivering real results for smallholders.

The **TIRR package** that recommends the use of smaller quantities of improved seed and row planting techniques is helping to enhance tef productivity.

The **EthioSIS** digital soil mapping initiative analyzes soil nutrient needs across the country to recommend customized fertilizer application at the woreda level for better soil health and crop yields.

The **Direct Seed Marketing** initiative introduces a more efficient approach to delivering seed to farmers by engaging the private sector and leveraging market principles to improve supply chain management.

The **IVR/SMS** project provides agronomic information to farmers via the 8028 toll-free short code hotline to help smallholders improve farming practices.

Though the Transformation Agenda is not an attempt to address all the challenges of Ethiopian agriculture, it does aim at cultivating an approach to the sector that:
- Identifies and ensures the implementation of strategic interventions that will address systemic bottlenecks that are constraining transformational change in the agricultural sector;
- Values and prioritizes continuously piloting, testing, monitoring and adapting for changing circumstances, rather than rely on traditional or blanket practice;
- Takes into account the environmental sustainability and climate sensitive nature of agricultural practices;
- Is inclusive of marginalized populations, including women, pastoralists, and farmers in agriculturally marginal and lowland areas.

From 2010 to 2015, the Transformation Agenda was aligned with the goals of GTP I and targeted four broad focus areas in the agriculture sector: 1) Agricultural Systems; 2) Specific Commodity Value Chains; 3) Crosscutting Initiatives; and 4) Special Projects.

Each of these pillars included specific program areas that were prioritized as the most important for transformation. Diagnostics were undertaken in each program area to determine the most critical bottlenecks and the specific interventions (Deliverables) needed to address them. In total, the Transformation Agenda in GTP I included 16 program areas with 84 specific Deliverables.

At an operational level, the Transformation Agenda under GTP I successfully aligned stakeholders around key strategic Deliverables and strengthened a wide range of sector implementation structures. It also integrated a continuous learning process into the execution of Deliverables, in part through the introduction of effective and regular reporting formats.

**Major Challenges and Lessons from GTP I Period**

Implementation of the Transformation Agenda is a complex process requiring action on multiple fronts. Over the past five years there have been a number of initiatives that were challenging to implement and in many cases did not proceed according to plan. Some examples of Deliverables that faced considerable obstacles are: strengthening the capacity of public and private seed producers; developing business models for the promotion of lime for acidic soils; creating a robust Market Information System for strategic commodities; and developing a comprehensive ICT in Agriculture strategy. The challenges encountered in the execution of these (and other) Deliverables offered immense
opportunities for learning, which the ATA captured by employing a robust tracking and reporting function during GTP I. In addition, a survey of implementing partners was conducted at the end of the GTP I period.

Survey results from GTP I indicate some important lessons in the design and implementation of the Transformation Agenda in GTP II. This includes a recognition that the Transformation Agenda must include: 1) clearer articulation of catalytic interventions that can address systemic problems constraining the transformation of the sector; 2) strong leadership and commitment by all stakeholders; 3) strong implementation support, including piloting of new ideas, detailed and timely problem solving, and capacity building to institutionalize and scale new initiatives; and 4) well-defined objectives with proper monitoring and reporting on progress toward them.

Most importantly, implementation of the Transformation Agenda must be a joint effort, with federal ministries and their affiliated institutions overseeing implementation, regional bureaus and their sub-regional counterparts taking on the main responsibility for implementation, and with the ATA providing various types of project and implementation support.

Additionally, for agricultural transformation to be successful and sustainable, multiple interventions across agricultural value chains and sectors need to come together simultaneously. For new technologies to be meaningful, they must promote environmental sustainability and ensure equitable growth by engaging disadvantaged populations, including women and youth. Interventions related to markets must also be given sufficient attention to enhance returns on production and provide incentives for broad investment and commercialization.

Coordination of interventions across value chains and sectors is also required in order to align multiple actors, who have to come together to clarify responsibilities, ensure ownership of activities, and monitor and report on progress. Effective coordination of these key stakeholders proved a key challenge in implementing the Transformation Agenda during the GTP I period. It was particularly challenging to engage stakeholders in sectors beyond agriculture such as trade, finance, water development, and industry.

Another challenge was the lack of adequate capacity to achieve the Government of Ethiopia's far-reaching ambitions for agricultural transformation. The Transformation Agenda’s 84 Deliverables during GTP I were chiefly concerned with articulating strategies, implementing institutional reforms, developing regulatory systems and infrastructure, upgrading agricultural services and information systems, and supporting various value chain actors. The substantive content interventions in the Transformation Agenda therefore had to be complemented by strong action on capacity building and institutional development.

By its very nature, the Transformation Agenda seeks to promote change. Implementing agencies, however, need to deliver on existing day to day responsibilities as well as the Deliverables in the Transformation Agenda. Often, while the importance of transformation is recognized, implementers tend to be caught up in urgent matters related to the delivery of current services and programs, which compete for resources and attention with Transformation Agenda Deliverables.

As a result, the implementation of the Transformation Agenda was sometimes stalled when competing priorities took precedence. This challenge was further compounded by the way in which financial resources were mobilized for the Transformation Agenda, which
The Government of Ethiopia (GoE) has long recognized that – as a still primarily agrarian economy – the development of the agriculture sector is a critical foundation to realize growth in the industrial and manufacturing sectors, as well as the country overall. In many ways, Ethiopia is now in a similar stage of development that a number of Asian countries faced when they began their rapid journeys to development in the middle of the 20th century.

Countries such as Taiwan and South Korea were able to leverage their agriculture sectors to catalyze broad-based economic development by prioritizing interventions in three key areas: 1) production and productivity gains for smallholder farmers focused on increased agricultural surpluses to generate foreign exchange; 2) domestic agro-processing, manufacturing, and industry with an emphasis on value-added export markets; and 3) a financial system orientated to these agricultural and industrial needs.15

For progress reporting, the GTP II Transformation Agenda Deliverables are articulated according to a clear hierarchy of objectives, and a related results framework has been developed against which targets and milestones have been set. Similarly, crosscutting issues (i.e. gender, nutrition and climate) and capacity development activities have been systematically integrated into Transformation Agenda Deliverables.

**Transformation Agenda in GTP II**

The Government of Ethiopia (GoE) has long recognized that – as a still primarily agrarian economy – the development of the agriculture sector is a critical foundation to realize growth in the industrial and manufacturing sectors, as well as the country overall. In many ways, Ethiopia is now in a similar stage of development that a number of Asian countries faced when they began their rapid journeys to development in the middle of the 20th century.

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**GTP II Transformation Agenda Objectives**

I. Accelerated growth in agricultural production with a gradual shift toward high-value commodities

II. Sustainable, broad-based, and inclusive agricultural development resulting in the elimination of any national food gaps

III. Establishment of a market system that benefits farmers and non-farm actors

IV. Improved implementation capacity: institutional and human resource (attitudes, skills, competency)

Ethiopia’s second GTP from 2015-2020 draws strongly from the Asian approach, and agricultural development represents the cornerstone of the GoE’s ambition to achieve middle income status by 2025. Equally, during GTP II, the Transformation Agenda takes lessons from these Asian examples, while also identifying and addressing systemic issues that accommodate the needs of today’s globalized food system and the unique challenges within Ethiopia’s agriculture sector. Chiefly, the Transformation Agenda seeks to support a shift from today’s focus on subsistence farming toward more productive, inclusive, environmentally sustainable and commercialized forms of smallholder farming agriculture.

The first GTP, like many of Ethiopia’s previous development plans, centered its agricultural objectives on increasing the production and productivity of traditional crops to move the country toward food...
security. The subsequent achievements have allowed (and simultaneously necessitated) policymakers to widen the scope of their efforts to include more sophisticated components of the agriculture sector. Programmatically, the Transformation Agenda in GTP II aims to expand its focus to include a broader set of program areas than it did under GTP I. Issues within the traditional realm of the trade, industry, and water resources sectors are an increasing focus during GTP II. There is also a greater emphasis on crosscutting issues and implementation capacity challenges.

The Transformation Agenda during GTP II, while continuing activities to increase crop production and productivity, additionally targets improving the production and productivity of livestock (which was not a major areas of focus in GTP I), diversification into high value crops, strengthening market systems, and better utilizing natural resources. Furthermore, while the four pillars, 16 programs, and 84 Deliverables in the GTP I Transformation Agenda were primarily centered on issues within the domain of the core agriculture sector, the Transformation Agenda in GTP II engages a wider array of sectors and includes four different pillars, 30 programs, 50 Deliverables and 190 Sub-deliverables. Finally, a new Anchor Initiative, the Agricultural Commercialization Clusters (ACC), aims to integrate all relevant interventions within specific high-priority geographies and commodities.

**Pillar 1:**
The first pillar of the Transformation Agenda in GTP II deals with the systemic bottlenecks constraining the production and productivity of crops and livestock. Despite the significant growth in farmers’ production and productivity over the past few years, the volume of produce that is sold as marketable surplus has increased at a slower pace. Continued focus on supporting farmers to increase the use of recommended inputs (improved seed and animal breeds, fertilizer, modern vaccines and farming techniques, etc.), adopt technologies to minimize post-harvest losses, and leverage mechanized farming implements and approaches that maintain the quality of their production to yield the highest market prices are main focal areas of this pillar. Furthermore, this pillar aims to expand farmers’ access to different types of financial products, market systems, and extension services in order to more effectively link increased production to market requirements.

**Pillar 2:**
The second pillar focuses on issues that will ensure that all production and productivity increases are environmentally sustainable and socially inclusive. The GTP II’s agricultural objectives place significant emphasis on sustainable farming methods that are environmentally friendly and take into account climate change mitigation and adaptation. Important elements of sustainability within the Transformation Agenda include understanding the soil nutrient needs of agricultural land and replenishing as necessary; repurposing crop residue for animal feed or composting; integrating proper land management techniques; and implementing practices such as double-cropping that serve the dual purpose of restoring nutrients to soil while allowing farmers to crop year-round.

**Pillar 3:**
The third pillar recognizes that any sustainable gains in production and productivity require reliable markets and agro-processing capacity in order to transform the agriculture sector. Initiatives in this area focus on streamlining marketing channels so that farmers can sell their outputs in a timely manner and earn greater profit with lowered transaction costs. This requires interventions that ensure that farmers become better informed about market demands and pricing to make informed decisions and strengthen their negotiating position. The development of quality standards for commodities is also essential to stabilize prices at market, while at the same time providing price
incentives to farmers. Investments in medium- and large-scale farming must also be undertaken with a view on how they can effectively link to smallholders through contract farming and out-grower schemes.

**Pillar 4:**
The fourth pillar of the Transformation Agenda in GTP II focuses on strengthening the institutional and human capacity of the agriculture sector in order to ensure that any gains will be systemic and sustainable.

Building the capacity of public institutions is critical to driving the design of transformational strategies, policies, and regulations, while private institutions must be fully engaged in order to build the financial viability and sustainability of interventions in the long term. The development of strong planning, monitoring and evaluation capabilities additionally ensures that interventions are well planned, their impacts accurately measured, and all lessons effectively captured. Finally, integrating the use of information and communication technologies (ICTs) can assist in the development of a wider range of innovative solutions to bottlenecks in the agriculture sector.

**Anchor Initiative:**
In addition to these four pillars, the Transformation Agenda in GTP II includes an “Anchor Initiative” – the Agricultural Commercialization Cluster (ACC) - that aims to integrate all the Deliverables from the four other pillars in specific strategic geographies and commodity value chains. The approach entails coordinating the interventions of various implementers in the Transformation Agenda as well as other actors along the agricultural value chain in order to enhance their complementary activities for greater impact on the ground. Such a geographically focused approach has successfully been used by a number of countries to drive agricultural transformation and rural industrialization. Ethiopia has also attempted similar programs in the past with limited success. The ACC Initiative aims to learn from past activities in this area and infuse international best practices to create measurable and sustainable change in clearly defined locations across the entire country.

**Developing Transformation Agenda Deliverables**
The process of identifying the programs, Deliverables, and Sub-deliverables for GTP II began in the final year of GTP I with the appointment of a ministerial-level working group designated by the Prime Minister. The working group was tasked with developing a high-level vision for Agriculture and Rural Development Transformation in GTP II. Using the five strategic objectives for the agriculture sector set out by this working group in the GTP II as a starting point, the ATA and the Ministry of Agriculture and Natural Resources (MoANR) worked with federal and regional stakeholders to identify priority areas of focus for agricultural transformation in the next five years.

The four pillars that emerged for the Transformation Agenda under GTP II are:
- Increasing crop and livestock production and productivity;
- Environmentally sustainable and inclusive growth;
- Commercial orientation of smallholder agriculture and market development; and
- Enhancing implementation capacity.

For each of these pillars, a widely consultative process was undertaken to prioritize a set of 30 program areas where transformation is necessary. The details of the Deliverables and Sub-deliverables in each of the...
programs in the Transformation Agenda for GTP II were developed in two main phases. The first phase focused on program areas that had been part of the Transformation Agenda in GTP I; the second phase dealt with the new program areas that required analytical and diagnostic efforts in order to prioritize Deliverables and Sub-deliverables critical for transforming the specific program area.

An overview of progress made against all Deliverables is provided in the following section of this report. A more detailed review of several highlighted Deliverables, as well as a summary of the goals and progress against each pillar, its respective program areas, and the new Anchor Initiative, is outlined in subsequent sections.

**Implementing the Transformation Agenda: Key Partnerships**

Given the width and breadth of the Transformation Agenda in GTP II, the activities across the 30 programs, 50 Deliverables and 190 Sub-deliverables are well beyond the capacity and mandate of any one organization or sector to implement. Implementation requires the coordinated action of a variety of different actors from across the entire economy.

The design of the Transformation Agenda leverages Ethiopia’s developmental state model to harness the public sector as the primary actor for leadership. While a number of other stakeholders are expected to play important roles in the design, testing, and implementation of interventions in the Transformation Agenda, the public sector is responsible for driving the process forward. Within this context, different partners within the public sector have specific roles and responsibilities.

**The Transformation Council:**

At a higher level, the overall ownership of the Transformation Agenda concept is the purview of the Agricultural Transformation Council, which is chaired by the Prime Minister and includes many ministers and other senior policymakers in the Ethiopian government. This Council is responsible for approving the programs, Deliverables and expected outcomes of the Transformation Agenda in GTP II. The Council also meets every two months to review implementation progress. Through these Council meetings, clear guidance is provided on policy-related issues and accountability is ensured.

**Federal Ministries & Regional Bureaus:**

The ownership of progress in individual program areas lies with specific State Ministers and Director Generals, and ultimately, the Ministers and Bureau Heads at the federal and regional level. Each program within the Transformation Agenda is owned by a specific individual within the public sector who is accountable for the progress in the program. Based on the high-level outcomes expected by the Transformation Council, these individuals are responsible for determining the specific Deliverables and Sub-deliverables necessary to achieve these outcomes and setting annual and quarterly milestones to meet GTP II targets. Furthermore, these individuals assign and oversee Implementation Coordinators who are responsible for execution in specific Sub-deliverables within each program area.

The ultimate ownership of implementation, however, occurs at the regional, zonal, woreda, and kebele levels. As such, Implementation Coordinators must closely align with officials at all levels of government and across sectors to ensure that limited human and financial resources are utilized in the most efficient manner. They must also ensure that the concepts and initiatives prioritized in their Sub-deliverables effectively reach smallholder farmers through the Development Agents (DAs) that work most closely with them. Finally, Implementation Coordinators are responsible for broadening the scope of implementation partners by identifying and leveraging alternative sources of implementation capacity outside of the public sector (i.e. NGOs, development partners and private sector) in order to fully engage all key actors for change and development.

While the public sector is expected to play a major role in the leadership and implementation of the Transformation Agenda, accelerated and far-reaching change will not come without the engagement of other actors, development partners being some of the most important. During the course of Ethiopia’s recent agricultural transformation journey, many important contributions have come from development partners, who often provide the financial resources needed to implement major initiatives. They also provide important thought partnership and access to international best practices. Ethiopia’s desire to transform its agriculture sector at an accelerated pace requires the adaptation of proven concepts that have worked in other countries. In this way, Ethiopia does not need to “reinvent the wheel”.

Although a relatively new approach for the public sector, a deeper engagement with both NGOs and private sector actors is also important. While both NGOs and the private sector have been active in Ethiopia’s agriculture sector for decades, there must be renewed focus on how to more effectively leverage their expertise and capacities during the implementation of the Transformation Agenda in GTP II.
**NGOs:**
At present, NGOs are well positioned to support the Ethiopian government in accelerating agricultural growth. NGOs can pilot and test new ideas that draw upon international best practices, as well as assist with the scale-up of interventions. They can also provide technical support to public and private sector actors in the short term while building implementation capacity in the long term. NGOs are vital in this stage of Ethiopia’s development because they can bolster the efforts of both the nascent private sector and large public sector to assist both in collaborating more efficiently.

**Private Sector:**
The private sector is also expected to become an essential driver of growth in Ethiopia’s next stage of development, as agriculture evolves from a subsistence to a more commercial orientation. A great deal of attention is currently and rightly paid to international and multinational companies, especially with regard to introducing and modeling agro-processing activities that can serve as the link between agriculture and industry. It is important, however, for Ethiopia to also focus strongly on encouraging the involvement of the local private sector, all the way down to small and medium sized enterprises in rural areas. These institutions will be engaged at various stages as agricultural produce moves from farm, to market, to table.

**Smallholder farmers:**
Ultimately, the most important partners in the transformation of Ethiopia’s agriculture sector are the smallholder farmers who account for the vast majority of agricultural production in the country. The process of developing and implementing the Transformation Agenda requires close consultation with this critical constituency to ensure that the focus areas of work are indeed addressing their most important needs and challenges. The design of interventions must also leverage indigenous knowledge and practices to ensure that solutions are quickly accepted and easily scaled. In many cases, innovations come from or are enhanced by the local knowledge of smallholder farmers who are constantly testing and refining new ideas. As such, the deep and close partnership with the millions of smallholder farmers in the country, who are the key drivers of change and transformation, will be fundamental to the Transformation Agenda.

Please see the final pages of this report for a complete list of the many partners involved in implementing the Transformation Agenda.
The ATA’s Mandate and the Transformation Agenda

What is the ATA?
The ATA is a time-bound government organization that plays a unique but limited role to catalyze and support agricultural transformation in Ethiopia. The ATA aims to fulfill its mandate within a 15-20 year lifespan, during which the organization is expected to sufficiently catalyze transformation, help build capacity in critical parts of the agriculture sector, and handover ownership of the activities that will bring about sustainable change to other partners.

The ATA’s role in the Agricultural Transformation Agenda has sometimes been a source of confusion. Fundamentally, the ATA was established to support senior policymakers and key institutions with strategic input on planning, coordinating, implementing, tracking, evaluating, and refining the interventions that are aimed at transforming Ethiopia’s agriculture sector.

ATA’s Role in the Transformation Agenda
The ATA plays three very specific roles in implementing the Transformation Agenda.

Supporting the Planning of the Transformation Agenda
The ATA supports the planning of the Agricultural Transformation Agenda through extensive consultation with different stakeholders including senior policymakers, managers and experts at federal and regional levels. Applying best practices and innovative approaches from Ethiopia and abroad, the ATA coordinates the planning of interventions that address systemic issues hampering transformation of the sector.

The main phases of the planning process are:

- Developing a detailed understanding of the systemic bottlenecks that constrain the sector;
- Identification of prioritized transformational interventions that address the systemic bottlenecks;
- Detailed planning of Deliverables, Sub-deliverables, tasks, milestones and targets, as well as identification of Deliverable owners responsible for implementing and reporting on progress.

Supporting the Implementation of the Deliverables and Sub-deliverables in the Transformation Agenda
Both Deliverable owners and the ATA have distinct roles to play in the implementation of Transformation Agenda Deliverables. While the Deliverable owner assumes primary responsibility and accountability for the timely implementation of the specific Deliverable and Sub-deliverable, the ATA provides targeted “implementation support” on a demand basis, along five pre-defined areas: 1) technical support; 2) analytical support; 3) operational support; 4) resource mobilization / management support; and 5) special assignment support.

In limited circumstances where there is urgency and lack of implementation capacity in the system, the ATA is asked to lead (working jointly with a partner in the system) in executing a specific Deliverable or Sub-deliverable as a project. In these unique cases, while the ATA leads in implementing the project, it also undertakes a clear and detailed process to build the capacity of the long-term owner in the system for eventual handover of the project.
Tracking and Reporting on Progress in the Transformation Agenda

The Agricultural Transformation Agenda is owned by the Transformation Council and overseen by the MoANR, the MoLF and the regional governments while being implemented by multiple stakeholders across the sector. The complexity of this multiple ownership structure demands a harmonized and robust tracking and reporting system to flag and solve implementation problems in real time and at all levels.

Accordingly, in addition to the implementation support described in the previous section, the ATA provides tracking and reporting support to all Deliverables and Sub-deliverables in the Transformation Agenda. For each Deliverable, annual targets and quarterly milestones are established, which form the basis for tracking. The ATA has designed an online system to track progress against agreed milestones, which automates the delivery of updates on progress and challenges to relevant Ministers, State Ministers and agency heads on a weekly basis. In addition to this, a report is provided to the Prime Minister and the Transformation Council every six months on each Deliverable and to the Agriculture Standing Committee of the Parliament on a quarterly basis through the ATAs tracking and reporting support.

How the ATA Works

The ATAs work is carried out by the staff it currently employs in core, project, and regional staff positions. The majority of staff are based in the ATAs Addis Ababa headquarters, but with the launch of the ACC Initiative, ATAs regional offices — located in the regional capital cities of Bahir Dar (Amhara), Mekele (Tigray), Addis Ababa (Oromia), and Hawassa (SNNP) — have grown significantly over the last year.

In Addis Ababa, four principal programmatic teams, or verticals, are structured to align with the four pillars of the GTP II Transformation Agenda. Core staff in these vertical teams support and track the implementation of the Transformation Agenda Deliverables in close collaboration with external partners. Within each vertical, project staff work on specific Deliverables that the ATA has been asked to jointly own and implement. In the regional offices, regional staff work with appropriate counterparts among the program teams and Transformation Agenda Deliverable owners to implement geographically targeted initiatives, focusing on key commodities and interventions within prioritized ACC clusters.
Staff in programmatically-oriented vertical and ACC teams often partner with ATA’s Analytics vertical, which is a strategic advisory and consulting function housed within the organization. The Analytics vertical is modeled after global strategy consulting firms, and works on high-priority, analytically challenging cases with both internal ATA teams and external partners through a client-service model. The cases prioritized by the Analytics vertical cut across five thematic areas: strategy development and strategic planning; policy and regulatory analysis; institutional and organizational enhancement; business model and business case development; and design and incubation of catalytic projects.

Performance Monitoring, Partnerships, and Communications teams within the ATA further support program teams to capture and communicate the learnings from their work, while additional staff within the CEO’s office ensure that the ATA lives up to its own internal and governmental standards. All of these teams are further supported by the ATA’s Operations teams, which provide the foundations for the work in the rest of the organization to happen: from identifying and retaining the right talent, to effectively managing the organization’s financial resources, to ensuring the safe and efficient movement of staff around the country, and procuring and maintaining assets and services needed to deliver the ATA’s commitments.
HIGH-LEVEL PROGRESS
OVERVIEW OF THE GTP II TRANSFORMATION AGENDA
Planning GTP II Agricultural Transformation Agenda Deliverables

Achieving agricultural transformation requires unlocking systemic bottlenecks through carefully designed interventions. Based on the lessons drawn from planning and implementing the Agricultural Transformation Agenda during GTP I, the process of designing the GTP II Transformation Agenda was widely participatory and highly consultative. It began in the final year of GTP I and effectively engaged the GTP II Working Group, a ministerial-level working group designated by the Prime Minister to develop the high-level vision for Agriculture and Rural Development Transformation in GTP II. Moreover, the ATA and MoANR worked with federal and regional stakeholders to identify the broad pillars for agricultural transformation in the next five years, to align these with the GTP II agriculture sector goals and targets, and to define key program areas to operationalize the pillars.

Through the process, four strategic pillars focusing on: 1) increasing agricultural production and productivity; 2) environmentally sustainable and inclusive growth; 3) agri-business and market development; and 4) enhancing implementation capacity, have been identified. Moreover, 30 program areas aligned with the four strategic pillars have been defined. Further, analysis and prioritization of systemic bottleneck problems was done for these 30 programs. Thereafter, in consultation with senior policymakers at federal and regional levels and through the process of designing transformational interventions to address the bottlenecks of the 30 program areas, 50 Transformation Agenda Deliverables and 190 Sub-deliverables were identified.

The GTP II Transformation Agenda has considered lessons from GTP I, and integrated the work that needed to continue from GTP I as well as new areas that needed to be incorporated for further transformation of the agriculture sector. In order to maintain implementation momentum during the transition to GTP II, a series of multi-stakeholder workshops were organized before the end of GTP I to agree on the continuation of 12 of 16 programs from GTP I to GTP II. The remaining four programs, all related to value chains, were also maintained but as part of the ACC Initiative. Furthermore, for these 12 programs, stakeholders developed prioritized Deliverables, Sub-deliverables, and activities for the next five years and also determined clear ownership, roles and responsibilities in order to commence implementation during 2008 EC.

The process ensured strong alignment on objectives, targets, activities and milestones of the selected programs; clear ownership and accountability among stakeholders; and appropriate consideration and mainstreaming of crosscutting issues, particularly related to gender equality, environment and climate change adaptation.

Parallel to the implementation of the 12 program areas, the ATA supported the detailed planning of the remaining 18 new program areas. Diagnostic studies were undertaken in order to clearly identify systemic issues within the new program areas and design appropriate interventions. Based on the recommendations of the diagnostic studies and through consultation with relevant stakeholders, prioritized Deliverables, Sub-deliverables, and tasks for the GTP II period have been defined and approved by Deliverable owners. Annual activity plans and budgets for 2009 EC have also been developed for the 18 new program areas.

All program areas included in the GTP II Transformation Agenda have therefore completed a detailed planning process with close engagement of senior policymakers, managers and experts in the agriculture sector and beyond. A total of 50 Deliverables and 190 Sub-deliverables have been defined for implementation during the GTP II period. Five crosscutting programs areas do not have their own Deliverables, but are instead mainstreamed throughout the entire Transformation Agenda.

Overall Progress on Implementation

Implementation of GTP II Deliverables has continued smoothly from GTP I given that 12 programs were carried over directly from this previous period. Within these program areas, 20 Deliverables and 55 Sub-deliverables were operationalized in 2008. Furthermore, another six Deliverables and 19 Sub-deliverables that
are new in GTP II were operationalized this year. In total, this meant that 26 Deliverables and 74 Sub-deliverables were initiated in 2008. Beyond these, the Climate Change Adaptation & Mitigation and the Gender programs were mainstreamed across all program areas. The operationalization of these Deliverables and Sub-deliverables is at varying stages of progress depending on the availability of financial resources, implementation capacity, and full-scale ownership of responsible partners.

The performance of Deliverables, Sub-deliverables, tasks, and milestones is regularly assessed using a dedicated online tracking system. Data on progress and challenges from the online system are used regularly to assess the status of each Deliverable and Sub-deliverable to report to the Prime Minister and the Transformation Council.

Overall progress on the first year implementation of Transformation Agenda Deliverables indicates that 43% of the Sub-deliverables which started implementation during the year are on track, 41% are slightly delayed, and 16% are significantly delayed from their respective annual targets.

Major delays in implementation are observed particularly in the Crop Protection & Health, Fertilizer Production & Distribution, and Evidence-Based Planning & MLE programs.
Summary of Implementation Progress for Production & Productivity Pillar

The Production & Productivity pillar constitutes 11 program areas targeting systemic bottlenecks in the crop and livestock subsectors. Detailed planning of the Transformation Agenda has been completed for all 11 programs with 21 Deliverables and 83 Sub-deliverables to be implemented during the GTP II period. Six programs areas continued from GTP I, for which the planning process was completed relatively quickly and implementation started in the reporting period. These are (1) Seed Supply & Distribution, (2) Fertilizer Production & Distribution, (3) Crop Protection & Health, (4) Demand-Driven Research, (5) Market-Oriented Extension, and (6) Mechanization. Four program areas focusing on (7) Livestock Genetic Improvement, (8) Livestock Feed & Feeding, (9) Livestock Health, and (10) Livestock Markets are completing the detailed planning process with the newly set up MoLF. Moreover, (11) Rural Financial Services has also completed detailed planning during the year and started implementation during the first quarter of 2008 EC.

In this pillar, varying levels of progress have been made in the implementation of Sub-deliverables in 2008 EC. Since livestock is a new area to the Transformation Agenda, 2008 was a year of planning and alignment; as such, none of the four Livestock programs and their respective eight Deliverables and 32 Sub-deliverables have been operationalized. Good progress is now underway to initiate implementation in the livestock sector aggressively in 2009 EC.

Summary of Implementation Progress for Environmentally Sustainable & Inclusive Growth Pillar

The Transformation Agenda for Environmentally Sustainable & Inclusive Growth includes nine program areas, of which five have completed detailed planning. Given their crosscutting nature, five of the programs in this pillar have been mainstreamed into other program areas. The remaining four: Irrigation & Drainage, Watershed & Agro-forestry Development, Land Use Planning & Administration, and Soil Health & Fertility, will be implemented similarly to other programs in the Transformation Agenda and have a total of eight Deliverables and 32 Sub-deliverables between them.

Of the nine program areas, four became operational in 2008. Irrigation & Drainage and Soil Health & Fertility have four Deliverables and 15 operational Sub-deliverables in total. The Gender and Climate Change Adaptation & Mitigation program areas were mainstreamed across all Transformation Agenda Deliverables during the reporting period. Performance of the Transformation Agenda Deliverables under this pillar indicates that 67% of the Sub-deliverables that were operationalized in 2008 EC are on track while 26% are significantly delayed. The remaining programs are new to the Transformation Agenda and much of the year was spent in undertaking the diagnostics necessary to define transformational Deliverables. Currently, consultations are underway for broad stakeholder alignment around key issues and preparations are being made for implementation.

A lack of expertise in the biotechnology area affected the operationalization of important Sub-deliverables in Demand-Driven Research, while inadequate budget for implementation of some Sub-deliverables has influenced the full implementation of some Deliverables, (strengthening the rust early warning system in Crop Protection & Health, for example). The MoANR and other partners have committed to identifying funds from various sources such as the second Agriculture Growth Program (AGP II) to address these funding shortages.
Summary of Implementation Progress for Agri-business & Markets Pillar

The Agri-business & Markets Pillar constitutes six program areas, for which a total of 12 Deliverables and 44 Sub-deliverables have been identified during the 2008 GTP II planning process. In 2008, two of the program areas: 1) Cooperatives and 2) Commercial & Contract Farming started operation, including projects that the ATA was asked to lead. Performance of the 14 operational Sub-deliverables under these two programs indicates that 64% are on track while 36% are slightly delayed. None of these Sub-deliverables have been significantly delayed.

Focusing on markets and market linkages is a new emphasis within GTP II, and as such, much of the reporting period was spent in understanding the needs, challenges, and opportunities to shift the focus of the Transformation Agenda toward a market orientation. This included developing the new program areas under this pillar as well as incorporating a market orientation into program areas in other pillars.

The goals in developing these program areas and their corresponding Deliverables and Sub-deliverables are to improve the efficiency of agricultural markets, reduce transaction costs, and improve market information transparency. Sub-deliverables have been designed to increase investment in commercial farming in a way that engages and benefits smallholder farmers and can contribute to increasing both raw and processed exports.

As new areas to the Transformation Agenda, detailed planning for the remaining four program areas: 1) Market Infrastructure, 2) Market Services, 3) Domestic & Export Markets, and 4) Agro-Processing & Value Addition was undertaken during 2008. Several of these program areas are awaiting final sign-off from policymakers before they can become operational in 2009.

Summary of Implementation Progress for Enhancing Implementation Capacity Pillar

The Enhancing Implementation Capacity pillar was developed largely from lessons drawn from the GTP I period, which emphasized that building the capacity of key institutions at all levels of the value chain is critical to successfully planning, monitoring, and executing the Transformation Agenda. This includes strengthening the institutional linkages between key federal and regional organizations as well as ensuring that the appropriate tools and data are available for decision-making.

As a new area of focus within GTP II, this pillar contains a number of programs for which Deliverables and Sub-Deliverables were under development during much of 2008. With the exception of Evidence-Based Planning & MLE, which has six of ten Sub-deliverables (corresponding to two Deliverables) under implementation, the programs in this pillar have only just begun implementation or are expected to begin interventions in 2009 EC. The Organizational & Human Resource Capacity program, which has two Deliverables and nine Sub-deliverables, began operationalization of four Sub-deliverables, one of which is on track, one of which is slightly delayed, and the remaining two of which are significantly delayed.

The ICT for Agricultural Services program has two Deliverables and four Sub-deliverables, though only one was operational during the reporting period. This Sub-deliverable, the running of an IVR / SMS hotline for smallholder farmers and DAs, had been a project during GTP I and was able to carry over into this reporting year.

As new areas to the Transformation Agenda, detailed planning for the remaining four program areas: 1) Market Infrastructure, 2) Market Services, 3) Domestic & Export Markets, and 4) Agro-Processing & Value Addition was undertaken during 2008. Several of these program areas are awaiting final sign-off from policymakers before they can become operational in 2009.

Overall, of the operational Sub-deliverables, 36% are on track, 27% are slightly delayed, and 36% are significantly delayed.

The outstanding Sub-deliverables for programs under implementation will begin operationalization in the next year, as will the plans for Private Sector in Agriculture program, pending final sign-off by senior policymakers.
HIGHLIGHTED DELIVERABLES
Improved seeds yield crops that are high-producing and resistant to pests and disease, thereby increasing crop production. The availability of quality seed in sufficient amounts, however, is currently a challenge for smallholder farmers in most parts of Ethiopia. To address this, the ATA and partner organizations started the cooperative-based seed production (CBSP) project to fill specific gaps in seed supply through localized production and distribution, so that farmers can meet their seed production and marketing needs across diverse agro-ecologies. In particular, the project targets production of self-pollinating varieties of seeds as yet unserved by the formal seed sector.

Ultimately, the CBSP project aims to transform Ethiopia’s intermediate seed sector to significantly increase the quality and volume of improved seeds produced and marketed through unions, resulting in higher yields and incomes for farmers. This requires a strong focus on both institutional and individual capacity building for existing seed cooperatives and farmers.

Though there are more than 285 seed-producing cooperatives operating at different scales and efficiencies in Ethiopia’s four main regions, 95% of these do not meet the regulatory requirements to become accredited institutions. CBSP addresses the weak institutional capacity of cooperatives to develop and manage robust business plans by modeling seed unions that are inclusive, environmentally conscious, and financially sustainable, with capable leadership and improved internal quality control capacity. In its work with cooperatives, the project trains smallholder farmers on modern seed production and post-harvest handling. It encourages seed unions to adopt the Direct Seed Marketing (DSM) modality, which facilitates a streamlined seed distribution system.

Much of the work draws from the experience of Edget Cooperative Union, which until recently was the only seed-specific union in the country and has been one of the most successful. Edget has modeled the benefits of forming a strong seed-specific union for better leadership, management, and coordination of community-based seed producers. The Union provides nearly one-quarter of the seed supplied in SNNP, which it has achieved by enhancing its physical capacity, internal quality control, leadership, and governance.

Seven new seed unions have been set up in three regions (three in SNNP and two each in Amhara and Tigray) since launching the CBSP project during the first year of GTP II. One more seed union in Amhara is slotted for capacity building interventions in the last quarter of 2016. Furthermore, three existing multipurpose unions in Oromia were restructured to enable them to incorporate seed production businesses. Finally, sub-grant agreements between the ATA and local partners have been signed to facilitate the physical capacitation of these 11 unions.

Physical capacity building, in which all components of the seed value chain (production, processing, storing, and marketing) were bolstered, has also been a strong area of performance for the CBSP initiative. Fifteen standard seed storage facilities, two diffused light stores, one office, and six seed cleaning shades have been completed since roll-out began. Seven tractors,
14 seed cleaning machines, 14 packing machines, 12 ground balances, and six water pumps have also been procured.

The storage, processing, and production facilities of 32 primary cooperatives and one seed union have been improved through this initiative. Moreover, 147 primary seed producing cooperatives were transformed into seed unions. This is expected to bring about structural changes in cooperative-based seed production throughout the GTP II period.

Capacity building of soft skills is also a priority of the project; accordingly, a training of trainers (ToT) was given to nine agronomists and seed experts in SNNP, following which 1,799 seed producing farmers (252 female) were trained on modern seed production and post-harvest handling techniques. Likewise, 250 farmers in Tigray were trained on the same techniques. Similar trainings will be organized in Oromia and Amhara in the next planting season.

Limitations in seed varieties remain a challenge for CBSPs; hence, 14 varieties of seed were popularized across the four regions through 12 farmers’ field days. Another success of the project has been that targeted seed unions have secured 70% of their basic seed demand for major varieties of wheat and tef in all the regions. Seven primary cooperatives have been engaged in basic seed production for the first time in Tigray and Amhara. As a result, these CBSPs are becoming self-sufficient in meeting their own basic seed demand – a concept introduced by the CBSP project – and are now able to cover much of their own basic seed demand, whereas previously they were covering none.

Building on the successes and learnings from the inception phase of the project, the next phase is expected to expand support across a wide range of policy, system, and capacity-focused interventions.

The GTP II plan recognizes CBSPs as key players, and seed as the critical input, in Ethiopia’s agricultural development. As such, the GTP II has set objectives to boost seed production and marketing; build competitive community institutions; scale up the roll-out of the intermediate seed sector while decentralizing roles dominated by the public seed sector; and influence national and regional governments to strike a balance between public sector and CBSP investments.
The Input Voucher System (IVS) was formulated in response to the difficulties that smallholder farmers face in accessing credit for agricultural inputs such as fertilizer, improved seeds, and labor-saving tools, all of which are essential to increasing production and productivity in a sustainable manner. The system engages local microfinance institutions (MFIs) or Rural Saving and Credit Cooperatives (RuSACCos) to qualify farmers for loans and issue cash or credit vouchers that can be used to redeem inputs at nearby cooperative stores. By doing so, it minimizes the risk that farmers will be prevented from using inputs because of their high initial costs. While other factors certainly play a role in influencing the adoption of new inputs, facilitating credit access is a proven means to encourage farmers to experiment with and use improved technologies.

Ethiopia has not had formal credit facilities for agricultural inputs since regional governments discontinued a previously existing lending scheme. This scheme had been established with the Commercial Bank of Ethiopia (CBE), who provided loans to finance the import of inputs. These were then distributed to cooperatives for onward sale to farmers, either on credit or for cash. Regional governments would offer a 100% credit guarantee, causing them to bear the burden of repaying loans to CBE whenever farmers defaulted. The accumulation of sizeable unpaid loans to CBE strained the budgets of regional governments, leading them to discontinue credit facilities and make input sales possible on a cash-only basis. Among the many reasons for these defaults was the inability of multipurpose cooperatives to systematically handle major financial transactions, including the collection of input loan repayments.

The IVS is part of the overall Rural Financial Services (RFS) program that aims to address these and other limitations of financial institutions in meeting the needs of rural communities. Initiated in 2014, the fundamental objectives of the IVS are to increase access to demand-driven rural credit and contribute toward building strong, client-centered rural financial institutions. In distributing vouchers, the IVS has designated MFIs and RuSACCos as the agents for cash and credit sales, and in doing so, minimized the cash risk exposure for participating farmers, cooperatives, and regional governments.

The MFIs play the additional role of collecting loan repayments from farmers, allowing for effective audit and control processes by all institutional participants, and supporting effective financial flows between and among all stakeholders.

The ATA piloted the initiative in 2014 in five woredas of the Amhara region, in collaboration with the Amhara Credit and Saving Institution (ACSI), which opened 55 new branches for this purpose. During the pilot period, 243 million ETB worth of vouchers were issued to 168,000 farmers who either paid cash or accessed the vouchers on credit. Before the end of the 12 month loan period, the 35,000 farmers who had accessed their vouchers on credit (worth over 52 million ETB) had repaid their debts in full. The newly established ACSI branches mobilized more than 35 million ETB in savings from over 24,000 farmers in the pilot woredas within the same time frame. Toward this end, 219 ACSI and primary cooperative staff were trained on IVS implementation. Following these remarkable results, the IVS was rapidly scaled up in Amhara, SNNP, and Tigray.

Since its inception, the project has been promoted widely through a financial awareness campaign using radio in all four regions, as well as trainings given to experts in Amhara (4,200), Tigray (645), and SNNP (1,000) to ensure successful rollout. In the 2016 planting season the IVS was piloted in six woredas in Oromia. To support implementation, a training of trainers (ToTs) was provided to zonal and woreda experts in the four regions that reached 350 people in Amhara, 194 in SNNP, 290 in Tigray, and 105 in Oromia. Additional training on IVS operations was given to over 10,000 agents at kebele level across the four regions.

Earlier in 2016, the IVS was automated and upgraded from paper to electronic format in the form of e-vouchers, in order to save costs, reduce errors, and streamline the process. Piloting of the e-voucher was underway mid-2016 in two woredas in Amhara and three woredas in Tigray.

### Figures for IVS Scale-Up During 2016 Planting Season

<table>
<thead>
<tr>
<th>Region</th>
<th>Participating Farmers</th>
<th>Percent Who Are Female</th>
<th>Total Value of Inputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amhara</td>
<td>2.1 million</td>
<td>12%</td>
<td>4.08 billion ETB</td>
</tr>
<tr>
<td>SNNP</td>
<td>283,000</td>
<td>18%</td>
<td>344 million ETB</td>
</tr>
<tr>
<td>Tigray</td>
<td>336,000</td>
<td>25%</td>
<td>343 million ETB</td>
</tr>
<tr>
<td>Oromia</td>
<td>56,000</td>
<td>25%</td>
<td>172 million ETB</td>
</tr>
</tbody>
</table>
Transaction recording will begin before the end of the calendar year in two woredas in SNNP. A combined total of 150 officials, and 450 MFI and primary cooperative agents were trained in the three regions; 170 mobile devices and 85,000 NFC tags were also distributed.

In its two years of operation, the voucher system has streamlined the process of input purchases, improved access to credit, and encouraged savings in rural communities. Farmers have begun planning their input purchases and related expenses in advance of planting seasons. Since farmers are given 12 months to repay loans given through the IVS, they have the flexibility to store and sell grain when prices are attractive, rather than being forced to sell at harvest time.

On the other side of the equation, the system has enabled financial institutions to facilitate the collection of credit and cash sales, easing the burden on the budgets of regional governments. In Amhara alone – where the IVS has been rolled out across all woredas – 1,200 ACSI satellite offices have mobilized close to 800 million ETB in savings. Furthermore, the system reports reliable information regarding the use of inputs by smallholder farmers in each woreda, assisting officials at all levels to make better informed decisions.
Because much of Ethiopian agriculture remains rain-fed and vulnerable to climate variability, enhancing climate information use in agriculture is among the top priority actions identified in Ethiopia’s Climate-Resilient Green Economy (CRGE) strategy. In support of the goals identified in this strategy, the Agro-Met project was designed by the ATA to fill the present gaps in integrating localized weather and climate information into smallholders’ agronomic practices. Developing climate-resilient agriculture in Ethiopia will help to strengthen food security and improve productivity in a sustainable manner.

The Agro-Met project is working to put in place a system that interprets the seasonal and short-term climate forecasts provided by the National Meteorology Agency (NMA) in the context of smallholders’ needs and translates them into a format that supports agronomic decision-making. Activities underway within this initiative include the capacity building of stakeholders engaged in generating, communicating, and utilizing agro-meteorological information and the procurement and installation of 50 Automatic Weather Stations (AWSs) in Farmers Training Centers (FTC). The installment of these AWSs (that allow meteorological data to be recorded in remote locations without manual input) will speed up the reporting and communication system so that locally-specific forecasts and early warning information reaches local users in a more timely way. Moreover, capacity building efforts will enhance the quality of extension services that provide climate advisory services to smallholders.

Preparations for installation of the 50 AWSs have been completed, including identifying woredas and FTCs that will serve as host sites; providing factory-level training for six technicians; and delivering onsite training to NMA regional branch technicians. All AWSs have been procured and delivered to the NMA for installation. At the time of reporting, the first AWS had been installed in Tulu Teje FTC in the South West Shoa zone of Oromia region.

At the same time, capacity building for extension service providers has taken place in the form of a series of trainings and familiarization workshops for regional, zonal, and woreda-level extension experts on the importance of agro-met advisory use. Furthermore, a study to assess the need for additional human resource
capacity building for agro-meteorological information generation and use was completed and validated. Planning is now underway for capacity building initiatives to be implemented beginning in 2009 EC.

Specifications are being developed for the design and testing of an automated agro-met information, advisory communication, and feedback system to reach smallholder farmers. Additionally, a national Agro-Met Advisory Technical Taskforce composed of the MoANR, the Ethiopian Institute for Agricultural Research (EIAR), the NMA, and the ATA has been established. It has since been actively engaged in supplying periodic agro-meteorological advisories based on meteorological forecasts to the Regional Bureaus of Agriculture and Regional Institutes of Agricultural Research (RARIs).

The project has been very successful in supporting the agriculture sector in the face of last year’s El Niño phenomenon. The initiative has helped spread awareness on the importance of agro-met advisory services and strengthened the link between the NMA and other agricultural actors. This awareness in turn has created a sense of ownership among regional partners, as demonstrated by their move to establish regional agro-met taskforces and their proactive involvement in selecting sites for AWS installation.

Over the coming year, the Agro-Met project will finalize implementation of activities currently in progress and build on its achievements in a number of ways. This will entail:

- Delivery of a user-tailored, location-specific agro-met advisory to smallholder farmers based on infrastructure installed in the 50 target woredas;
- Building human resource capacity for agro-met advisory development, communication, and use by smallholders;
- Refining agro-met advisory services to be more specific to major crops and agro-ecological conditions; and
- Designing an effective agro-met information generation, communication, and feedback system.

Additionally, the ATA will explore the expansion of agro-met initiatives to moisture-stressed and pastoralist areas where the occurrence of extreme climatic events tends to be more frequent.
The variability of rainfall in Ethiopia and the dependence of agriculture on rains hampers the production and productivity of millions of smallholder farmers and undermines other development gains. Irrigation offers a viable alternative to Ethiopia’s erratic rainfall patterns by stabilizing production, improving quality of produce, enabling farmers to produce multiple times annually, and allowing diversification into high-value crops. Accordingly, the ATA, with Radar Technologies International (RTI) and Addis Ababa University (AAU) as sub-contractors, and with financing from the AGP, launched an initiative in 2013 to identify water resources nationwide with potential for irrigation.

Shallow ground water (SGW) in particular was found to be a good option for irrigation because investments in this area are relatively simple: drilling up to 30 meters is sufficient to tap into the water sources, and simple manual or engine pumps can be used to lift the water. Conservative estimates show that SGW resources distributed throughout Ethiopia have the potential to irrigate 1.16 million hectares of land at the household level. Despite the immense potential of SGW resources, specific information on their geographic availability is limited, as is the capacity to develop them as irrigation sources.

Hence, partners in the SGW project began by mapping over 32,400 square kilometers in 89 woredas of the Oromia and SNNP regions using WATEX radar technology. Although the accuracy levels were 53% and the effectiveness of the technology is uncertain in areas with high soil moisture, the initial mapping yielded critical preliminary information without which detailed and downscaled SGW mapping could not be conducted. The WATEX technology identified surface and sub-surface moisture as a starting point for more accurate mapping; highlighted irrigable land with a slope of less than 4% (since a steeper slope would require more sophisticated irrigation methods); provided soil moisture and geomorphological analysis; and allowed the SGW potential that has been mapped to be developed for household irrigation.
Building on these findings, in 2016 the project has focused on upgrading WATEX outputs and testing alternative technologies to improve the original mapping results. With support from the AAU School of Earth Sciences, WATEX results were calibrated with observed data analysis to yield results that mapped SGW to 85% accuracy. These updated results were used to develop SGW atlases for the 40 woredas that had been mapped fully. The atlases were published and officially handed over to regions and key federal stakeholders. The final results of SGW mapping in 89 woredas indicate the presence of nearly three billion cubic meters of water at a depth of less than 30 meters. This could allow approximately 100,000 hectares of land to be irrigated, benefiting 376,000 households. In 90% of the pilot area, the water quality qualifies for irrigation.

Additionally, the search for reliable and cost effective methodology for SGW mapping settled on AQUATEST technology with an accuracy rate of 80.6%. Financed by the Czech Development Agency, the technology was tested in 47 woredas in Oromia and SNNP, over 20,000 square kilometers. According to the final report of this testing, over 676 million cubic meters of water is available at a depth of less than 30 meters, enough water to irrigate 21,422 hectares of land and benefit 85,689 households.

Two innovative ground water management and decision support tools have been developed to complement the mapping exercise and enhance the capacity of participating stakeholders. The first determines specifications for hand-dug wells, including the thickness of the water column required to irrigate a specific area of land and appropriate pump and well designs needed to regulate water use; the second helps to determine spacing between water wells so as to avoid depletion of ground water resources.

Related apparatus introduced for the project includes Groundwater Exploration and Navigation (GENS) equipment, which has been provided to the Oromia Irrigation Development Authority and the SNNP Irrigation Construction and Scheme Administration Agency to continue exploring ground water sources. Lenovo Yoga Tablets (version two) that provide similar functions but use an external (rather than internal) GPS system shall be handed over to regions when the final AQUATEST maps are produced.

Based on information from the SGW mapping, training has been given to irrigation experts across 70 woredas on household irrigation development and management. Well-spacing has been defined (determined by the availability of water and an estimation of annual recharge rates) and wells have been drilled in 13 woredas in partnership with International Development Enterprises (iDE). A well-drilling group has been established in each woreda as a licensed business to provide ongoing services to well-users. To date, 91 shallow wells were drilled using the atlas; 78 of these are now productive, indicating an accuracy rate of nearly 85.7%.

Going forward, the SGW initiative will refine the AQUATEST report with AAU to include SGW development and management tools like drilling techniques and matching pumping rates with recharge tools. Atlases will be published for the woredas that have been mapped in full, and woreda, zonal, and regional experts will be trained on the use of the atlases as well as the Lenovo Yoga Tablets. Given the positive results obtained with the AQUATEST technology, a strategy for scale-up will be developed for SGW mapping at the national level with additional elements related to well-drilling and introduction of energy efficient, improved technologies for lifting and distributing water.
The cooperative storage project aims to provide access to modern, reliable agricultural storage infrastructure to smallholder farmers in areas producing priority grains (maize, wheat, and tef). Expanding the availability of high-quality agricultural storage is critical for the commercialization of smallholder agriculture, food security, and price stabilization, all of which feed into broader transformation. Working through cooperatives to enhance storage and aggregation capacities builds on the inherent strengths of Ethiopia’s cooperative system (prevalence and reach, ownership by farmers, and social and commercial objectives) to transform them into successful marketers of smallholders’ output.

The project contributes to the agricultural objectives of GTP II by directly supporting crop initiatives to enhance the market components of the value chain. For instance, only a small percentage of grain produced is currently marketed; just 12.7% of maize grown by smallholders is marketed and only 10% of marketed maize is sold through cooperatives. Addressing the obstacles in storage capacity can significantly grow the amount of produce marketed through cooperatives.

With financial support from the AGP, and working closely with the Federal Cooperative Agency (FCA) and Regional Cooperative Promotion Agencies (RCPAs), the ATA has designed a nationwide program to rapidly expand cooperative storage facilities. The lack of such facilities is a key constraint preventing cooperatives from effectively catalyzing and supporting output marketing.

Although the GTP II’s Agricultural Cooperative Sector Development Strategy makes clear that cooperatives are the preferred vehicle for smallholder commercialization, they retain a predominant focus on livelihood support with limited engagement in output marketing and other commercial activities. Overcoming this requires a two-part approach that addresses both the physical infrastructure and soft skill requirements.
for cooperatives to be more commercially oriented. It entails making improvements to storage facilities and equipment, and providing management training to enable cooperatives to more efficiently aggregate produce and manage storage facilities. This expansion complements other national storage-related efforts, such as that of the Strategic Grain Reserve, as well as private sector focused initiatives.

The pilot phase of the project, presently underway, targets improving the storage capacity of four farmers’ cooperative unions (FCUs) and 40 primary cooperatives (PCs) through the construction of prefabricated warehouses, each with a capacity of 3,000 metric tons and 500 metric tons respectively. Site selection was based on five criteria:

- A need to service at least one AGP or ACC woreda;
- The ability of unions to pay 30% and PCs 10% of the total cost of the project;
- A focus on tef, maize, and wheat output marketing;
- Access to sizeable demand sinks to supply target crops; and
- The prospect of improving managerial capacity.

Warehouse foundation work for the sites of 37 PCs and four unions has been finished, with a remaining three sites to be completed by mid-2009 EC. Materials for superstructure work have been procured from China and distributed to 30 sites; 28 of these have already completed superstructure erection.

Management training for the new facilities was carried out to complement the physical developments at all facilities, in which staff from participating FCUs and PCs were trained along with woreda, zonal, regional, and federal experts.

It is expected that all construction work will be finalized before the end of 2016, including superstructure and finishing work, at which point ownership and management of the facilities will be handed over to the primary cooperatives and unions. The eventual goal of the project is for the storage facilities to be run as independent, profit making businesses by the FCUs and PCs that helped build them.
PROGRAM LEVEL PROGRESS
Increased productivity in the agriculture sector has contributed significantly to Ethiopia’s outstanding economic growth over the past decade. Overall cereal production (tef, wheat, maize, sorghum and barley) showed remarkable increases over the last six years, for example, with growth rates of 63% in production and 41% in productivity. Nevertheless, because of its subsistence-based orientation, many of the gains in the agriculture sector are not yet translating into market development and overall transformation. Increases in production of crops or livestock, for example, do not necessarily lead to proportional increases in market surplus, as the majority of outputs continue to be consumed by the producing farmers and pastoralists. Similarly, post-harvest losses remain troublingly high, as do livestock mortality rates and output losses.

The programs that focus on production and productivity in the Transformation Agenda take a comprehensive approach to addressing the needs of smallholder farmers and pastoralists, focusing not only on facilitating access to improved inputs and practices to increase overall productivity, but also on reducing losses and building stronger market linkages for surplus output. The overall goal of the programs in this pillar is to contribute to meeting GTP II targets for increased production and productivity, which are ambitious but achievable. GTP II targets aim to increase total cereal productivity and production by 47% and 51%, respectively; increase pulse crop productivity and production by 34% and 47%, respectively; and increase oil crop productivity and production by 41% and 53%, respectively. In livestock, national cow milk production is expected to grow by an impressive 93%, while red meat production is expected to increase by 52%.
To reach these targets, a combination of systemic bottlenecks needs to be addressed: low rates of utilization of crop-productivity enhancing inputs by smallholder farmers; rudimentary levels of farm mechanization; significant post-harvest losses of both crop and livestock products; limited access to finance for millions in rural communities; and limited market orientation and overall capacity of the research and extension services.

Effectively removing these bottlenecks necessitates implementing a series of interrelated interventions. Among these are increasing the supply of improved seed and fertilizer available to farmers and promoting their use; introducing mechanization technologies in an affordable manner; ensuring that nutritious livestock feed is adequately supplied to farmers and pastoralists; expanding the reach of quality animal health services to all areas; ensuring that the public research and extension services serve the needs of the growing agriculture sector; and improving the accessibility of financial services to rural communities.

There are eleven interrelated programs included in this pillar of the GTP II Transformation Agenda:
1. Seed Supply & Distribution
2. Fertilizer Production & Distribution
3. Crop Protection & Health
4. Livestock Genetic Improvement
5. Livestock Feed & Feeding
6. Livestock Health
7. Livestock Markets
8. Demand-Driven Research
9. Market-Oriented Extension
10. Mechanization
11. Rural Financial Services (RFS)

Except for the Rural Financial Services (RFS) and the four Livestock-related programs, all the others are carried over from GTP I. RFS had been implemented as a pilot project in GTP I and scaled up to a program in GTP II, for which Deliverables have been developed but implementation has not yet begun. Other areas, such as the four Livestock programs, are in the process of developing Deliverables and awaiting endorsement by the newly formed MoLF.

Overall performance in this pillar during 2008 indicates that of the 35 Sub-deliverables that were operational, 26% were on track while 50% were slightly delayed and 24% were significantly delayed.

<table>
<thead>
<tr>
<th>Program Area</th>
<th>No of Deliverables</th>
<th>No of Sub-deliverables</th>
<th>Started in 2008</th>
<th>On-track</th>
<th>Slightly Delayed</th>
<th>Significantly Delayed</th>
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</thead>
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<tr>
<td>Seed Supply &amp; Distribution</td>
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<td>7</td>
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<td>Fertilizer Production &amp; Distribution</td>
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<td>2</td>
<td>1</td>
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<td>0</td>
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<tr>
<td>Crop Protection &amp; Health</td>
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<td>8</td>
<td>5</td>
<td>0</td>
<td>2</td>
<td>3</td>
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<tr>
<td>Demand-Driven Research</td>
<td>2</td>
<td>8</td>
<td>8</td>
<td>1</td>
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<td>3</td>
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<tr>
<td>Market-Oriented Extension</td>
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<td>9</td>
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<td>Mechanization</td>
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<td>2</td>
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<td>6</td>
<td>3</td>
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<tr>
<td>Total</td>
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<td>51</td>
<td>34</td>
<td>9</td>
<td>17</td>
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<tr>
<td>Percentage of Total</td>
<td>67%</td>
<td>26%</td>
<td>50%</td>
<td>24%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Livestock Genetic Improvement 2 7 0 New Programs
Livestock Health 2 11 0 New Programs
Livestock Feed & Feeding 2 7 0 New Programs
Livestock Markets 2 7 0 New Programs
Why is transformation needed in this program area?

The pace of progress in crop production largely depends upon the pace with which high-quality seeds and planting materials are multiplied and accessed by farmers. The variety development and maintenance of foundation seeds, multiplication of improved or certified seeds, and an efficient distribution network are all important elements of a healthy and well-functioning seed sector. This program aims to ensure that sufficient volume of seed is produced while creating a demand-based and vibrant market with a multi-channel seed distribution approach. The program also aims to strengthen structures and mechanisms to enforce seed quality control and assurance.

The current average annual national seed supply of improved varieties for most food crops covers less than 10% of the total agricultural land area compared to 25% in many other African nations. Of the 10% of land, 87% is covered by seed that comes from public producers, 8% from multinational companies and 5% from local private companies. Supply of improved seed from public seed enterprises meets about 60% of government targets while private seed production accounts for less than 15% of supply, compared to 40% in India and 20% in Tanzania.

Strong seed regulatory and certifying institutions are measured by their ability to make rational decisions, managerial capacity, and resource autonomy and harmonization with regional and international institutions. The country’s seed regulatory system is currently at a nascent stage and constrained by multiple bottlenecks including inadequate logistics, very limited infrastructure, and insufficient human resource capacity. Strengthening the capacity to run reliable tests and institutionalizing impartial variety release and protection systems for both public and private research are focus areas of the transformation agenda.

Objectives of the program

The primary approach to resolve seed system bottlenecks in GTP II involves attracting investment and developing a vibrant and competitive seed sector, as well as strengthening the regulatory capacity and the structural and legal frameworks to meet international standards.

Aspiring to overhaul the current state of the seed sector, the GTP II envisages expanding competitiveness in the seed sector; the target is for high-quality improved seed supply to reach 3.5 million quintals by 2020 – a 300% increase from the current level of 1.2 million quintals.

To reach its objectives, this program focuses on two specific Deliverables. The first Deliverable, “Develop a vibrant and competitive seed sector by strengthening the enabling environment and incentivizing investments across the entire seed supply chain,” aims to bring change in the policy and institution spheres. It includes five Sub-deliverables and 25 activities. The second deliverable, “Strengthen federal / regional seed regulatory capacity, finalize structural reforms and legal frameworks to meet international standards,” aims to strengthen the regulatory capacity at the federal and regional levels. It includes four Sub-deliverables and 20 activities.
Overall performance summary

As highlighted above, the program has two Deliverables and nine Sub-deliverables, of which seven Sub-deliverables were operationalized in the first year of GTP II. The remaining two will begin in 2009. Four of the seven Sub-deliverables already being implemented are on track, while the remaining three have been slightly delayed.

**Deliverable 1.1** Develop a vibrant and competitive seed sector by strengthening the enabling environment and incentivizing investments across the entire seed supply chain that enhance climate change adaptation

- **Sub-deliverable 1.1.1** Create enabling environment for the operation of Plant Breeder Right (PBR) to implement royalty for crop varieties
- **Sub-deliverable 1.1.3** Build capacity and operating model for Cooperative Based Seed Production (CBSPs) including expansion into new product types and contributing to climate change adaptation
- **Sub-deliverable 1.1.4** Build a competitive seed marketing system (e.g. scale up Direct Seed Marketing and other models) across geographies & crops

**Deliverable 1.2** Strengthen federal/regional seed regulatory capacity, finalize structural reforms and legal frameworks to meet international standards and address climate change adaptation

- **Sub-deliverable 1.2.1** Develop and harmonize implementation of seed laws, regulations, directives and guidelines across regions and propose standards including climate change adaptation
- **Sub-deliverable 1.2.2** Enhance service coverage and seed law enforcement of certification agencies across all seed producers, distributors, facilitators and mandated geographies
- **Sub-deliverable 1.2.3** Enhance federal variety release, protection and certification capacity
- **Sub-deliverable 1.2.4** Finalize reform and strengthen seed certification capacity at regional levels.

**Key success areas**

- The Direct Seed Marketing (DSM) project has expanded from 83 to 100 woredas, and improved seeds of more than six crops are in the market.
- 147 primary seed producing cooperatives were organized or restructured into 11 seed unions, 32 of which received physical capacity building.
- Seed regulation #375/2016 concerning fees for seed competency and related services was ratified by the Council of Ministers.
- 52 quality standards were drafted based on international experiences, including for new crops like fruit, vegetables and coffee.
- The National Seed Testing Laboratory became an International Seed Testing Association member to support testing harmonization at national and global levels.
- Quality declared seed certification is underway at 28 and 20 registered seed cooperatives in Amhara and SNNPR, respectively.
- An “emergency backup seed supply” project was designed and implemented in response to the drought that affected many parts of the country. The project benefited 206,168 smallholder farmers in 74 woredas of Amhara, Oromia, SNNP and Tigray regions by providing a total of 25,728 quintals of maize, wheat, and sorghum seed.

**Areas with challenges**

- The delivery of quality seed to farmers was challenged by the lack of standard storage facilities and skilled staff at retail outlets, and limited space at cooperative stores (caused by over-stocking fertilizer and other commodities).
- Many seed producers / agents are concentrated in the same areas and there is weak integration between them.
- DSM has been piloted for three years without any endorsed guidelines, despite draft guidelines having been submitted. Guidelines are needed to properly standardize and promote expansion of DSM.
- The 2015-16 drought has affected the momentum of cooperative-based seed production in all regions.
- Procurement of seed machineries has taken more time than anticipated as the machines are not available in local markets.
- The emergency seeds distributed to targeted drought-affected smallholder farmers were again severely damaged by flooding in some woredas of the Oromia and SNPP regions.
- Delayed regulatory reform in Oromia, inadequate and poorly skilled staffing, lack of sufficient labs and equipment and inadequate decentralization contributed for the low performance of the regulatory institutions at all levels.
Why is transformation needed in this program area?

Agricultural transformation is closely linked with the increased utilization of inputs, particularly improved seeds and chemical fertilizers. Moreover, the recent introduction of new types of fertilizers, such as NPS and micronutrients, has shown great potential in improving overall soil fertility and management, and hence, improving the productivity of crops in many parts of Ethiopia.

The fertilizer value chain in Ethiopia is still constrained by a range of challenges. Chief among these is ineffective demand estimation; lengthy import and distribution processes; low storage infrastructure, mainly at the woreda and kebele levels; and limited availability of blended fertilizers. Demand for improvements is equally low, given the low level of awareness of farmers on the benefits of fertilizers, as demonstrated by their sub-optimal application rates and the limited availability of blended fertilizers. These challenges need to be addressed if the crop production goals of GTP II are to be realized.

Objectives of the program

The Fertilizer Production & Distribution program, which is new to the Transformation Agenda, aims to ensure adoption of quality soil fertility solutions by smallholder farmers, with a particular focus on increased domestic fertilizer production capacity, improved multichannel distribution, and development of institutional capacity for quality assurance and registration, as well as promoting optimal fertilizer marketing. The key objectives of the program are expected to be achieved by focusing on two Deliverables: “Increase local production and availability of custom-made fertilizers” and “Improve international sourcing and distribution”, with four and two Sub-deliverables respectively.

The ATA has been participating in the Fertilizer Manufacturing Steering Committee established by the Ministry of Industry (MoI) and chaired by the State Minister in which various sectors are represented. So far, support is being given to OCP, an international fertilizer manufacturing company, through providing information about the types of fertilizers needed in the country and their volume of demand. The company has presented its first feasibility draft for a fertilizer manufacturing complex to be established in Dire Dawa, which is presently under discussion.

Overall performance summary

Although this program is new, interventions were initiated during the third and fourth quarters of 2015-16 (2008 EC). Activities undertaken focused on linking the fertilizer market to financial institutions in the four main regions through the IVS and agent marketers. Additionally, more than 12 new potential fertilizer blending sites were studied and identified to establish new fertilizer blending plants. The ATA has also conducted a background study on how the fertilizer import and distribution process can be simplified. It has also contacted various companies who have shown willingness to work closely with the Ethiopian government, and it is expected that fertilizer import will commence in the earlier part of 2017.
Why is transformation needed in this program area?

Ethiopian smallholder farmers lose significant amounts of their crop yield by a range of crop pests every year. The loss in volume and quality happens at all stages of the crop production cycle – from field all the way to storage. This is attributed to inadequate knowledge of pest management, insufficient farm management practices, and improper pre- and post-harvest handling of commodities by smallholder farmers.

Production of healthy plants in most parts of the country is constrained by many challenges such as inadequate provision of protection services due to weak institutional capacity. Systemic bottlenecks in this sector include low awareness of the dangers posed by unsafe use of pesticides; weak storage infrastructure for safe handling of pesticides; and weak enforcement of quarantine regulations. This area is also plagued by weak early warning systems for major pests; a lack of national pesticide diagnostics facilities; and weak legislative provisions for pesticide registration and control.

Objectives of the program

The Crop Protection & Health program, which is new to the Transformation Agenda, aims to ensure that smallholder farmers have access to a timely supply of quality agrochemicals and other integrated crop management practices for increased production and productivity of commodities in a way that is sustainable and does not compromise environmental safety.

The key objectives in the program are to be achieved by focusing on two specific Deliverables. The first Deliverable, “Strengthen capacity and mechanisms to predict and detect pests and diseases, provide early warning of outbreaks and ensure appropriate response including organic and inorganic solutions,” aims to develop effective systems for management and control of crop pests. It has five Sub-deliverables and 18 activities.

The second Deliverable, “Enhance effective federal and regional pesticide regulation and management” aims to strengthen regulatory capacity at all levels for the safe management of pesticides. It has three Sub-deliverables and ten activities.

Overall performance summary

Although the program is a new area that was not included in GTP I, some activities for five of the Sub-deliverables started during the third and fourth quarter of 2008 EC. For example, pilot work on control and management of Maize Lethal Necrosis Disease using an integrated pest management approach has been launched. Lessons will be expanded to major maize growing areas affected by the disease. Piloting of an early warning system for wheat rust is also under development, with a launch planned for later in 2009 EC.
Livestock Genetic Improvement

Why is transformation needed in this program area?

Ethiopia’s livestock sector is currently constrained by animals of poor genetic potential. For instance, the current level of daily milk production is about 1.51 liters for indigenous cattle, but eight liters for crossbred cattle. Livestock productivity can be improved by nurturing functional and long-lasting genetic evaluation and delivery systems for livestock keepers. Improving productivity will also require establishing appropriate biotechnological tools and institutional arrangements that can harness the full potential of indigenous and introduced animal genetic resources for domestic and export markets.

Systemic constraints to these potential improvements include limited access to appropriate technologies, weak institutional arrangements, lack of a coherent training and extension support, and gaps in the policy environment. However, Ethiopia is well-placed to address these constraints, given its diverse livestock genetic resource base, the wide range of agro-ecologies in the country, the fast-expanding demand for quality livestock products and services, and the strategic geopolitical location of the country close to major global livestock markets.

Objectives of the program

The objective of this program, which is new to the Transformation Agenda, is to introduce sustainably improved animal genetic resources for enhanced livestock production and productivity that contributes to household food security and economic development. This is achieved through facilitating the development of genotype and breed improvements and enhanced market orientated utilization of indigenous and introduced animal genetic resources. Similarly, the program aims to enhance broad participation of livestock keepers, fisheries, and private sector actors in genetic improvement programs.

The key objectives in this program are expected to be achieved by focusing on two Deliverables. The first, “Establish a national system and institutional arrangement to lead and coordinate livestock and fisheries genetic evaluation and improvement as well as input delivery schemes,” aims to develop coherent genetic and breed improvement guidelines and strategies; mobilize resources to up- and out-scale successfully demonstrated practices; customize proven technologies to candidate production environments; and facilitate the necessary enabling environment for sustaining livestock genetic gains. The second, “Enhancing role of private sector in livestock genetic improvement and input delivery,” aims to strengthen the development of a vibrant, competitive and socially responsible private sector to promote investment, entrepreneurship and private enterprise to drive lasting innovation in livestock genetic improvement and service delivery. The Deliverables include four and three Sub-deliverables each, respectively.

Overall performance summary

In total, the Livestock Genetic Improvement program includes two Deliverables and seven Sub-deliverables. The Transformation Agenda Deliverables for the program will be finalized in the first quarter of 2009 EC at which point implementation can begin.
Livestock Feed & Feeding

Why is transformation needed in this program area?

The Livestock Feed & Feeding program addresses the single most important and most manageable bottleneck that hinders the development of the livestock sector: limited availability of quality, affordable feeds and feeding.

In the GTP II period, national feed production is planned to triple from 73.3 to 223.69 million tons, which requires integrated interventions in different areas of feed production, conservation, and utilization. Poor grazing land productivity and management and low levels of improved or irrigated forage production are major challenges. Alongside these, lack of sufficient and quality forage seeds, or the proper conservation and utilization of various feed sources (crop residues, feeds from watershed, agro-industrial byproducts), hampers the development of the livestock sector. Poor access to sufficient quality drinking water is a related problem that needs deliberate focus. Underdeveloped market linkages and poor capacity of smallholder farmers and extension agents in feed production are related constraints. The program will address these bottlenecks to bring about transformative change in the animal feed subsector, and consequently, in the livestock sector.

Objectives of the program

This new program of the Transformation Agena aims to support sustainable and efficient production and delivery of sufficient, quality, and affordable feed for profitable livestock production by commercial as well as smallholder livestock producers.

To achieve this, the program focuses on two specific Deliverables. The first Deliverable is to “Create an enabling environment for sustainable production and supply of adequate, quality and affordable feeds and fodder, including rationalizing free grazing.” The deliverable will also strengthen the commercialization of livestock feeds. It includes three Sub-deliverables and 13 activities.

The second Deliverable, “Improve feed and water security in pastoral and agro-pastoral areas,” aims to strengthen capacity toward rangeland rehabilitation and management; irrigated forage and fodder banks development; increased feed production; conservation and utilization strategies; and securing water supply for livestock production in pastoral and agro-pastoral areas. It includes four Sub-deliverables and 12 activities.

Overall performance summary

In total, the Livestock Feed & Feeding program includes two Deliverables and seven Sub-deliverables. Activities in two of the Sub-deliverables have been operationalized in the first half of 2008 EC while awaiting the restructuring of the MoLF and its alignment with GTP II. In the meantime, activities in Sub-deliverables related to developing woreda-level feed balance sheets in pilot woredas, reviving certification of commercial forage seed production at federal and regional levels, and publication of eight extension materials in feeds and feeding were undertaken in 2008 EC.
Livestock Health

Why is transformation needed in this program area?

Widely prevalent livestock diseases are major constraints to Ethiopian livestock development. The vulnerability of livestock production and trade to disease epidemics is undermining investment in a potentially valuable economic activity that would increase employment in rural areas, raise rural incomes, and assist in alleviating poverty.

According to the results of the 2013/14 agricultural sample survey in Ethiopia, regional level average loss of animals from known diseases amounted to 13% for cattle, 24% for sheep, 27% for goats and up to 98% for chicken. The study has also shown that high mortality rates for young stock remain a major challenge. Integrated, effective veterinary services are essential not only to reduce losses in production and productivity, but also to safely manage diseases and parasites that affect both animals and humans and hinder the domestic and export trade of livestock and livestock products. Current bottlenecks in the animal health program include the prevalence of major transboundary animal diseases and parasites, emerging and re-emerging zoonotic animal diseases, and food safety. Limited animal health extension and communication systems, capacity gaps in both the public and private sectors, and limited involvement of the private sector in the delivery of private goods and services also limit improvements in this subsector. Additionally, limitations in the adequacy and quality of veterinary inputs and limited veterinary legal frameworks, including lack of clarity in the veterinary chain of command, impede progress.

Objectives of the program

This new program seeks to enable and enhance utilization of animal resources through the creation of modern and strong animal health services that comply with international standards. These objectives will be met by focusing on two Deliverables. The first Deliverable, “Reducing young and adult stock mortality in different production systems,” focuses on reducing the current high mortality rate among young animal stocks in different production systems. It has five Sub-deliverables and 20 activities. The second Deliverable, “Strengthen and support establishment of innovative animal health field services and diagnostic capacity and quality management systems of national and regional veterinary laboratories to enhance disease prevention and control,” aims to strengthen field animal health service delivery systems and veterinary diagnostic and investigation capacity, as well as implementing laboratory quality management systems. It includes six Sub-deliverables and 25 activities.

Overall performance summary

In total, the Livestock Health program includes two Deliverables and 11 Sub-deliverables. In 2008 EC, activities in this program have been initiated with a study on potential chicken clusters in two woredas in each of the four main regions having been completed and validated. The output of the validation workshop was to recommend initiating a pilot project on improved family poultry development in the selected woredas, for which an extension manual has been developed.
Why is transformation needed in this program area?

Transforming the livestock sector to a commercially-oriented system demands a well-developed and integrated livestock marketing system that addresses both input and output marketing. Livestock production is a time-sensitive activity, organized around outputs that are generally perishable, meaning that timely delivery of quality inputs and efficient, timely, and transparent output marketing is needed to provide signals to the farmers that will allow them to make informed decisions on what to produce and at what quality standards, as well as where and when to sell their outputs.

The presence of a well-functioning marketing system will encourage smallholders and pastoralists to be market-oriented, increasing productivity and earnings. An effective livestock marketing system will help curtail the loss of livestock resources due to illegal smuggling to neighboring countries and increase revenues to farmers, pastoralists, and the overall economy.

Efficient livestock marketing will also help to shrink the existing extended market chain, reducing costs and enabling producers to benefit more from their outputs. The growing local and global markets for livestock products demand strict quality standards and supply sustainability, both of which require the development of efficient market services. This would enhance quality-based payment schemes, as well as create investment opportunities for new businesses working along the entire value chain of livestock products.

Establishing aggregation and value addition endeavors driven by the creation of markets, will help reduce loss of outputs and enhance linkages and coordination across the value chain. The development of viable private sector businesses will also enhance the competitiveness of livestock value chains and their effective integration into regional and global markets.

Objectives of the program

The Livestock Markets program objective is to enhance market-oriented livestock production that can increase the income of livestock producers, promote the production of more and diverse quality livestock products for domestic consumption and import substitution, and grow the export of livestock products.

Overall performance summary

This is a newly proposed program area that had not been included in the prioritized Transformation Agenda during GTP I. As such, the development of the Deliverables and Sub-deliverables for this program is still in progress and activities are awaiting full operationalization. This is expected to begin in early 2009 EC, following efforts to complete all required preparatory work, particularly human and financial resource mobilization.
Why is transformation needed in this program area?

Agricultural research has been a major contributor to increasing agricultural productivity and production in Ethiopia. Improved agricultural technologies that address existing productivity challenges and support adaptation to climate change can only be developed through a well-established and functional agricultural research system. Improved technologies and information enhance the development of a competitive and responsive agriculture sector that is less vulnerable to market and climate variabilities. Research also provides the foundation for policy recommendations that can lead to accelerated transformation of the sector.

Despite its important role, the Ethiopian agricultural research system currently does not generate and effectively disseminate to farmers the quantity and quality of technologies required for the sector. The system needs to be more efficient and coordinated and use more modern research tools. Human capacity also needs to be strengthened. Ethiopia has one of the youngest and least-tenured pools of agricultural researchers with about 51% at Bachelors’ degrees and 48% under 31 years of age. For comparison, in South Africa and Brazil, researchers that only hold Bachelors’ degrees account for only 15% and 1% of researchers, respectively.22

In 2014, the share of agricultural research and development spending as a percentage of agricultural GDP in Ethiopia was 0.19%, placing Ethiopia in the 25th percentile in Africa and far below the world average of 2.4%. Brazil, a country with one of the strongest agricultural research systems in the world, spent 1.91% of its agricultural GDP on agricultural research in 2011.22 Ethiopia’s agricultural research faces additional bottlenecks in reaching its potential, including inadequate coordination and governance, insufficient institutional capacity, and limited resources to generate and make use of improved technologies.

Objectives of the program

The Demand-Driven Research program aims to: develop commercially-oriented and demand-driven research systems; enhance partnership among stakeholders for technology development and maintenance as well as multiplication and popularization of starter technologies; build research capacity and linkages among national and international research organizations; and build climate and gender-related research capacity.

The key objectives in this program are expected to be achieved by focusing on two specific Deliverables. The first, “Expand utilization of biotechnology for increased agricultural production and productivity,” aims to strengthen the human capacity and enabling environment of the national research system for biotechnology research. It has three Sub-deliverables. The second deliverable, “Strengthen mechanisms by which research generates and adapts / adopts client-oriented outputs,” aims to strengthen the human and physical capacity of the research system to develop, multiply, and disseminate problem-solving technologies. It has five Sub-deliverables.
Overall performance summary

All eight Sub-deliverables of the two Deliverables in this program have been operationalized in the first year of the GTP II Transformation Agenda. Most of them have faced slight delays, but few faced significant delays.

Deliverable 8.1 Expand utilization of biotechnology for increased agricultural production and productivity

- **Sub-deliverable 8.1.1** Create an enabling environment for agricultural biotechnology research and biosafety (strategy, guidelines, regulatory mechanism and intellectual property right (royalty))
- **Sub-deliverable 8.1.2** Apply biotechnology research for improving productivity of plants and animals and for climate change adaptation and mitigation
- **Sub-deliverable 8.1.3** Strengthen human and institutional capacity for development of non-GMO and GMO biotechnology tools and their promotion

Deliverable 8.2 Strengthen mechanism by which research generates and adapts/adopts client-oriented outputs

- **Sub-deliverable 8.2.1** Develop and implement strategy/policy/guidelines for technology import and export, testing, utilization and intellectual property rights (IPRs)
- **Sub-deliverable 8.2.2** Establish a central database and information management system such as information portals to be accessed by all researchers and research output users
- **Sub-deliverable 8.2.3** Strengthen the national agricultural research system to develop problem solving technologies related to climate smart agriculture and the needs of women farmers.
- **Sub-deliverable 8.2.4** Strengthen public-private partnership (national and international organizations) and linkages to enhance agricultural research outputs
- **Sub-deliverable 8.2.5** Strengthen capacity of the research system for making available large quantities of breeder seed/planting materials/livestock breeds and prototyped mechanization tools/machinery and their popularization

Key success areas

- The ministerial regulation on the establishment of the Ethiopian Agricultural Research Council was released in 2015-16 (2008 EC), thus expected to improve coordination and linkages between members of the research system.
- The foundation for improved biotechnology research has advanced significantly. Among its key achievements, six biotechnology roadmaps were approved by the government, alongside a decision to establish a national biotechnology institute. In addition, a biosafety regulation and four biosafety directives have been prepared and are pending endorsement.
- More than 70 members from four standing committees of the Ethiopian Parliament were given orientation in biotechnology possibilities and biosafety requirements.
- Seven senior retired researchers have been hired to develop research strategies for five priority commodities as well as modules for training junior researchers in federal and regional research centers.
- A GHG emission measurement framework has been developed for the agriculture sector and is ready for implementation.
- One tef variety, called Dagim, was released by the Debre Zeit research center for high- to optimum-moisture areas.

Key challenges

- The absence of a specific unit within the Ministry of Environment, Forest and Climate Change that reviews applications and issues licenses for importing biotechnologies is hindering the research work in this area.
- Delays in the approval of a biosafety regulation and directives are affecting both the import of biotechnology products for research and the establishment of national and institutional biosafety advisory committees.
- Lack of a clear Intellectual Property Right guidelines for biotechnology products have been found to be a constraint to importing and utilizing biotechnology products in the country.
- Power outages at research centers, especially in the Holetta Research Center, are frequent and seriously affect functioning.
- The small number of female graduates in agricultural sciences is another constraint that challenges the human capacity building effort of the research system in terms of increasing the number of female researchers.
- Due to urban expansion, land from trial research stations was retracted and additional land has not been allocated.
Why is transformation needed in this program area?

In Ethiopia, smallholder farmers own the majority of area under cultivation and account for a huge percentage of total agricultural production. Historically, the livelihood of these farmers has been fully dependent on a subsistence farming system, characterized by fragmented land holdings, rain-fed mixed farming practices, utilization of traditional technologies, and low rates of adoption of inputs, resulting in low output production. A market-oriented extension system could transform much of this, but several constraints keep the extension system from adopting a market-oriented approach. Most extension personnel lack the awareness, knowledge and skills for business plan development; agricultural interventions are inadequately location-specific; and market information is limited.

The Market-Oriented Extension program aims to address systemic bottlenecks in the area of agricultural technology dissemination and popularization among smallholder farmers and plays a critical role in the process of technology generation and diffusion. It helps to provide smallholder farmers with market information that will enable them to gain better benefits from their agricultural products. In spite of its paramount importance, the capacity of many African countries to provide market-oriented extension service to their communities in terms of training and/or advisory services is found to be for less than 10% of their total communities. In contrast, Ethiopia is believed to have the largest public extension system in the world, with at least one extension worker per 500 farmers.23

Institutionalizing an effective market-oriented extension service that is climate smart is paramount to respond to the development needs of heterogeneous rural communities. Such a system can ensure sustainable and rapid growth in production and productivity in a commercial-oriented production system.

Objectives of the program

The Market-Oriented Extension program aims to improve the orientation of the extension service toward more market-centered service delivery; strengthen linkages among stakeholders and synergies between different actors, as well as improve extension service delivery mechanisms.

To achieve these objectives, the program has two specific Deliverables. The first Deliverable, “Tailored extension services to different types of situations and communities to make extension more market-oriented and context specific,” aims to address the capacity gap related to knowledge and skills of technical staff on the delivery of market-oriented extension services to communities in varied agro-ecologies. It consists of five Sub-deliverables and 15 activities. The second Deliverable, “Strengthen the mechanisms by which the extension system becomes better coordinated, accountable and financially sustainable,” aims to create strong linkages between the research system and other partners in the sector in order to provide effective and coordinated extension services to end users. It has four Sub-deliverables and 16 activities.
Overall performance summary

In total, the program includes two Deliverables with corresponding nine Sub-deliverables. The first Deliverable has five Sub-deliverables, of which two are slightly delayed, one is significantly delayed, and two are not yet initiated. Similarly, the second Deliverable has four Sub-deliverables, one of which is slightly delayed while the others are not yet operational. Sub-deliverables that are not yet operational will be initiated in early 2009 EC.

<table>
<thead>
<tr>
<th>Deliverable 9.1</th>
<th>Tailored extension services to different types of situations and communities to make extension more market-oriented and context specific</th>
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<tbody>
<tr>
<td>Sub-deliverable 9.1.1</td>
<td>Promote improved technologies in a manner that integrates climate information (agrometeorology) with a focus on specialization and diversification.</td>
</tr>
<tr>
<td>Sub-deliverable 9.1.2</td>
<td>Strengthen the extension system to provide agro-ecology based market oriented, climate resilient and gender sensitive extension services for various segments of farmers, agro-pastoralists and pastoralists including in urban and pre-urban setting</td>
</tr>
<tr>
<td>Sub-deliverable 9.1.3</td>
<td>Build the human, physical and organizational capacity of the extension system at all levels</td>
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Deliverable 9.2: Strengthen the mechanisms by which the extension system becomes better coordinated, accountable and financially sustainable

Sub-deliverable 9.2.1 Strengthen linkages within MoANR and with other partners

Key success areas

- The extension strategy document has been updated based on the feedback given by a wide range of stakeholders with due consideration to clustered approaches at a regional level and alignment with GTP II.
- 50 prioritized FTCs are being upgraded through a unique approach, on a pilot basis, in partnership with three sub-grantees.
- The Agricultural Development Partners Linkage Advisory Council (ADPLAC) operational guideline has been revised and the 10th Anniversary of Federal Level ADPLAC meeting was held from 25 – 27 March 2016. At the meeting, 15 key constraints for agricultural development were identified and discussed, with follow-up actions agreed upon. The issues were communicated to concerned key stakeholders to take action in the coming year.
- ToT was given to different technical staff at the regional level on communication and facilitation skills, ADPLAC guidelines, value chain concepts, adult education, and monitoring and evaluation. The training was undertaken from 28 May to 01 June 2016, for 29 participants (five female and 24 male).

Areas with challenges

- Delay in releasing funds for FTC upgrading from the AGP until the end of 2008 EC has negatively affected the timely accomplishment of Deliverables.
- Delay in the approval and implementation of the DA career path and incentive structure guidelines, which have been prepared and submitted to MoANR, has affected the provision of effective extension services.
Why is transformation needed in this program area?

One of the principal causes of low productivity among smallholder farmers is the lack of farm power or the lack of access to opportunities to increase mechanization. This includes labor-saving tools and equipment as well as animal and mechanized power. Mechanization, in the agricultural context, is the economic application of engineering technology to enhance the effectiveness and productivity of human labor in the process of land preparation, planting, harvesting, on-farm processing, storage, and marketing of products. In the Ethiopian smallholder context, available mechanical power is extremely limited. In the East Africa region for example, Ethiopia has one of the lowest numbers of tractors: whereas Ethiopia has 2.24 tractors per 100 km², Sudan, Eritrea, Somalia and Kenya have 9.61, 7.12, 12.06 and 26.28 respectively.24

Under GTP II, more than 80% of the target for increased food production is expected to come from the increase in productivity of smallholder farmers, necessitating the adoption of new and improved mechanized implements and appropriate machinery to enhance not only labor productivity, but also to improve the efficiency and effectiveness of inputs, including seed and fertilizer.25 Additionally, post-harvest agricultural technologies can lead to reduced post-harvest loss and increase production surplus for marketing and consumption by producing households. The country’s effort to significantly increase its exports will not be fully realized without wider scaling-up of mechanized farming.

Mechanization of the agriculture sector faces many systemic bottlenecks spread across the value chain, from weak research and development of new implements all the way through to lack of after-sales services. The major systemic bottlenecks include the absence of agricultural mechanization institutional set-ups at all levels that guide, regulate, and lead the sector. There is also a lack of standardized technologies or regulatory frameworks, weak agricultural mechanization research and development, and weak private sector involvement. This is compounded by a lack of policy incentives to attract the private sector, lack of financial products and access to loans, lack of technology distribution and maintenance service systems, and low awareness of possible technologies by potential users.

The Transformation Agenda seeks to improve smallholder farmers’ access to mechanized services from its current level of 3% to 54% by the end of the GTP II period.

Objectives of the program

The main objectives of the mechanization program during the GTP II period are to improve the use of agricultural mechanization technologies by farmers at different levels through providing adequate mechanization services, and to reduce post-harvest loss of major crops from 15 – 25% to 5%.

The key objectives of this program are expected to be achieved by focusing on one specific Deliverable, “Develop and roll out a sustainable mechanization supply chain and service provider model to reach different segments of farmers.” Five Sub-deliverables are identified under this Deliverable.
Overall performance summary

All five of this program’s Sub-deliverables have been operational in 2008 EC. Of the planned Sub-deliverables, two (developing agricultural technology standards, and mechanization pilot project) are on track, two are considered slightly delayed, and one is significantly delayed.

Deliverable 10.1 Develop and rollout a sustainable Agricultural mechanization supply chain and service provider model to reach different segments of farmers

- **Sub-deliverable 10.1.1** Develop environmental friendly national agricultural mechanization standards; create a national testing and certification center with environmental safe guards, and user protection regulation in relation to natural resource and energy efficiency

- **Sub-deliverable 10.1.2** Strengthen / create human capacity and infrastructure for research and development to generate and avail targeted environmental friendly and gender appropriate mechanization technologies in requisite types and quality

- **Sub-deliverable 10.1.3** Put in place enablers and incentives to catalyze mechanization technologies production, import, distribution, service provision; and use by different segments of farmers and provide special incentives for those dealing with environmental friendly technologies

- **Sub-deliverable 10.1.4** Facilitate testing and promotion of improved agricultural mechanization technologies and business models in selected geographic clusters in relation to different commodities, type of farmers and functions including women’s labor saving technologies in harvesting and post-harvest functions.

- **Sub-deliverable 10.1.5** Develop sufficiently resourced agricultural mechanization promotion and regulation institution to provide guidance, regulatory framework and promote agricultural mechanization at all levels

Key success areas

- The development of agricultural technology standards for selected agricultural mechanization technologies was one of the activities accomplished successfully during the year. A total of 27 main agricultural mechanization technologies in six operations (land preparation, planting / seeding, crop protection, harvesting, threshing / shelling, and agro- and livestock product processing) have been standardized. The standards are expected to be approved by the national council.

- Testing and demonstration of agricultural mechanization technologies and business models focusing on harvesting and threshing was another success area of the program. Demonstrations on wheat harvesting and threshing, sesame harvesting, and tef threshing were prioritized. To this end, technology demonstrations and business-to-business meetings of technology suppliers and farmers / service providers were conducted in six woredas with a total of 623 potential farmers, six private sector technology suppliers, two research institutions (Melkasa and Asella), and 332 participants from government and non-government institutions at federal and woreda levels.

Areas with challenges

- Lack of a budget source to undertake a study that is intended to develop a sufficiently resourced agricultural mechanization promotion and regulation institution was a challenge.
Why is transformation needed in this program area?
The Rural Financial Services (RFS) program was designed to increase access to financial services to smallholder farmers and other key value chain actors in the agriculture sector, a critical component of commercializing Ethiopia’s agricultural sector. Access to credit is a major determinant of the adoption and sustained use of productivity-enhancing inputs, such as fertilizer, improved seeds, and crop protecting chemicals. Availability of credit allows a farmer to produce the surpluses that will serve as the raw materials for Ethiopia’s emerging agribusiness industry. Access to finance by cooperatives and private traders facilitates aggregation as well as value-addition processing, strengthening linkages to markets for smallholder farmers.

According to a study conducted by the RFS program, access to finance in Ethiopia was estimated to be 27% in 2013, which is lower than Zimbabwe and Kenya with 40% and 42% coverage respectively. In rural areas it is estimated to be as low as 6% and is characterized by limited access to input credit, insufficient incentive to save in formal institutions, and lack of availability of risk mitigation mechanisms.

The RFS program plans to increase access to financial services in rural areas to 30% by the end of the GTP II period, by extending credit services through an Input Voucher System (IVS) in the four regions, building capacity of Rural Saving and Credit Cooperatives (RuSACCOs), and providing index based insurance products.

Objectives of the program
The RFS program objectives are to increase access to demand-driven rural credit, introduce agricultural financial risk management tools, and help build strong client-centered rural financial institutions. The key objectives of the RFS program will be achieved through two Deliverables. The first Deliverable, “Launch strategic interventions that will enhance rural financial services as part of a comprehensive national rural finance strategy”, includes three Sub-deliverables.

The second Deliverable, “Develop, design and launch innovative pilots to address immediate bottlenecks in the rural finance sector,” aims to mobilize savings and make sufficient credit and insurance available to rural communities. It includes three Sub-deliverables.

Overall performance summary
Of the two Deliverables in this program, the first has not been operationalized since it requires approval of the National Financial Inclusion Strategy, which has been submitted to the Council of Ministers for approval. All three Sub-deliverables in the second Deliverable were operational in 2008 with one on track and two slightly delayed.
Key success areas

- For the scale up of the manual IVS in Amhara, SNNP, Tigray and Oromia regions, ToTs were provided to 350, 194, 290, and 105 zonal and woreda experts, respectively. Trainings on IVS operations were also given to 3,500, 4,300, 2,200, and 655 agents at kebele level in the four regions, respectively.

- In the four regions, the following numbers of smallholder farmers (SHFs) used the IVS to purchase inputs in cash and on credit:
  - **Amhara**: two million SHFs purchased 2.6 million quintals of input for 3.5 billion ETB in cash, and 325,000 SHFs (58% female) purchased 654,000 quintals for 556 million ETB on credit.
  - **SNNP**: 87,000 SHFs purchased 99,000 quintals of inputs for 129 million ETB in cash, and 319,000 SHFs purchased 350,000 quintals for 204 million ETB on credit.
  - **Tigray**: 351,000 SHFs (27% female) purchased 306,000 quintals of inputs for 306 million ETB in cash.
  - **Oromia**: 61,000 SHFs purchased 158,000 quintals of inputs for 201 million ETB in cash.

- **1,200 ACSI satellite offices in Amhara mobilized savings close to 948 million ETB from SHFs.**

- The manual IVS was automated into an e-voucher to save costs and streamline the system, and is being piloted in Amhara, Tigray, and SNNP.
  - A total of 150 officials and 450 MFI and PC agents were trained on the e-voucher in the three pilot regions; 170 mobile devices and 110,000 Near Field Communication (NFC) tags were also distributed in these regions.
  - In Amhara, 35,000 transactions using the e-voucher were processed for inputs worth 150 million ETB.
  - In Tigray, 17,000 transactions were processed for inputs worth 25 million ETB.
  - In SNNP transaction recording will soon begin in two woredas.

- **Ten potential woredas have been selected for Vegetation Index Crop Insurance. Kickoff workshops for strategic committees, working groups, and administrators have been conducted at the regional level.**

- Two potential RuSACCO unions (Kalata and Awash) from Oromia and ACI from Amhara were selected as potential delivery channels for the insurance.

- Initial implementation support and field supervision were provided at ten pilot woredas in Oromia and Amhara.

- 30 mobile devices were distributed to five pilot woredas in Oromia and 15 mobile and biometric devices were distributed to ACSI branches in Amhara.

Areas with challenges

- Delays in the development of the National Financial Inclusion Strategy and endorsement by the Council of Ministers has temporarily postponed operationalization of the first Deliverable.

- Although the financial institutions’ collection rate of input loans is high, regional governments have not yet started encouraging input credit.

- Close follow-up during implementation of IVS could not be accomplished as planned as members of the technical working group in the regions have other duties to attend to.

- Scaling up the e-voucher system requires substantial initial investment that must be shared properly to ensure the financial viability of the system. This has proven to be difficult to secure from partners or regional governments.

- Implementation of the Vegetation Index Crop Insurance started late into the planting season because of delays in engaging regional stakeholders and getting their decisions on policy issues such as subsidies.
During the GTP I period, the Agricultural Transformation Agenda emphasized accelerated production and productivity and the growth and development of value chains for selected agricultural commodities with strong success. Sustaining these gains and moving toward more fundamental changes in the sector, however, requires paying attention to issues of inclusion and environmental sustainability.

For Ethiopia to continue to increase production and productivity and shift smallholders from subsistence to commercial farming, the natural resource base must be able to sustain and support growth in agricultural activities. Therefore, farmers must be encouraged to relinquish current extractive farming practices in favor of those that conserve natural resources and increase their resilience and capacity to mitigate climate change. It is also imperative that special consideration is given to marginalized segments of society, such as women, youth, pastoralists, and poor or food-insecure communities.
Promotion of increased productivity and commercialization in agriculture must therefore be carried out together with measures to safeguard and develop natural resources and to assist all actors across agricultural value chains to adapt to and mitigate climate change. To this end, programs within this pillar focus on: reorienting smallholder farmers toward adoption of sustainable practices that conserve land, water, plant and animal resources; shifting from rain-fed to irrigated agriculture based on increased public and, where appropriate, private investments in water resources development; and promoting Climate Smart Agriculture (CSA) that simultaneously enhances adaptation and promotes mitigation measures. Concurrent programs focus on developing tailored solutions to reach marginalized communities through agricultural services that aim to increase their decision-making capacity, help them become more food secure, and increase their earning potential.

There are nine program areas included in this pillar of the GTP II Transformation Agenda:

1. Irrigation & Drainage
2. Watershed & Agro-forestry Development
3. Land Use Planning & Administration
4. Soil Health & Fertility
5. Climate Change Adaptation & Mitigation
6. Gender
7. Nutrition
8. Biodiversity
9. Targeted Livelihood Support

The program areas of Irrigation & Drainage and Soil Health & Fertility have developed Deliverables, Sub-deliverables, targets and milestones for GTP II, and initiated implementation over the past year. Those programs that are new to the Transformation Agenda during GTP II, such as Watershed & Agro-forestry Development and Land Use Planning & Administration, have identified focus areas for GTP II and are poised to begin implementation in early 2009. The Biodiversity program is currently conducting diagnostics to identify bottlenecks and intervention areas. Finally, this pillar contains unique crosscutting program areas whose interventions are actually mainstreamed for implementation into all programs. These are: Climate Change Adaptation & Mitigation and Gender (for which Deliverables have already been developed and implementation is underway); and Nutrition and Targeted Livelihood Support (whose intervention areas are under development).

Overall performance in this pillar during 2008 indicates that, of the 15 Sub-deliverables that were operational, 66.7% were on track while 33.3% were slightly delayed.

<table>
<thead>
<tr>
<th>Program area</th>
<th>No of Deliverables</th>
<th>No of Sub-deliverables</th>
<th>Started in 2008</th>
<th>On-track</th>
<th>Slightly Delayed</th>
<th>Significantly Delayed</th>
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<td>67%</td>
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<tr>
<td>Targeted Livelihood Support</td>
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Sub-deliverables are currently being mainstreamed for implementation into all programs.

Mainstreamed programs: Climate Change Adaptation & Mitigation, Gender, Nutrition, Biodiversity, Targeted Livelihood Support.
Why is transformation needed in this program area?

Water is a critical resource for agricultural production, both for crops and livestock. Irrigation harnesses this resource, increasing its availability for agriculture and reducing farmers’ reliance on rainfall, which is becoming increasingly erratic with climate change. With 12 major river basins, approximately 122 billion cubic meters of runoff, and 11 major lakes encompassing a total area of 750,000 hectares (ha), Ethiopia is rich in water resources, but very little of this has been utilized for irrigation agriculture. Expansion of irrigated agriculture has been continually highlighted in GoE strategy documents as critical for increased agricultural production and productivity. Irrigation also contributes to accelerated commercialization of smallholder agriculture, enhances food security, and supports broader agriculture-led industrialization.

Irrigation development, however, can have a serious impact on the natural resource base and, as such, needs to be undertaken in a sustainable manner — with balanced extraction of water that takes into consideration recharge levels, optimum water application for crops, fodder, perennials, and removal of excess water from the farms (drainage).

During GTP I, irrigated land increased from 885,000 ha to 2.4 million ha. In GTP II, irrigated land is meant to increase to four million hectares. In light of this, and given the potential of the irrigation and drainage subsector to contribute to the transformation of the agriculture sector, the government has committed substantial budgetary allocations to irrigation and drainage initiatives.

The subsector, however, faces certain key systemic bottlenecks that constrain the achievement of this ambitious target. One such bottleneck is inadequate capacity for resource mobilization vis-à-vis needs. Actors also lack information on water resource availability, which is compounded by the lack of a broader national Management Information System (MIS) to support decision making. At the same time, weak institutions for effective water resource and rights management as well as inadequate guidelines for the study, design, construction, and contract management of irrigation and drainage facilities both limit the sustainable development of water resources. Weak supply chains and supporting services for irrigation or drainage development, particularly in terms of well-defined and locally-tested environmentally- and women-friendly technologies, are further challenges. Addressing the above requires dedicated focus; coordinating interventions within and beyond the irrigation subsector; developing real-time solutions for implementation problems as they arise; and enhancing the monitoring and reporting system.

Objectives of the program

The objectives of the Irrigation & Drainage program include creating access to irrigation water, promoting sustainable and gender-responsive irrigation development, and increasing water use efficiency to meet GTP II targets for increasing Ethiopia’s irrigable land.
The key objectives in this program are expected to be achieved by focusing on two specific Deliverables. The first Deliverable, “Identify water resources potential and promote sustainable irrigation development,” aims to define the irrigation potential of the country and promote sustainable and equitable development of irrigation and drainage. It includes five Sub-deliverables and 22 activities. The second Deliverable, “Strengthen services for irrigation/drainage development and supply chains for related technologies – to enhance farmer’s ability to expand irrigated agriculture,” aims to strengthen supply chains for irrigation/drainage technologies and other inputs, increase adoption of technologies, and ensure improved and sustainable production and productivity. It includes six Sub-deliverables and 28 activities.

Overall performance summary

The two Deliverables of the Irrigation & Drainage program are supported by eleven Sub-deliverables, seven of which have started operation in 2008 EC. Out of these six Sub-deliverables, two are on track, while the remaining five Sub-deliverables have been delayed.

Deliverable 12.1 Identify water resources potential and promote sustainable irrigation development

- **Sub-deliverable 12.1.1** Identification of water resources and their potential for irrigation
- **Sub-deliverable 12.1.2** Development of national irrigation and drainage information management system, in line with broader sectoral MIS
- **Sub-deliverable 12.1.4** Development of new, comprehensive guidelines for the study, design, and construction of irrigation and drainage facilities focusing on enforceability, standardization, appropriate social and environmental safeguards, mechanisms for quality control, contract management
- **Sub-deliverable 12.1.5** Establishment and strengthening of water users institutions’ capacity to promote sustainable use of irrigation water, proper drainage, maintenance of infrastructure, equitable water sharing and to engage women in decision-making

Deliverable 12.2 Strengthen services for irrigation/drainage development and supply chains for related technologies to enhance farmers ability to expand irrigated agriculture

- **Sub-deliverable 12.2.3** Strengthening existing and promoting new irrigation supply chain businesses
- **Sub-deliverable 12.2.5** Promotion of innovations to promote environmentally and women friendly technologies for irrigation water management
- **Sub-deliverable 12.2.6** Sustainable HHI Value Chain interventions implementation

Key success areas

- Over the last year, methodologies for mapping SGW resources have been successfully tested in 136 woredas of SNNP and Oromia. The radar based WATEX technology (used with limited results in the previous year) was upgraded by superimposing additional data and analysis, and an alternative technology by AQUATEST was tested with enhanced results (80% accuracy). Based on this, an initiative to scale-up SGW mapping nationally is being developed using a hybrid approach that integrates remote sensing technologies with conventional hydrogeological methodologies.
- Complementing the SGW mapping exercise, ground water management and decision support tools have been developed; technology and related apparatus to help locate SGW has been introduced; training has been provided to woreda irrigation experts on household irrigation development and management; well-spacing has been defined; and well-drilling has started. Well-drilling groups have been supported in selected woredas to be established as licensed businesses to provide ongoing services.
- Additional successes have been had in the implementation of sustainable household irrigation (HHI) value chain interventions in 21 woredas selected from Amhara, SNNP, Oromia, and Tigray. In the past year, 90,517 smallholder farmers in the pilot woredas practiced HHI and cultivated 70,414 ha of land to produce 1,012,329.2 metric tons of high-value crops. More than 900 manual pumps were manufactured and distributed to farmers, and 554 engine pumps were maintained by trained local pump maintenance providers.

Areas with challenges

- Limited capacity for coordination of Transformation Agenda Deliverables by implementing partners, problems of implementation capacity, and competing priorities, and lack of attention or resources to the Transformation Agenda have been challenges in the reporting year.
Watershed & Agro-forestry Development

Why is transformation needed in this program area?
Degradation of the natural resource base is a major threat to agricultural development in Ethiopia. Environmental management, therefore, underpins all agricultural development and transformation efforts. A key element of this is watershed development, which focuses on soil, water, and biodiversity conservation and rehabilitation measures. It goes hand in hand with promoting more sustainable farming practices and developing livelihood opportunities to realize value from rehabilitated lands, including agro-forestry that integrates farming with forestry to maintain soil health and curtail crop production on high elevations and steep slopes.

Watershed development in Ethiopia is carried out as public works with the engagement and mobilization of rural communities and support of agricultural extension services. This has yielded substantial results, and in many parts of the country the natural resource base is able to support higher levels of agricultural activity. It is estimated that in the past years, 20 million ha of land has been brought under physical and biological conservation measures and 11.7 million ha of land has been brought under area closure.

Nonetheless, watershed development has not been planned in terms of creating new livelihood opportunities nor promoted as an integral element of the local economy. Neither are revenue streams from rehabilitation efforts fully explored. As a result, incentives for local farming communities or businesses to invest in watershed development are weak and returns on investment lower than their potential. The Watershed & Agro-forestry Development program focuses on promoting an approach that integrates watershed development with the creation of enhanced livelihood opportunities for equitable sharing of benefits.

Objectives of the program
The objectives of the Watershed & Agro-forestry Development program include promotion of sustained development of watershed by linking investments in watershed rehabilitation with livelihood opportunities (including agro-forestry) and ensuring equitable and rational use of watershed and agro-forestry products. Two Deliverables have been identified for this program: “Development of a system to align investments on watershed and agro-forestry development with enhanced farming and livelihood opportunities that contribute to local economic growth and household incomes while ensuring resource conservation and regeneration,” and “Enhanced framework for integrated watershed and agro-forestry development.” The Deliverables are supported by eight Sub-deliverables.

Overall performance summary
As a new area for the Transformation Agenda under GTP II, Deliverables and Sub-deliverables for this program require further consultation before receiving full senior policymaker sign-off. Initiating activities in these Sub-deliverables has been deferred to the third and fourth quarters of 2009 EC in order to complete preparatory work.
Why is transformation needed in this program area?

Promoting environmentally sustainable agriculture requires a focus on land management. It is possible to manipulate land to yield a larger stream of benefits, but if used inappropriately, land will lose its value, becoming degraded and unproductive. The optimum use of land, therefore, calls for management systems that ensure conservation and address broader social objectives, while at the same time promoting increased agricultural production. This requires planning to adapt land use practices to physical and ecological conditions and to define land use rights in a transparent and equitable manner to promote investments that protect and upgrade this critical resource.

During GTP I, significant achievements were made in defining farmers’ land use rights, strengthening rural land tenure security, and improving land-holding rights of smallholder farmers. More than eight million parcels owned by 770,309 households (20% female headed) have been registered and demarcated, of which 2.1 million parcels received second-level land use right certificates. Unfortunately, there is no national land use policy framework. Instead, there are numerous sectoral land policies developed to support particular and sometimes competing interests. Even with these, the translation of the policies into practice has not always been successful. Moreover there is no apex, umbrella organization to integrate all the concerns about land resources and take responsibility for implementing and enforcing policy provisions. An enhanced system for land use planning and administration is critical for agricultural transformation in Ethiopia as it will promote lasting, balanced, and productive use of land that fulfills all social, ecological, and economic requirements.

Objectives of the program

The key objectives of the program are to craft a national land use policy framework, build understanding of the concepts of land use policy, and develop policy instruments. The program aims to formulate institutional, operational, and technological requirements for operating land administration procedures and harmonized land use planning. These objectives will be achieved by focusing on two specific Deliverables. The first Deliverable is the “Development of an integrated national land use policy framework and its implementation modality within a federal governance structure.” The second Deliverable, “Strengthen institutional structures to integrate all the concerns in land resources and take the responsibility of implementing and enforcing the provisions of the policy,” aims to identify and capacitate suitable, umbrella organizations to oversee land concerns and build local capacity for oversight of farming and land investments. These Deliverables are supported by seven Sub-deliverables overall.

Overall performance summary

The program is a new area, not included in the original GTP I prioritized Transformation Agenda. As such it is still awaiting the full operationalization of its Sub-deliverables. Initiation of activities in these Sub-deliverables will begin in the first and second quarters of 2009 EC.
Why is transformation needed in this program area?

Soil health is a critical component of the sustainable intensification of agriculture; soil fertility is a feature of soil health that relates to the capacity of a soil to provide essential plant nutrients. As such soil health and fertility reinforce efforts to sustainably accelerate agricultural production and productivity growth.

During the GTPI period, a soil sector strategy was developed and initiated, while the MoANR established two new directorates to lead and oversee implementation: Soil Fertility Management and Soil Resource Information. The Ethiopian Soil Information System (EthioSIS) project was launched in 2012 to provide high-resolution soil fertility maps that have helped to revise fertilizer recommendations as well as design site-specific soil management interventions. However, Ethiopia’s soil system has not yet reached its full health and fertility potential. Soil nutrient mining, the result of subsistence-oriented, low-input, low-output agricultural practices, is a major cause of low soil fertility. In addition, Ethiopia has the highest level of salt affected soils in Africa, while the rate of soil loss due to water erosion is among the highest globally, averaging 30 to 42 tons per hectare per year. Soil acidity also poses a serious threat to sustainable smallholder production intensification in some areas.

Fertilizer use in Ethiopia is low; the average application rate is less than 25 kilogram per hectare, and increased fertilizer use is seen by many as a fundamental requirement to improve production. However, fertilizers need to be part of an integrated fertility management plan that includes judicious use of soil ameliorants and organic fertility sources in combination with chemical fertilizer inputs.

Objectives of the program

The overall objectives of the Soil Health & Fertility program are to: 1) tackle key soil health constraints and replenish the fertility status of agricultural soils; 2) establish comprehensive soil resource information systems and build soil, fertilizer, plant, and water analytical and data interpretation capacity at the national level; and 3) ensure increased collaboration among key partners in soil health and fertility. It is expected that these objectives will be achieved by focusing on two specific Deliverables.

The first Deliverable, “Improve fertilizer use efficiency to inter alia enhance crop productivity, reduce GHG emissions, and improve nutrient value,” aims to strengthen development of national soil test interpretation capabilities and site-specific decision support tools such as nutrient management systems that can be offered to farmers through the extension service. It includes five Sub-deliverables and ten activities. The second Deliverable, “Develop, validate and scale-up Integrated Soil Fertility Management (ISFM) technology packages for major cropping systems and agro-ecologies,” aims to strengthen the ISFM technology package development and dissemination processes. It will do this by assessing more effective and economic combinations of locally available nutrient sources and inorganic fertilizers that farmers can apply on a site-specific basis to increase crop yields and incomes. It includes four Sub-deliverables and eight activities.
Overall performance summary

In total, this program has two Deliverables and nine Sub-deliverables. During the period under report, eight Sub-deliverables have been operationalized and are on track.

<table>
<thead>
<tr>
<th>Deliverable 15.1 Improve fertilizer use efficiency to inter alia enhance crop productivity, reduce GHG emissions, and improve nutrient value</th>
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</thead>
<tbody>
<tr>
<td><strong>Sub-deliverable 15.1.1</strong> Develop soil test -crop response index based fertilizer recommendation and incorporate within the agricultural extension system</td>
</tr>
<tr>
<td><strong>Sub-deliverable 15.1.2</strong> Establish and strengthen soil testing laboratories</td>
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<tr>
<td><strong>Sub-deliverable 15.1.3</strong> Fine-tune, develop and implement solutions to address acidity, salinity/sodicity, and waterlogging problems to increase fertilizer use return</td>
</tr>
<tr>
<td><strong>Sub-deliverable 15.1.4</strong> Identify and implement decision support tools to enhance nutrient use efficiency</td>
</tr>
<tr>
<td><strong>Sub-deliverable 15.1.5</strong> Complete national soil fertility and soil resource map and develop national soil test based fertilizer recommendation atlas at woreda level</td>
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<tr>
<th>Deliverable 15.2 Develop, validate and scale up ISFM technology packages for major cropping systems and agro-ecologies</th>
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</thead>
<tbody>
<tr>
<td><strong>Sub-deliverable 15.2.1.</strong> Identify best combinations of organic, inorganic and bio fertilizers and cropping practices to enhance nutrient supply, storage and availability to sustainably increase system productivity</td>
</tr>
<tr>
<td><strong>Sub-deliverable 15.2.2.</strong> Identify and validate appropriate conservation agriculture techniques for major cropping systems and agro-ecologies</td>
</tr>
<tr>
<td><strong>Sub-deliverable 15.2.3.</strong> Integrate ISFM and conservation agriculture best practices into extension package, with special focus on women farmers</td>
</tr>
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</table>

Key success areas

- EthioSIS produced woreda-level soil fertility status maps for Tigray, SNNP, Amhara, and Harari regions, and Dire Dawa city administration. Activities are underway to complete the other regions of the country in 2017.
- Grid-based surveys were conducted in 596 woredas and 59 confluence points to map the biophysical resources of the country, using instruments with high detection limits, such as MP-AES, ICP, and CN analyzers and Infrared spectroscopic analysis techniques in addition to wet-chemistry analysis.
- Six soil testing laboratories were furnished with MP-AES, ICP, and CN analyzers.
- 56 woredas validated the sensitivity of soil fertility maps, and for these mapping units provisional fertilizer recommendations have been developed for wheat, teff, maize, and barley production belts.
- 20 nutrient gradient plots have been established in selected benchmark sites to establish soil phosphorus and potassium critical levels for wheat, teff, maize, and barley cropping systems.
- Through field testing and large scale demonstrations, the program has introduced a method to apply small, affordable quantities of lime with inorganic inputs at the time of planting that can increase farmer’s average yields by 350-600%.

Areas with challenges

- Targeting appropriate advice and inputs to farmers based on a better understanding of the soil resource base is complex and challenging. The experience needed for harnessing new advances in spatial decision support systems, including GIS, remote sensing, and diagnostic surveillance approaches is very limited. Hence, the program is supporting building national capacity in soil resource surveying, processing, mapping and soil test interpretation.
Why is transformation needed in this program area?

The impacts of both climate change and unsustainable natural resource use in Ethiopia are clear. In response, the Climate Resilient Green Economy (CRGE) strategy sets out ambitious goals for streamlining climate considerations through all government intervention sectors and for achieving carbon-neutral growth. The Climate Change Adaptation & Mitigation program cuts across all agriculture transformation initiatives to ensure that the development of the sector includes building resilience and adaptation to the changing climate; support the reduction and / or sequestration of GHG emissions; and encourage natural resources conservation and / or enhancement in the course of achieving transformation and development goals.

In Ethiopia, the agriculture sector contributes disproportionately to climate change, generating around 80% of the country’s GHG emissions. Ethiopia’s vision of faster and sustained carbon-neutral growth cannot be achieved without concerted effort to ensure that agricultural practices, inputs, technologies, and post-harvest systems are all efficient, carbon-neutral, and conserve the natural resource base. Because smallholder farmers in Ethiopia are already heavily impacted by climate change, it is important that proactive measures are put in place to promote greater resilience to an already changing environment.

The main bottleneck that the program aims to address is the lack of focus and attention by agricultural services and systems to support the development and promotion of climate smart technologies and practices. For example, the agricultural extension system is not organized to demonstrate and train farmers on climate smart agriculture (CSA), does not incorporate climate information in its advisory services, and lacks CSA related technology packages; the agriculture input supply system does not address input requirements for CSA; and little attention is given for the generation of CSA technologies and practices in the agricultural research system. Similarly, while CSA may involve a shift in farming systems toward non-traditional products, market services for such products remain weak.

Objectives of the program

The main objective of the program is to promote CSA in Ethiopia’s agricultural transformation. This key objective is to be achieved through: enabling agricultural systems and services to promote CSA; strengthening input, output, and financial market systems related to CSA; and enhancing human and institutional capacity to promote CSA.

This program aims to mainstream priorities identified by the CRGE Strategy into the Transformation Agenda. As such, the program does not have its own Deliverables, but rather has supported the integration of CSA related Sub-deliverables and / or activities into the Transformation Agenda Deliverables of other program areas.
Overall performance summary

Progress in implementing a “green” Transformation Agenda is on track. Achievements include: 1) a move away from blanket fertilizer application of urea and DAP toward integrated soil fertility management (complementing chemical fertilizers with organic solutions and addressing soil health issues such as acidity) and application of fertilizers more targeted to nutrient deficiencies in the soil; 2) promotion of the sustainable development of household irrigation to help farmers both intensify production and reduce reliance on rainfall; and 3) strengthening agricultural extension and research systems to incorporate climate information and promote CSA technologies among smallholder farmers.

Key success areas

Key successes in terms of implementing a “green” Transformation Agenda include:

- **General**: Climate related Sub-deliverables and activities with clear indicators and targets have been incorporated into the Transformation Agenda. Analytical work (specifically, three studies on greening the dairy and value chains and a GHG emission accounting framework) as well as a livestock nutrition roadmap have been completed. Furthermore, a sustainable irrigation development strategy is underway and a rural finance greening study is planned.

- **Market-Oriented Extension**: A pilot for the capacitation of FTCs as models for demonstrating and training on CSA has been initiated; climate advisories based on existing climate information (while investing in generation of downscaled climate information) have been developed and disseminated through regular extension services and the agricultural hotline.

- **Seed Supply & Distribution**: In supporting diversified seed distribution, expansion into new CSA-related product types has been promoted; (i.e., fodder seeds to promote zero grazing, tree seedlings for agro-forestry, and pulse crop seeds for intercropping and crop rotation).

- **Fertilizer Production & Distribution**: Application of fertilizers tailored to soil nutrient deficiencies through soil mapping, and production and demonstration of blended fertilizers has been promoted—more optimal fertilization should reduce GHG emissions from crop production.

- **Demand-Driven Research**: The national agricultural research system has been strengthened to develop problem-solving technologies related to CSA, starting with tef research.

- **Commercial & Contract Farming**: A Code of Conduct to ensure environmentally sustainable practices are followed by private investors in agricultural production has been developed.

- **Irrigation & Drainage**: Shallow ground water mapping has been piloted as a basis for sustainable ground water use for household irrigation.

- **Evidence-Based Planning & MLE**: Climate related interventions and indicators have been incorporated in GTP II documentation.

Areas with challenges

- Successful CSA mainstreaming requires its systematic integration into the agricultural research, extension, and farming systems continuum. However, while various aspects of CSA are receiving attention, promotion of sustainable agricultural practices among smallholder farmers is not well addressed. Interventions cut across many actors including the research-extension-farming systems continuum, financial systems, input supply systems, and output market development – particularly where sustainable farming requires shifting away from traditionally produced crops (such as from cereals to perennials on steep slopes). A well-rounded approach to the promotion of CSA is therefore challenging as it requires collaboration among various actors, the development of appropriate tools and approaches, and proper understanding of trade-offs where interventions compete against each other as well as the creation of capacity in supporting institutions.
Why is transformation needed in this program area?

Gender equality is critical to achieving agricultural transformation in Ethiopia from various perspectives. While production and productivity gains and commercial orientation of smallholder farmers form the basis for agricultural transformation, gender inequalities can become a significant constraint, particularly to production growth in smallholder farming. Smallholder agriculture is organized around households drawing labor primarily from household members, with very limited wage labor. As such, women’s roles are critical in agricultural production. To the extent that they hinder the ability of farming households to fully leverage women’s roles, gender inequalities hold back smallholder agricultural production. Additionally, female headed households are 23% less productive than their male-headed counterparts in Ethiopia because female heads are resource poor and relatively less served with advisory services and production inputs. Women, who make up slightly over half of the country’s productive population, need to be engaged in the agricultural growth process.

The aspirations of agricultural transformation are not only to promote accelerated agricultural growth and structural transformation of the national economy, but also to enhance the welfare of the rural population. From this perspective, gender inequalities related to women’s decision-making ability on agricultural functions and income must be addressed, particularly as regards labor allocation between farm and domestic functions and household welfare as regards nutrition, education, and caregiving.

Objectives of the program

The objective of the Gender program is to promote gender equality in Ethiopia’s agricultural transformation. It is expected that this will be achieved by enhancing the capacity of sectoral institutions to mainstream gender equality considerations into all interventions and by ensuring that agricultural systems and services reach women and are tailored to their needs.

The program does not have specific Deliverables. Rather, gender equality is mainstreamed across the Transformation Agenda, focused on organizational capacity, extension, research, household irrigation, soil fertility, mechanization, rural finance, and cooperative development.

Overall performance summary

Implementation of gender related Deliverables in the Transformation Agenda is on track but with slight issues. The year has been dedicated to raising awareness and alignment on the gender aspects of the Transformation Agenda while taking forward some discrete gender related interventions. However, the program has faced challenges in generating quality analysis to inform such interventions. Thus, for example, some gender-related Deliverables under the Irrigation & Drainage program have been stalled as a related gender analysis did not provide clear recommendations for action.
Key success areas

- **General**: A gender strategy for the sector has been drafted and is close to finalization. It is complemented by revision of existing gender mainstreaming guidelines, assessments on gender mainstreaming capacity in agriculture sector institutions, and identification of gender sensitive technologies.
- **General**: A national network aimed at bringing together various actors who work on gender and agriculture has been established to encourage and facilitate the sharing of experiences and innovations, improve coordination, and developing capacity and partnerships.
- **General**: Gender related interventions and indicators have been incorporated into GTP II documentation.
- **General**: A Code of Conduct has been developed to ensure that socially accepted practices, particularly in relation to gender equality, are followed by private investors in agricultural production.
- **Market-Driven Extension**: The extension system has been strengthened to provide more gender sensitive services for various segments of the rural population. This has included engagement of gender experts in various consultative fora and the review of initiatives such as the FTC capacitation work. For example, in the ISFM project, a rapid gender assessment has been undertaken to revise the vermicomposting manual to be gender sensitive.
- **Demand-Driven Research**: The national agricultural research system has been supported to develop problem-solving technologies related to the needs of women farmers (e.g., testing row weeders) and to define female friendly technologies as an input for researchers.
- **Irrigation & Drainage**: Training on irrigation has been provided to gender focal persons at woreda level in Oromia and SNNP to help them identify gaps and implement interventions based on gender analyses.
- **Mechanization**: Standard-setting for selected mechanized technologies has included gender considerations. Further work, however, is needed to identify technologies that address the needs of women.
- **Cooperatives**: Agreements have been made that support cooperatives to include ways to make them more responsive to gender issues and the needs of female members.
- **RFS**: Credit provision to women under the IVS now reaches 58% of borrowers.

Areas with challenges

- Low levels of awareness among agricultural stakeholders on mainstreaming gender remains the main challenge in promoting gender equality in agricultural transformation efforts. Getting good gender analysis done to inform design, implementation, and monitoring of projects and programs is also a consistent challenge. Efforts must continue to focus on systematically identifying and implementing findings of the gender audits of agriculture sector institutions at regional and federal levels (where they have been carried out).
Why is transformation needed in this program area?

The Government of Ethiopia recognizes that addressing malnutrition is essential to achieving sustainable development. Though numbers decreased during GTP I, unacceptable levels of stunting, wasting, and underweight children are still effects of malnutrition in Ethiopia. While there have been some significant achievements in terms of enhancing the Ethiopian population's nutritional status, malnutrition continues to be a problem that requires attention. Addressing malnutrition has several dimensions that relate directly to agriculture, as the sector where food is produced, including enhanced access to diverse foods, improved nutrient content in available food, and changes in consumption patterns and dietary diversity.

Current practice along agricultural value chains in Ethiopia does not promote improved nutrition outcomes. As improved varieties are developed and introduced to farmers, attention is paid to yield enhancement and not to the nutrition quality of crop varieties. Neither is attention given to backyard production that creates diversity in the food that is available for farming household consumption. Because nutrition is not something often considered in the development of agricultural value chains, there is often an additional loss of nutrition value during post-harvest handling and food processing.

Contributing to all of this are low levels of knowledge about nutrition and poor collaboration among actors focused on nutrition, particularly with those outside of the agriculture sector such as in health and education. Another critical challenge relates to intra-household gender dynamics. In most cases, women are responsible for household consumption as well as the care of children and the sick. Women’s low level of empowerment and limited influence on production decisions and income disposal directly influences nutritional outcomes.

Objectives of the program

The Transformation Agenda seeks to promote nutrition sensitive agriculture. It focuses on ensuring that production systems that are largely mono-crop farming (often predominantly cereal-focused) and livestock rearing are complemented by protein, vitamin and mineral rich products for household consumption—whether in terms of the quality of crops produced, or diversity of on-farm production.

Nutrition considerations cut across various programs of the Transformation Agenda including research, extension, input supply and gender. The program therefore does not have specific Deliverables. Rather, nutrition is mainstreamed across the Transformation Agenda.

Overall performance summary

This is a new area under the GTP II Transformation Agenda, and Deliverables and Sub-deliverables are still under development. Activities have been deferred to the first and second quarters of 2009 EC in order to finalize preparatory work.
Why is transformation needed in this program area?

For agricultural development to be truly transformational in Ethiopia, all sections of society need to be included in, and benefit from, the agricultural growth process. Marginalized communities and poor, disadvantaged households are likely to be left behind unless they are supported by specific, targeted interventions. The Transformation Agenda identifies three population groups that require special attention to achieve broad-based agricultural transformation: those that are food insecure, pastoralists and agro-pastoralists, and youth.

Nearly 10% of the rural population in Ethiopia is food insecure.\(^3^5\) Such households have been supported through a productive safety-net program that provides transfers to bridge their food gaps, while engaging them in public works. Shifting this support to promote livelihood development will allow households to benefit from growth. Meanwhile, pastoralists and agro-pastoralists have been marginalized in Ethiopia. They must deal with arid environments; long-term environmental degradation; vulnerability to recurring droughts; and increasing competition for natural resource use. They also face poor infrastructure; weak support services for livestock production; uneven access to markets; and constrained mobility. Significant investments in infrastructure, particularly water resources development, were undertaken during GTP I with the aim of increasing opportunities available to pastoralists, but these communities require continuous support to be able to take advantage of them. Across both populations, and among other communities, youth employment is a major economic and social issue. Youth, defined as those aged 15-29, make up about 27% of the population.\(^3^6\) With limited access to farmland and higher education levels than the older population, unless they migrate out, they must either work on family plots or seek wage employment. The GoE estimates youth unemployment to be about 40%.\(^3^7\) Opportunities for youth employment need to be developed.

Though the necessity for targeted support to these population groups is clear, agricultural services and systems in Ethiopia are not designed to proactively address the specific needs of any particular group.

Objectives of the program

The Transformation Agenda seeks to identify opportunities for marginalized and disadvantaged communities or population groups and to promote customized interventions across key programs to support them. The overall objective of the program is to integrate such communities into the agricultural growth process. The program does not have specific Deliverables. Rather, interventions are mainstreamed across the Transformation Agenda.

Overall performance summary

Deliverables and Sub-deliverables for this program remained under development at the printing of this report. Initiating activities in these Sub-deliverables has been deferred to the first and second quarters of 2009 EC in order to finalize plans, identify resources, and seek stakeholder engagement and sign-off on design.
Why is transformation needed in this program area?

Biodiversity refers to the genetic variation within a given area and is often understood as the amount of variability within species (plants, animals, and other organisms), between species and between ecosystems. As a country of great geographical and climatic diversity, Ethiopia has many and varied ecosystems, which have given rise to a diverse array of flora and fauna. As a result, the country is widely recognized as a biodiversity hub – one of the richest genetic resource centers in the world. These biological resources have immense potential to contribute to the development of the country’s agriculture, as well as to various other sectors, at the same time that they are threatened by many of Ethiopia’s current agricultural practices.

Ethiopia is considered one of the “main centers of origin / diversity for several cultivated crops and their wild weedy relatives”, especially in four of the world’s widely grown food crops – wheat, barley, sorghum, and peas. It is also recognized as a center of diversity for domestic animal genetic resources. A diversity of genetic resources supports greater opportunities for agricultural development including adaptive responses to challenges such as disease epidemics and climate change, allowing ecosystems to withstand and recover from such shocks. As such, for agricultural transformation to be sustainable, efforts to enhance agricultural productivity need to be complemented by serious attention to conserving the country’s diverse genetic resources.

However, agricultural development can threaten biodiversity as shifts are made to the exclusive production of exotic crops that tend to have limited variety, or as land development and clearing for agriculture is done in unsustainable ways, including draining wetlands, clearing forests, and introducing pollutants (particularly through chemicals). The spread of invasive plant species can also threaten native species, as can over-grazing by livestock.

Objectives of the program

The overall objective of the Biodiversity program is to reduce the threat from and enhance the use of nationally significant biodiversity resources. It is not expected that there will be any Deliverables specific to this program. Rather, the approach is to reorient agricultural services and systems (e.g., extension, research, seeds, land use, irrigation, etc.) to promote the use of landraces, conserve biodiversity resources, and control invasive species. Three key outputs for overall activities in 2009 EC have been identified by regional teams, which include promoting indigenous species, managing and minimizing the impact of expansion of invasive alien species, and ensuring that indigenous species are characterized and maintained.

Overall performance summary

The program does not have its own deliverables. It is also a new area that had not been included in the prioritized Transformation Agenda during GTP I, and as such is still under development. Deliverables and Sub-deliverables will be developed in the first half of 2009 EC with operationalization expected in the second half of the year.
PILLAR III: AGRI-BUSINESS & MARKETS
Ethiopian agricultural markets are characterized by inefficient and often extended marketing chains between producers and consumers, coupled with limited market infrastructure and services for farmers. The transformation of agricultural production from subsistence farming to a commercial orientation requires the efficient and timely delivery of quality inputs to farmers at competitive prices. It also requires transparent output markets that provide signals to the farmers, allowing them to make informed decisions on what to produce and at what quality standards, as well as where and when to sell their outputs.

In some commodities, such as specific fruits and vegetables, the market structure involves just a few intermediary buyers who control a significant aspect of the supply chain, thus reaping the largest portion of the benefit. In addition, the absence of wide-scale commodity grades and standards means that farmers do not have price incentives to produce high-quality commodities that can attract premium prices in domestic markets and access export markets. This also results in high transaction costs and limited transparency, which put farmers at a disadvantage as they are forced to negotiate prices with imperfect information.

In the absence of adequately remunerating and competitive markets, merely focusing on the production aspect of the agricultural value chain has sometimes led to market price collapses and discouraged farmers from buying yield enhancing inputs to increase production. Therefore, improving the efficiency of agricultural markets, reducing transaction costs, and improving market information transparency is a prerequisite for broader agricultural transformation. At the same time, increased investment in medium- and large-scale commercial farming with enhanced linkages to smallholders using out-grower schemes and contract farming arrangements is envisaged to significantly contribute to exports, as well as producing high-quality and quantity raw materials for agro-industry that reduce imports and save valuable foreign exchange reserves.

There are six programs included in this pillar of the GTP II Transformation Agenda:
1. Market Infrastructure
2. Market Services
3. Domestic & Export Markets
4. Cooperatives
5. Commercial & Contract Farming
6. Agro-processing & Value Addition

Programs in this pillar that have developed Deliverables and Sub-deliverables and begun implementation are the areas of Cooperatives and Commercial & Contract Farming. The three market-related programs have aligned with all key stakeholders on the Deliverables and Sub-deliverables with implementation expected to be initiated in the first half of 2009 EC. Key stakeholders have agreed to integrate the Agro-processing & Value Addition program with the ACC Initiative as a way to implement activities in GTP II.

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Sub-deliverables
Market Infrastructure

Why is transformation needed in this program area?

From primary to terminal markets, Ethiopia’s market infrastructure continues to be severely inefficient, despite investments in both primary market place structures and modern transaction centers such as the Ethiopian Commodities Exchange (ECX). Rural-urban market linkages are weak, and without efficient market infrastructure at all stages of the supply chain, from local retail and assembly to wholesale and retail markets in major urban market centers, modernizing and transforming the agriculture sector will not be fully realized.

Enhancing market center management and handling capabilities is key to agricultural transformation. Also key is the creation of an effective regulatory system and enabling environment that supports the well-functioning management of private and public sector warehousing services to reduce post-harvest losses. A strong regulatory environment can also help to improve operational efficiency, introduce technologies, and allow for better quality control so as to meet the demands of both processors and other market actors.

Objectives of the program

The objectives of the Market Infrastructure program are to modernize the existing Market Information System (MIS) for agricultural commodities, improve operation of market centers, and enhance the enabling environment to attract more investment in storage facilities.

The key objectives in this program are expected to be achieved by focusing on three specific Deliverables. The first Deliverable, “Develop and implement a modern Market Information System for agricultural commodities,” aims to ensure the comprehensiveness, timeliness, and robustness of the flow of market information using modern technologies that will be easily accessible to smallholder farmers, cooperatives, traders, and policymakers. The Deliverable has three Sub-deliverables. The second Deliverable is to: “Strengthen ownership, governance, and management structures for expansion and modernized management of market centers, from primary level to selected terminal markets.” The Deliverable has three Sub-deliverables. The third Deliverable, which includes four Sub-deliverables, aims to “Strengthen the enabling environment to strategically attract private and public sector investment in storage facilities,” with a particular focus on warehouse construction and services.

Overall performance summary

In total, the Market Infrastructure program has three Deliverables and 11 Sub-deliverables. As a new area that was not prioritized during GTP I, it is still awaiting the full operationalization of its Sub-deliverables, though all have been signed off by senior policymakers. In consultation with key stakeholders, the development of activities for Sub-deliverables has been started and will be finalized during the first quarter of 2009 EC.
Market Services

Why is transformation needed in this program area?

Ethiopian agricultural markets are characterized by weak market support services and extended market chains between producers and consumers. For global and local markets to expand, market services such as standardization and grading, packaging and processing, as well as financial, business development, and market information services need to be developed to ensure that quality requirements are maintained and supply sustainability is made possible. Regulations and standards for food safety, quality, and traceability are increasingly enhancing the ability of developing countries, particularly those that are industrialized, to compete in global markets for agricultural and food products.

The lack of such regulations, standards, and market services is impeding the competitiveness of most agricultural value chains in Ethiopia and therefore their effective integration into regional and global markets. Investing in the required systems to meet evolving food safety and traceability standards will therefore open up new opportunities to Ethiopian producers, leading to the enhanced competitiveness of specific commodities in both local and international markets, improving product quality, attracting premium prices in domestic markets, and increasing access to export market opportunities.

Objectives of the program

The objective of the Market Services program is to ensure the provision of accessible and efficient market services that will improve the ability of smallholder farmers and producers to make informed decisions on what to produce and at what quality standards, as well as where and when to sell their outputs.

The key objectives in this program are expected to be achieved by focusing on two specific Deliverables. The first Deliverable, “Improve and strengthen the formulation and implementation of food safety and quality standards” includes four Sub-deliverables. It focuses on aligning regulations with international standards and enforcing these for priority commodities. The second Deliverable, “Strengthen the regulatory and institutional environment to enable increased access for agricultural trade finance” has four Sub-deliverables. It targets the implementation of a Warehouse Receipts Finance system and the introduction of new forms of trade financing, including commodity collateralized finance.

Overall performance summary

Also a new area for the Transformation Agenda in GTP II, full operationalization of the program’s two Deliverables and eight Sub-deliverables is still forthcoming, though it has full senior policymaker sign-off. In consultation with key stakeholders, the development of all activities has been initiated and will be finalized during the first quarter of 2009 EC.
Domestic & Export Markets

Why is transformation needed in this program area?

While the Transformation Agenda Deliverables identified in the Market Infrastructure and Market Services programs will have major impact on the overall development of market conditions, readying market actors to increase the volume and value of commodities marketed in domestic and export markets will require additional interventions. These will include improving the competitiveness of both commodities and the private sector; strengthening the capacity of aggregators to optimize their supply chains; building effective linkages to local and global wholesale and retail markets; and designing effective branding and promotion strategies.

With large-scale value addition and agro-industrialization becoming more robust on the domestic front, and clear comparative advantages emerging for Ethiopian commodities such as honey and tef on the international front, critical interventions are needed to support aggregators such as cooperative unions and exporters to enhance their sourcing capabilities from smallholder farmers. These aggregators also require support to strengthen supply chain management, uphold food safety and quality standards, and increase wholesaling and retailing activities. This, in turn, will improve domestic supply and affordability as well as meet export market quality and quantity demands.

Objectives of the program

The objective of the Domestic & Export Market program is to create the enabling environment wherein smallholder farmers can have diversified opportunities to market their outputs and can be effectively linked to aggregators with efficient supply chains. Furthermore, this program aims to support other value chain actors, primarily in the private sector, to effectively connect smallholder production to domestic and international markets.

The key objectives in this program are expected to be achieved by focusing on two specific Deliverables. The first Deliverable, “Strengthen and advance Ethiopia’s agricultural trade policies and strategies,” aims to articulate a comprehensive national agricultural trade policy with a clear set of rules and regulations that promotes the country’s output markets and international trade. This Deliverable has two Sub-deliverables. The second Deliverable, “Strengthen the ability of market actors to increase the volume and value of commodities marketed in domestic and export markets,” aims to promote market incentives and structured demands to encourage smallholder farmers to increase the supply of their commodity outputs. This Deliverable has four Sub-deliverables.

Overall performance summary

The Domestic & Export Markets program is a new area that was not prioritized during the Transformation Agenda under GTP I. It has a total of two Deliverables and six Sub-deliverables, all of which have received full policymaker sign-off. Activities have been developed in consultation with relevant stakeholders and the program is expected to become operational in 2009 EC.
Agro-Processing & Value Addition

**Why is transformation needed in this program area?**

Studies by UNIDO have indicated that while agriculture plays a central role in the Ethiopian economy, agro-industries accounted for only 5% of GDP in 2012, but nearly 50% of the total manufacturing sector, the largest share of manufactured goods.\(^3\) Still, Ethiopia’s agro-exports are currently almost entirely limited to primary and unprocessed products. In 2013, processed products accounted for only 1.3% of total agro-industry exports.\(^3\)

Ethiopia’s agricultural transformation relies heavily on the pace at which the agro-processing subsector is transformed. Cognizant of this, the Government has initiated different development programs, including the ACC Initiative and the Integrated Agro-Industrial Parks (IAIPs), that aim to spur the development of agro-processing. The two initiatives, in combination with other related development programs, are expected to significantly contribute to the transformation of the agriculture sector, and the overall economy in general.

**Objectives of the program**

The goal of the Agro-processing & Value Addition program is to provide support to the development of agro-processing in Ethiopia to build both domestic and export growth possibilities for the sector. The single prioritized Deliverable, “Ensure alignment of Strategies / Interventions to operationalize Integrated Agro-Industrial Parks (IAIPs) through sustainable supply of commodities,” with four associated Sub-deliverables, will focus on the full operationalization of the Agro-Industrial Parks through strengthening the linkages between the production of commodities and their processing and value addition.

**Overall performance summary**

As part of the process of planning the Transformation Agenda in GTP II as it relates to agro-processing, the ATA and the MoI have engaged other stakeholders to draft the prioritized Deliverable referenced above. Ownership of the main Deliverable and some of the Sub-deliverables that are related to timely completion of the IAIPs and associated Rural Transformation Centers are likely to rest with the MoI. Meanwhile, the MoANR and the ATA will own the Sub-deliverables that are related to the enhancement of production and productivity of selected commodities to ensure that they can be sustainably supplied to the IAIPs at the required levels of quality and quantity. Detailed planning of activities, milestones, and budget for the deliverable will be carried out in the first quarter of 2009 EC.
Cooperatives

Why is transformation needed in this program area?

Cooperatives can be the bedrock for the commercialization of smallholder agriculture – and indeed for the overall transformation of the sector – by being market oriented and linking output from smallholder farmers to domestic and global markets. Ethiopian cooperatives at present, however, are perceived as being predominantly input-market and social service-oriented entities, delivering their services with no differentiation between members and non-members and foregoing incentives to transition toward more output, market-oriented bodies. During GTP II the share of output marketed through cooperatives is expected to increase by 50%, up from its current share of 18%. Achieving these targets requires transforming cooperatives into competitive and efficient business-oriented entities. The Cooperatives program supports this transformation by identifying and addressing critical systemic bottlenecks in close collaboration and coordination with key stakeholders such as the FCA.

To realize the full potential of cooperatives and move them toward a greater market orientation, critical bottlenecks around smallholder farmers’ access and linkages to output markets and finance must be addressed. Moreover, cooperatives will need to be strengthened to create the enabling environment for smallholder farmers to engage in collective bargaining and marketing to reduce information and transaction costs, and to efficiently access services such as specialized extension, quality grading, storage, transport, and value addition.

In Thailand, India, Kenya, and South Korea, cooperatives have been used as levers to catalyze the transformation of the agriculture sector; similarly, in Ethiopia, cooperatives can be outlets for surplus agricultural produce and act as agents of aggregation, market orientation, and commercialization. As member-owned and member-controlled organizations, cooperatives are uniquely structured and positioned to provide market access and linkages as well as the full package of support services.

While cooperatives have played an indispensable role in ensuring smallholder farmers’ access to agricultural inputs regardless of membership, an exclusive focus on input marketing without differentiation between members and non-members, has considerably impaired the sense of ownership, management effectiveness, efficiency of operations, and commercial viability. Moreover, cooperatives’ human, institutional, and infrastructural capacity limitations have led to inadequate provision of the required variety and quality of services smallholder farmers need and deserve, in particular in linking their output to markets.

Objectives of the program

The key objectives in the Cooperatives program are expected to be achieved by focusing on two specific Deliverables. The first Deliverable, “Transform Cooperatives into competitive and efficient business oriented entities,” aims to increase cooperatives’ output market share and improve their business orientation by introducing innovations such as commission based output marketing, strengthening business linkages, facilitating access to finance for output marketing, and increasing engagements in value addition activities. The first
Deliverable includes four Sub-deliverables and eight activities. The second Deliverable, “Enhance the cooperatives sector’s human, institutional and infrastructure capacity,” aims to strengthen the capacity of cooperatives through implementing tailored capacity building activities, improving the capacity of oversight and support institutions, and expanding infrastructure capacity. This Deliverable includes three Sub-deliverables and six activities.

**Overall performance summary**

In total, the Cooperatives program has two Deliverables and seven Sub-deliverables; all except one of which are fully operational. Progress is on track in three of the fully operationalized Sub-deliverables, while three have slight delays.

### Deliverable 24.1 Transform Cooperatives into competitive and efficient business oriented entities

- **Sub-deliverable 24.1.1** Enhance Cooperatives’ responsiveness to their members’ need with particular focus on female members
- **Sub-deliverable 24.1.2** Improve Cooperatives’ business orientation in output marketing
- **Sub-deliverable 24.1.3** Explore value addition bottlenecks and solutions in major Cooperative engagements
- **Sub-deliverable 24.1.4** Strengthen Cooperatives’ access to finance for input and output marketing

### Deliverable 24.2 Enhance Cooperatives sector’s human, institutional and infrastructure capacity

- **Sub-deliverable 24.2.1** Implement targeted capacity building through effective and tested mechanisms
- **Sub-deliverable 24.2.2** Improve the capacity of support and oversight institutions

### Key success areas

- Thirty-two cooperative unions have been linked with the World Food Program’s (WFP’s) Purchase for Progress (P4P) initiative to create reliable and sustainable market outlets for smallholder farmers. Participating cooperative unions are expected to deliver 40,000 metric tons of maize to the P4P program this year.
- Relatedly, consultations were undertaken to evaluate the impact of the Commission Based Marketing (CBM) pilot project, and consensus was reached among stakeholders to aggressively expand the CBM initiative during GTP II. Accordingly, 23 unions and 302 primary cooperatives have received CBM training.
- Under the Cooperative Capacity Building (CCB) initiative, three local non-governmental institutions have received sub-grants to build the capacity of 34 cooperative unions, 170 PCs, and four women-focused cooperatives in the four main regions of Amhara, Tigray, Oromia, and SNNP. The effort has thus far identified target unions and PCs for the pilot, hired business advisors that have been embedded in each union, identified capacity gaps at all levels, and developed training modules to sustainably build the capacity of the selected unions and associated PCs in line with the cooperatives’ certification scheme.

### Areas with challenges

- Improving the capacity of support and oversight institutions is a key focus area; however, there have been slight delays in the implementation of activities under this Sub-deliverable. The revised Cooperative Proclamation has been finalized but endorsement from relevant authorities is pending. In addition to the Proclamation, a regulation and directive have also been drafted but are awaiting final approval.
Why is transformation needed in this program area?

Although approximately 90% of agricultural production in Ethiopia is from smallholder farming, commercial farm outputs are expected to play an increasingly important role during GTP II. The aim is for Ethiopia to increase responsible investments in medium and large scale commercial farms with enhanced linkages to smallholders through out-grower schemes and contract farming arrangements.

Mechanized commercial farms were first introduced in Ethiopia in the 1960s. Despite five decades of experience, commercial farms – both private and state owned – have contributed very little to agricultural growth, food security, and improving the livelihoods of smallholder farmers. Lack of access to essential services and poor infrastructure, along with weak federal and regional oversight of investment land allocation and management have limited the development of commercial farms. Similarly, the limited capacity of commercial farm support institutions has been a bottleneck for further growth. Lack of enforcement mechanisms for internationally recognized environmental and social codes of conduct is another systemic bottleneck that has constrained the effective development of the commercial farm sector.

Addressing these complex systemic challenges is critical to transforming the commercial and contract farming sectors so as to realize their potential to improve food and nutrition security, develop agro-processing, create employment opportunities, and generate foreign currency.

Objectives of the program

The objectives of the Commercial & Contract Farming program during GTP II are to create the enabling environment and build the capacity of institutions for commercial farms to meet international standards, use modern technology, and link smallholders through out-grower schemes and contract farming arrangements.

To achieve these aims, this program has two specific Deliverables. The first Deliverable, “Support the creation of an enabling environment that enhances the development of the commercial farming sector and contributes to smallholder farmers’ production systems,” has five Sub-deliverables that focus on enhancing support institutions’ capacity to provide essential services and strengthening and enforcing rules of law and accountability. They also focus on implementing and enforcing environmental and social codes of practice, developing and implementing labor mobility management systems, and developing information management systems.

The second Deliverable, “Enhance commercialization of smallholder farmers agriculture through contract farming arrangements,” includes three Sub-deliverables that focus on creating policy and institutional frameworks for promoting and regulating contract farming arrangements, putting in place functional systems for nucleus-based contract farming arrangements, and building the capacity of implementing partners and smallholder farmers and their support institutions.
Overall performance summary

The Commercial & Contract Farming program is new to the Transformation Agenda, and there has been good progress in operationalizing Deliverables during 2008 EC. During the year, all eight Sub-deliverables have been operationalized with six on track and two slightly delayed.

Key success areas

- Substantial progress has been made in enhancing the capacity of support institutions to provide essential services to commercial farms and in creating a policy and institutional framework for promoting and regulating contract farming arrangements.
- Business-to-business meetings have been organized for mechanization service providers to meet with commercial farmers, and a data collection exercise is underway to assess the current input supply and distribution system for commercial farms.
- The development of a policy and institutional framework to promote and regulate contract farming is on track with drafts of National Proclamation on Contract Farming and Central Institution Guide and Implementation Plan prepared.
- In addition, four regional guidelines (namely the Coordinating Body Guidelines, Contract Parameters, Contract Guidelines, and Guide to Default Avoidance) have been prepared and shared with over 150 relevant stakeholders in workshops in the four regions of Amhara, Oromia, SNNP, and Tigray. The Bureaus of Trade of these four regions have been identified as regional coordinating institutions to drive contract farming arrangements.
- The Ethiopian Agricultural Investment, with the support of the ATA, has successfully developed a Land Leasing and Administration Guideline and a draft Commercial Farm Agricultural Extension Service Guideline.
- Relevant regional institutions have also been sensitized on basic concepts of contract farming with concrete progress observed in Tigray, Amhara, SNNP and Oromia. For instance, a fattening contract farming agreement for 13,000 sheep and 2,120 cattle has been signed between FCUs and live animal exporters in Tigray – transactions worth 5,604,657 ETB. In 2015-16, contract agreements amounting to 1.3 million quintals of wheat, sesame, malt barley and haricot beans have been signed, of which 386,000 Qtls (29%) valued at 416 million ETB have already been transacted by the end of 2008 EC.

Areas with challenges

- Lack of institutional alignment between regional and federal institutions in both the commercial and contract farming sectors have slightly held up the operationalization of the Transformation Agenda Deliverables. Efforts are underway to increase ownership and alignment at all levels.
PILLAR IV: ENHANCED IMPLEMENTATION CAPACITY
Agricultural transformation is a complex process that requires the support of efficient and capable institutional arrangements that can enhance the capacity of stakeholders to make informed decisions and to implement and monitor Transformation Agenda activities and targets. As such, building the capacity of key institutions at each level of the value chain and strengthening the institutional linkages between federal and regional organizations are both critical to successfully translate agricultural transformation objectives into detailed action plans and to realize their effective execution.

The continued challenges of capacity building call for solutions that must diversify beyond traditional approaches of trainings and exposure visits to leverage partners and tools that can make considerable contributions in upgrading both institutional and human capacities. For instance, the role agricultural enterprises play in fostering entrepreneurship, transferring technological know-how, introducing new systems, and building skillsets of on-farm and off-farm labor must be recognized and leveraged as mechanisms that contribute to strengthening the agriculture sector overall. Similarly, seizing the era of technological innovations to leap-frog certain capacities with the use of ICTs for agricultural development is essential to accelerate transformation. With ICTs becoming ever more accessible and affordable (most importantly to smallholder farmers) there are immense opportunities to reduce inefficiencies in agricultural value chains and strengthen the sector as a whole.

All of these efforts must be monitored and evaluated regularly in order to measure the impact of interventions being implemented by the Transformation Agenda. Hence, an agriculture sector-wide monitoring and evaluation system that relies on timely and accurate data and is driven by an evidence-based planning modality is necessary to ensure the longevity of all successful results.

There are four programs in this pillar of the GTP II Transformation Agenda:
1. ICT for Agricultural Services
2. Private Sector in Agriculture
3. Organizational & Human Resource Capacity
4. Evidence-Based Planning, Monitoring, Learning & Evaluation (MLE)

As a new area of focus within GTP II, this pillar contains a number of programs for which Deliverables and Sub-deliverables have only just completed development. With the exception of Evidence-Based Planning & MLE (which has several interventions under implementation) programs in this pillar will begin implementing interventions in 2009 EC.

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\[Sub-deliverables\]
Why is transformation needed in this program area?

Reliable information, data, and evidence are essential to agricultural transformation, providing the foundation on which to identify and prioritize necessary interventions. Objective data is critical for policymakers to make informed decisions and course-correct as needed. Timely, local, and context-specific information can likewise help smallholder farmers ensure that their investments will yield the greatest returns.

Unfortunately, key stakeholders at all levels of Ethiopia’s agriculture sector lack timely access to critical and accurate information needed to improve decision-making. The collection of essential agricultural information in Ethiopia, such as seed distribution and uptake, is primarily paper-based, which can be prone to error and very time-consuming. Since data collection is not automated, it risks being under- or over-estimated and becoming outdated by the time it reaches its consumers or users. Likewise, the dissemination of essential agricultural information also primarily depends on human interface through extension agents. This approach requires an enormous amount of mobilization efforts, and farmers may still not get the information they want when it is needed most.

ICTs can play a pivotal role in addressing these challenges, not least because adoption rates of ICT devices, in particular mobile phones and tablets, are continually increasing. Mobile phone penetration in Ethiopia stands at approximately 47%, whereas internet access is relatively low at 13%. This is a major increase from 2011, when these figures were at approximately 16% for mobile penetration and less than 2% for internet access. As stakeholders and partners begin integrating ICTs into their activities, these tools can bridge critical information and access gaps, helping to overcome infrastructural limitations.

Objectives of the program

To achieve its objectives, this program is focusing on two specific Deliverables. The first Deliverable, “Developing and implementing ICT solutions to collect and centralize data for policy and decision-makers” aims to ensure that key decision-makers are provided with accessible and consistent data needed to make faster, more informed decisions. Pilots are currently being run in the Ethiopian seed distribution and input demand assessments systems, where access to this type of information can help accurately assess input needs by farmers in each part of the country.

The second Deliverable, “Developing and implementing ICT solutions that enhance the delivery of agricultural extension and other essential information to smallholder farmers,” aims to enhance and expand more timely and targeted information to farmers throughout the country. A recently developed agricultural Interactive Voice Response / Short Message Service (IVR / SMS) system that allows users to call into a hotline and access a wide range of recorded messages about agronomic best practices is one of the major initiatives in this Deliverable. Access to these types of ICTs improves the speed with which smallholder farmers will have access to extension information and advisory alerts, enabling them to adopt recommendations and take actions sooner.
Overall performance summary

The ICT for Agricultural Services program is new to the Transformation Agenda but was a project during GTP I. The program includes two Deliverables and four Sub-deliverables. Two Sub-deliverables have been operationalized and are on track, while the remaining two require a diagnostic study, and implementation is expected to start in the coming year. The first operationalized Sub-deliverable focuses on redesigning an ICT platform for policy and decision-makers to monitor and track agricultural inputs and move away from a paper-based tracking system that is neither timely nor reliable. The ICT program team had piloted an input tracking system during GTP I with mixed results and is currently analyzing various tools and systems that are being utilized in other countries in order to redesign the system. The second operationalized Sub-deliverable focuses on refining and expanding the existing IVR / SMS platform to enhance the delivery of agricultural information to development agents and smallholder farmers.

Key success areas

- Over the past year more than 1.5 million callers have registered for the IVR / SMS service, 73% of who have identified themselves as smallholder farmers.
- By the end of 2008 EC, slightly more than two years since its launch, over 12 million calls have been placed into the system.
- The system has also broadcast approximately 100,000 SMS messages and 650,000 IVR messages explaining how to identify and protect against specific diseases.
- The IVR / SMS system also piloted an interactive helpdesk for 16 woredas to enable smallholders to submit specific questions to agronomic experts; in three months, participating smallholders generated more than 700 questions.

Areas with challenges

- The development of a national strategy on ICT for agriculture needs adequate prioritization from policy and decision-makers. At present, several institutions within the agriculture sector are developing their own ICT-based information dissemination and collection systems, often duplicating efforts. A comprehensive ICT for agriculture strategy that brings together such different stakeholders around a common agenda will help avoid duplication, while also allowing for the identification of new systems for development.
Private Sector in Agriculture

Why is transformation needed in this program area?

The Private Sector in Agriculture program is part of the Transformation Agenda’s overall effort to transform Ethiopia’s agriculture sector through increased and meaningful private sector engagement. The program aims to effectively engage private investors, corporations, and commercial and impact funds in the Ethiopian agriculture sector, with the ultimate aim of connecting smallholder farmers with commercial, market-focused supply chains to increase incomes and improve livelihoods.

The private sector has played a limited role in the agriculture sector to date, but effective private sector engagement in agri-business can bring added innovation, experience, and needed capital. Effective private sector engagement in agri-business can contribute added innovation, experience, and capital to improve productivity outcomes, via such programs as an agri-business accelerator / incubator that can help new and existing agri-businesses by providing varied business advisory services, proven methodologies, and access to resources. It can also help smallholder farmers by creating reliable demand sinks for their products.

The sector is therefore expected to play a critical role during GTP II, as Ethiopian agriculture strives to become more integrated into the global food system. Building the capacities of the private sector and the public institutions that support them will be critical in sustaining the transformation process. There are two broad areas of systemic bottlenecks that currently constrain private sector engagement, namely policy / regulatory issues and institutional capacity to operationalize investments.

Objectives of the program

The objectives of the Private Sector in Agriculture program are to effectively engage a broad set of investors, with the ultimate aim of connecting smallholder farmers with commercial, market-focused supply chains. The program also focuses on identifying and addressing systemic constraints in the agricultural investment environment by working in close consultation with key stakeholders, such as the Ethiopian Investment Commission (EIC). The program aims to convert promising investment opportunities and to address systemic bottlenecks that restrict private sector engagement in agriculture. The program has two specific Deliverables: to “Improve the enabling policy and regulatory environment to increase flows of investment into agriculture” and to “Strengthen institutional capacity to operationalize a greater number of quality agricultural investments.” The first Deliverable has two Sub-deliverables while the second Deliverable has three Sub-deliverables.

Overall performance summary

This program is a new area that had not been included in the prioritized Transformation Agenda during GTP I, and as such is still awaiting the full operationalization of its Sub-deliverables, although discussions with senior policymakers have been held and sign-off has been obtained.
Organizational & Human Resource Capacity

Why is transformation needed in this program area?
Implementing the key agricultural productivity, commercialization, sustainability, and inclusiveness needs of GTP II requires strong organizational systems, as well as the necessary individual abilities and capabilities required for effective leadership, coordination, alignment, and delivery of agendas from federal to woreda levels. Moreover it is imperative that key agriculture sector institutions are also building the necessary problem-solving, analytical, and project design and management capabilities to be responsive to the sector’s emerging needs. As such, building organizational and human resource capacity is a fundamental part of successfully meeting GTP II targets.

Capacity building is a lengthy process: particularly where initial capacity is very weak, improvements may require long-term commitment beyond the customary time limits of training programs so that early gains are not eroded by a hiatus or shifting priorities. The ATA seeks to enhance the capacity of government to formulate agricultural policies and programs by building analytical and policy-formulation capacity in the MoANR, the MoLF, and other relevant institutions. While support has focused on strengthening agricultural extension services and building performance tracking capabilities across the sector during the first phase of the Agricultural Transformation Agenda, the second phase of capacity building will focus on enhancing the capacity of key institutions engaged in driving smallholder farmer commercialization.

Objectives of the program
The key objective of this program area during GTP II is expected to be achieved by focusing on two specific Deliverables: “Strengthen the systems and structures that enhance the working relationship between federal and regional level institutions and with key development partners” and “Strengthen mainstreaming capacity related to gender equality and climate change mitigation and adaptation.”

The first Deliverable, which includes five Sub-deliverables, is focused on strengthening the systems and structures that foster attitudinal changes and institutional linkages between key federal and regional level organizations critical to agricultural transformation. One of the key Sub-deliverables under the first deliverable is focused on increasing capacity to implement a clustered approach. The second Deliverable, which includes four Sub-deliverables, is focused on enhancing capacity to mainstream crosscutting concerns in agriculture sector initiatives. All four Sub-deliverables in this second Deliverable were initiated in 2008 but are in the early stages of operationalization.

Overall performance summary
The Organizational & Human Resource Capacity program is a new area that had not been included in the prioritized Transformation Agenda during GTP I. All the Deliverables and Sub-deliverables for this program have been developed, and alignment and sign-off from senior policymakers and stakeholders was achieved in late 2008. As such, full operationalization of the activities is expected to begin in 2009.
Why is transformation needed in this program area?

Planning, along with monitoring and evaluation, (PME) are powerful public management tools that can be used to ensure that sector interventions are well designed and that performance can be improved or tracked. PME allows actors to systematically measure results and assess sectoral developments in order to respond to “so what” questions or explain how and why results have been achieved or not. The existence of a functional monitoring and evaluation (M&E) system and its regular use helps to foster organizational learning and ensure accountability to governments and the public at large. Above all, information provided by M&E systems can support the government in making evidence-based and high-quality decisions (including major planning, budgeting, and policy decisions) thereby improving government efficiency and effectiveness and guiding accelerated, sustainable, and inclusive agricultural development and efficient resource utilization. As such, the agricultural transformation process needs to be supported by effective sectoral planning and efficient, result-oriented M&E. This will help agricultural development to be guided strategically and will support resources to be used efficiently.

Currently, long-term sectoral planning and coordination of annual plans, budget development, and high-level reporting on agricultural performance works well. However, sector-wide M&E is not given sufficient attention and requires significant improvements. Key systemic bottlenecks that need to be addressed in this program area are:

- Weak institutional framework for PME functions, and unclear roles and responsibilities at different levels and across institutions.
- Absence of effective modalities to coordinate, harmonize, and align PME and reporting efforts across multiple stakeholders within a decentralized system as well as limited platforms for regular collaboration and experience sharing among agriculture sector PME stakeholders.
- Insufficient emphasis on result-oriented M&E (i.e., M&E functions are focusing on ad hoc reporting requirements instead of systematic measurements of achievements and analysis of developments in the sector).
- Overly cumbersome approach to collecting data (limiting timely analysis and reporting) that is not linked with the potential use of data for decision-making or made readily accessible to sectoral stakeholders.

Objectives of the program

The objective of this program is to promote evidence-based decision-making at all levels, guided by high-quality plans and a strong result-based M&E system. This is to be achieved by focusing on three specific Deliverables.

The first Deliverable is about “Strengthening the institutional structure for sector-wide result-based PME, particularly linkages between federal and regional stakeholders.” It is aimed at improving PME structures, defining institutional linkages, and enhancing capacity for planning, M&E, and analysis at federal and regional levels. It includes two Sub-deliverables designed to develop and put in place optimal organizational structures and consensus-based guidelines for smooth functioning of PME across government levels.
The second Deliverable is “Development and implementation of innovations within sector-wide M&E systems.” Its five Sub-deliverables are intended to foster integration of planning and M&E processes and promote a strong M&E system based on harmonized and standardized indicators. They also introduce analysis of sectoral trends, systematic evaluations, and a culture of learning and reflection.

“Strengthening and rationalizing knowledge management system (including functional MIS)” for the sector is the third Deliverable of this program. It is aimed at crafting a robust, comprehensive and user-friendly Management Information System (MIS) for data capture, generation of quality and timely data, and analysis and reporting. It also seeks to foster a strong system for knowledge management in the sector.

**Overall performance summary**

In total, there are three Deliverables and ten Sub-deliverables in this program. Operationalization began for six of the Sub-deliverables in the past year. Implementation of one Sub-deliverable is on track, while three are slightly delayed and another two are significantly delayed.

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<th>Deliverable 30.1 Strengthen institutional structure for sector wide result based PME, particularly linkages between federal and regional stakeholders</th>
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<td><strong>Sub-deliverable 30.1.1</strong> Develop and put in place optimal organization structures that addresses all functions of PME and are staffed with appropriate experts that have relevant skills</td>
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<th>Deliverable 30.2: Develop and implement innovative, Results Based M&amp;E (RBM&amp;E) systems</th>
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<td><strong>Sub-deliverable 30.2.1</strong> Linking monitoring to GTP II results: development of indicators that (1) measure GTP-II high level objectives, outcomes, and outputs – including gender and climate related results, (2) are prioritized, (3) are standardized across levels and institutions; and, (4) appropriately disaggregated to capture cross-cutting issues.</td>
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<td><strong>Sub-deliverable 30.2.3</strong> Promoting targeted sectoral assessments: (1) establishment of comprehensive baseline for GTP II and regular updates to monitor/evaluate progress, (2) development of thematic profiles around key issues promoted in GTP II; 1 (3) linking these to requirement of decision makers at different levels</td>
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<th>Deliverable 30.3 Strengthen and rationalize knowledge management systems (MIS, knowledge products’ repository, linkages with information sources, communication systems)</th>
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<td><strong>Sub-deliverable 30.3.1</strong> Step by step establishment of rationalized, comprehensive and automated MIS for administrative data—building on existing initiatives</td>
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**Key success areas**

A consolidated, strategic sector results framework that brings together the federal and regional sectoral GTP II plans along with corresponding indicators have been identified and agreed upon. Key interventions in support of the sector’s GTP II outcomes have been identified and indicators to measure their performance at output level have also been prioritized and agreed upon. Crosscutting issues (for example, gender equality and climate change adaptation and mitigation) have been incorporated into the strategic results framework and indicators.

Significant steps to establish a functional MIS have been taken: existing MIS architecture has been reviewed and work is in progress to re-design the system in line with the evolving M&E system and its data requirements. Two databases have been tested to feed into the overall sectoral MIS: one pulls together selected administrative data and has been successfully tested in 12 woredas with expansion initiated to an additional 75 woredas; another pulls together data on selected sectoral institutions and has been successfully piloted in more than 200 woredas.

**Areas with challenges**

The main implementation challenge is the complexity of envisaged activities, which cut across multiple interventions and involve a large number of stakeholders. Implementation involves time-intensive and continuous consultations, often difficult to maintain. Furthermore, resources for undertaking the various interventions have not yet been secured. In addition, serious delays were encountered regarding the first set of activities due to some procurement irregularities.
AGRICULTURAL COMMERCIALIZATION CLUSTERS (ACC)
By design, the Deliverables and Sub-deliverables in the four primary pillars of the Transformation Agenda aim to address systemic issues that affect smallholder farmers and the agriculture sector across the entire country. In GTP II, a new “Anchor Initiative” known as the Agricultural Commercialization Clusters (ACC) has been introduced to integrate the systemic solutions in the four main pillars of the Transformation Agenda within specific high-potential geographies and strategic commodities.

This is not Ethiopia’s first attempt at geographically-based initiatives that aim to integrate interventions within the agriculture sector into broader economic plans. Previous efforts such as the Economic Growth Corridors initiative have had strong conceptual grounding but have faced challenges in implementation. However, geographically-focused approaches (also known as economic zones, free trade zones or agricultural growth corridors) have been used successfully in Latin American, Asian, and other African countries to drive agricultural transformation and rural industrialization and, consequently, economic growth.

Brazil, Chile, and Mexico, for example, each successfully developed clusters for fruit production, which now account for nearly half of the national fruit production in each country. India has also had success with agricultural clusters and integrated agro-food parks. In Sub-Saharan Africa, Kenya and Nigeria have seen the results of economic zones concentrated around agro-processing activity: Kenya’s clusters have increased the production and market value of green beans and avocados, while in Nigeria agro-processing zones have focused on nationally-prioritized staple crops.

The selected commodities and details of execution may differ across countries, but the foremost goals of establishing clusters in all cases have been to commercially integrate smallholder farmers into market-based domestic and international supply chains, increase foreign direct investment, promote exports, and improve the flow of capital by connecting the local agriculture sector with the global food system.

Similarly, Ethiopia’s vision for ACCs is to bring about rapid, sustainable and inclusive development of priority agricultural commodity value chains through a geographically-focused approach that provides a strategic and commercially-viable platform for the implementation of multiple, priority interventions for agricultural transformation-led growth and rural transformation.

Drawing upon international best practice, as well as lessons from its own past, Ethiopia has designed the
ACC Initiative to commercialize smallholder agriculture through an inclusive and environmentally sustainable approach that significantly contributes to increased incomes for smallholder farmers, improved access to domestic and international markets, increased agro-processing and value addition, and creation of off-farm employment opportunities.

During the initial phase of GTP II, ten major commodities have been prioritized within these 26 clusters, though each cluster will prioritize two to three primary commodities while highlighting rotation crops (typically legumes) important for soil health and human nutrition, as well as other livestock products to accommodate the crop-livestock mixed farming system prevalent in Ethiopia’s highlands. Strategies for seven of these commodities – wheat, maize, tef, malt barley, sesame, haricot bean, and honey – have been developed, with three additional commodities – beef, dairy, and horticulture – slated for development in 2009 EC.

Beyond the initial wave of 26 clusters, the MoANR and MoLF are engaging with their relevant regional partners to implement the cluster concept nationally. Similar to the approach on other Transformation Agenda Deliverables, the ATA is expected to lead in piloting this concept in the initial ten commodities and 26 clusters, whereas the MoANR and MoLF will be responsible for scaling up the concept across the country. For 2009 EC, the ATA has begun intensive work on the seven commodities for which strategies have been developed, focusing on an initial 14 clusters.

During the initial stages of GTP II, the ATA’s support for these clusters and commodities will entail two primary areas: increasing crop production and productivity and enhancing market linkages, through a three-pronged approach comprising innovation, testing and validation (ITV), full package demonstrations, and scale-up support to farmers. Scale-up of the full package entails encouraging farmers to use a complete set of recommended inputs and farming practices (improved seed, appropriate fertilizer, agro-chemicals, and other best practices) while ITV aims to test and validate new technologies for efficient and effective farming with the research and extension system.

As a concept integrated into GTP II, the ACC Initiative is incorporated into the second AGP, as well as the IAIPs and Livestock Master Plan. It provides a mechanism for aligning various donor and government interventions and engaging smallholder farmers in a coordinated manner. It also provides smallholder farmers with a structured mechanism to integrate their input, needs and aspirations into the planning process.

The following pages detail the progress made in introducing the ACC Initiative in the initial wave of clusters that are part of the ATA-supported pilots in the initial years of GTP II.
Amhara Region

Regional Overview

The Amhara region is clustered into 16 ACCs across 128 woredas, of which six clusters have been identified to receive ATA support as part of the first wave of the pilot project. These six clusters include seven primary commodities (sesame, wheat, malt barley, tef, horticulture, honey, and dairy). Significant work has begun in four of the commodity clusters (sesame, wheat, malt barley, and tef) whereas strategies and interventions for the remaining commodities are expected to launch in late 2016. Outside of the work led by the ATA for these clusters, the regional government is utilizing the cluster approach across the region.

In addition to the main approaches for increasing production and productivity through full package scale-up and ITV, Amhara region clusters are integrating their activities with other Transformation Agenda Deliverables to enhance their impact. Joint efforts underway in Amhara include the IVS for increased access to input loans, the DSM modality, the IVR / SMS hotline, and linkages with the Tef International Market Access (TIMA) initiative. A Regional Transformation Council, chaired by the Regional President, has been established to help guide and evaluate this work. Additionally, value chain alliances (VCAs) have been established at the cluster level and are serving as important platforms to engage and enable joint problem-solving between relevant stakeholders. Successful and sustainable market linkages are emerging for focus commodities, notably WFP’s purchase of maize and the supply of malt barley to Gondar Malt Factory.

Clusters

SESAME

This cluster includes North Gondar and Awi zones covering 1.7 million hectares over six woredas, 134 kebeles, and 93,080 farmers. Sesame is the most important crop in the area, cultivated over 175,770 hectares and amounting to 40% of the national production of the crop. Sesame is grown mostly for export, with 98% of the crop marketed through ECX while only 2% is sold directly to end markets.

The cluster has the vision to generate annual revenues of 361 million USD by 2020 through 352 million USD in export sales of sesame grain, hulled sesame, and tahini to the Middle East, North Africa, and Far East markets (processed 100% within the cluster), as well as six million USD of domestic sales of whole sesame, sesame grain, tahini, and feed by-products. Annual targets for this cluster include increasing usage of improved inputs by over 750%, marketed surplus by more than 80%, and decreasing post-harvest losses by 50% by 2020.

At present, the vast majority of sesame sold from this area is exported in raw form, but the goal is to increase agro-processing capacity by 115% within the same time period. Other issues in the cluster that must be
addressed include poor agronomic practices by farmers due to limited access to extension services; low availability of working capital for pre-financing for input delivery, product aggregation, transport and marketing by cooperatives; high labor costs for crop production; and limitations in accessing finance for operational expenses.

A number of interventions have been designed as solutions to the above-stated bottlenecks that include expanding the reach and capacity of MFIs and RuSACCOs for increased financing; enhancing the extension package and expanding its reach throughout the cluster; scaling up cooperatives’ value-addition activities and bolstering their marketing capacity; and providing incentives to improve mechanized service provision to smallholders.

**MAIZE**

The maize cluster in Amhara encompasses West Gojam, South Gondar and Awi zones, across 10 woredas and 240 kebeles, reaching 286,728 farmers. This area produces 17% of the nation’s maize (which is the most important crop in the cluster) with production and revenue both being double that of the next most important crop, tef.

The vision for this cluster is to generate annual revenues of 81 million USD by 2020 through domestic sales of maize grain, flour, feed, and processed cereals and snacks, including substituting imports of maize products of nine million USD. Ninety percent of the products are to be processed in the cluster and 10% through contractual agreements with processors in Bahir Dar.

Some targets set for this cluster include increasing farmers’ use of improved inputs by 60%, expanding agro-processing capacity by 67%, and increasing the amount of maize marketed by 91%. Doing so, naturally, requires addressing systemic bottlenecks facing the cluster. Among the interventions planned in this regard are to strengthen the capacity of the public sector in seed inspection and certification; improve the rates of adoption of the recommended farming package through training of DAs and experts and carrying out demonstrations; and strengthen linkages with large scale maize buyers like the Strategic Food Reserve Association and the Ethiopian Grain Trade Enterprise (EGTE).

**BREAD WHEAT**

Encompassing 862,889 hectares of the West Gojam and East Gojam zones, the bread wheat cluster covers nine woredas and reaches 286,728 farmers. The cluster currently produces 3% of the country’s bread wheat (amounting to 1.2 million quintals) by 37% of the cluster’s farmers. Only 20% of the wheat grown in this area is currently marketed, and the role of primary cooperatives and unions in output marketing remains low at about 12%. Potential exists for value addition, however, as the cluster is already home to 24 agro-processing plants, and there are plans to establish an Agro-Industrial Park within Bure woreda.

It is anticipated that 19 million USD can be generated in annual revenues by 2020 through domestic sales of bread wheat grain, flour, and bread. This includes substituting imports of bread wheat products amounting to four million USD, with all product processing taking place within the cluster. Future efforts will introduce contract farming and cooperative-based seed production. Locally-specific wheat varieties will also be promoted in target areas. Among others, the cluster targets increasing the use of improved inputs by 60%, the amount of wheat marketed by 74%, and the number of non-farming jobs by 96% within the same time frame.

Primary bottlenecks facing this cluster are the insufficient supply of improved wheat seed that is rust resistant, and relatedly, the spread of wheat rust disease resulting from the absence of an early warning system, as well as an ineffective system of demand assessment for seed and fertilizer that leads to mismatched supply.

To address these (and other) bottlenecks, a number of interventions are already underway, such as building the capacity of research institutions to increase the supply of breeder seed and that of cooperative-based seed producers to provide certified seed. Site-specific fertilizer recommendations are being made to meet farmer’s demand, while ICT based systems are being developed to assist with tracking input delivery and establish an early warning system for wheat rust.
TEF

Twelve woredas and 331 kebeles in the East and West Gojam zones of Amhara are dedicated to the tef cluster, which covers 100,278 hectares and reaches 212,461 farmers. Presently, 4.2 million quintals of tef, or 9% of national production, comes from this cluster, 56% of which is consumed in farmer households while 44% is marketed. Traders play the predominant role in marketing tef from this area, with three farmer unions (Merkeb, Motta and Ghion) playing a secondary role.

By 2020, the cluster aims to generate annual revenues of 99 million USD. Of this total, 677,000 USD will be earned through tef export to the US and Western Europe, with 90% of the products being processed within the cluster and 10% through contractual agreements with processors in Addis Ababa. A further 59 million USD will be earned through domestic sales of tef grain, flour, and injera. These additional revenue streams are expected to increase total revenue by 61%, while a growth of 83% is intended for the amount of tef marketed and a growth of 148% for the amount of processed tef marketed.

Achieving the above stated targets requires addressing the major challenges currently facing the cluster. Among these are lack of effective farm implements and machinery specific and relevant to tef production; poor agronomic practices of farmers (inappropriate seeding rates, planting techniques, use of crop protection technologies, etc.); and high default rates on contract farming agreements due to the absence of enforcement mechanisms.

MALT BARLEY

The malt barley cluster covers six woredas and 32 kebeles of the North Shewa zone, engaging 42,220 farmers. In addition to barley, sorghum, tef, and wheat are also grown extensively in the area. The Gondar Malt Factory, one of only two malting factories in Ethiopia, sources barley from this cluster, but the supply does not fully satisfy the demand of breweries.

The vision for this cluster is to generate annual revenues of 16 million USD by 2020 through domestic sales of malt barley grain, malt, and beer in the country. Malt barley import substitution will account for two million USD of this total, with 50% product processing within the cluster and 50% through contractual agreements with processors in Gondar. A number of targets have been set for the same five year period to aid this cluster in achieving its vision: increasing the amount of marketed malt barley by 164%, agro-processing capacity by 140%, total revenue by 84%, and ultimately raising annual farmers’ incomes by 138%.

The low level of domestic malting capacity is a challenge for this cluster, as are limited access to extension services and the inefficient distribution system for agro-chemicals, to name just a few. Attempts to address these obstacles include expanding malting capacity through greenfield investments, improving farmers’ agronomic practices through wider delivery of extension services, and ensuring that balanced fertilizers are available to smallholders in the cluster.

**Key Progress**

Considerable progress has been made in reaching farmers with the inputs and training needed to increase production and productivity across all pilot clusters. Integration with Transformation Agenda Deliverables and Sub-deliverables have yielded positive results.

In the sesame, maize, bread wheat, and tef clusters, the IVS system has supported the effort by granting over 4.5 million USD worth of input credit to smallholder farmers.

In the maize cluster led by the regional government, 217 experts were trained on the basic principles of the DSM modality, and 234 marketing agents were trained on the business quality and quarantine aspects of seed sales. DSM is intended to be active in 27 woredas.

Training on tef agronomic best practices has been conducted in Debre Markos as part of the linkage with the TIMA project.

An IVR / SMS system has been introduced in three bread wheat woredas to help farmers access agronomic best practices information via mobile phones.

Market linkages have been created with a number of institutions through the CBM initiative, which has facilitated capacity building and technical support provision to five FCUs, and the purchase of a combined 40,672 quintals of grain from these unions.
Additionally, five unions have delivered 47,700 quintals of maize grain to WFP through contractual agreement. Ghion Union has delivered 8,524 quintals of tef grain to universities.

Five more unions and 25 PCs have delivered 47,973 quintals of malt barley grain to the Gondar Malt Factory. The regional and federal food security offices also purchased 7,941 quintals of maize and 71,606 quintals of wheat from unions.

**Challenges**

During the first year of ACC implementation, the sesame commodity proved to be the most challenging. Among the obstacles faced were international price failure (which also affected bread wheat); the absence of processing plants and financing for inputs, operations, and output marketing; and a lack of mechanization services.

Fertilizer-related problems affected the maize scale-up and ITV, which suffered from the untimely delivery of urea. Shortage of improved seed was a challenge for the bread wheat cluster, where farmers resorted to using their own uncertified seed. Meanwhile, the untimely delivery of malt barley seed affected both that cluster and overall scale-up and ITV.

Overall, the biggest challenge faced by all commodities has been the lack of mechanization to increase efficiency and production and decrease post-harvest loss, thereby hampering the improvement of the farming system throughout the value chain.
Eleven woredas and 401 kebeles covering 103,350 hectares constitute the maize cluster in Oromia, which is located in Horro Guduru Wellega, East Wellega, and West Shewa zones. In total, 111,666 farmers are reached through this initiative. Maize is the most important crop in the cluster, with 22% of the cultivated area being dedicated to crops and production accounting for more than 15% of the nation’s output of the crop.

The vision for the cluster is to generate annual revenues of 59 million USD by 2020 through domestic sales of maize grain, flour, feed, processed cereals and snacks. This includes import substitution of maize products worth nine million USD, with 100% in-cluster product processing. Other targets that have been set are an increase of 129% in the marketed amount of maize, a growth of 50% in the cluster’s agro-processing capacity, and an improvement in farmers’ use of recommended inputs of 125%.

To meet these targets, a number of interventions have been initiated by the ATA and partner organizations. Strengthening the use of contract farming arrangements is one such intervention, as is investing in capacity building of cooperative storage facility staff in storage and aggregation techniques. Finally, other Transformation
Agenda Deliverables, such as the Commercial Farm Services project and the DSM modality will be leveraged to help farmers better access vital inputs.

**MALT BARLEY**

The malt barley cluster in Oromia encompasses Arsi and West Arsi zones, covering 15 woredas, 79,273 farmers, and 30,347 hectares. Malt barley is the second largest cereal crop in the cluster (after wheat) and makes up a massive 65% of national production. The majority of malt barley produced in the area is supplied to Asela Malt Factory (AMF), the primary malting factory in Ethiopia. Although AMF already has a 70% share of the domestic malting market and its operations have tripled in recent years, it is as yet incapable of meeting the demand of breweries.

The strategic driver for this cluster is to exploit the opportunity for import substitution of malt barley in order to satisfy the growing demand of the beer industry (marketable surplus of malt barley for agro-industries is currently low). In addition to the needs of AMF, major brewers Diageo and Heineken are seeking to boost local barley production with the eventual aim to source domestically 100% and 60% of raw materials respectively within two years.

As such, the cluster envisions generating annual revenues of 81 million USD by 2020, through domestic sales of malt barley grain, malt, and beer in the country. Import substitution of malt barley products are estimated at 43 million USD, with 50% processing happening within the cluster and 50% through contractual agreements with processors in Addis Ababa and surrounding cities.

Increasing farmers’ use of improved inputs is therefore critical to this endeavor, with targets set at an increase of nearly 400% within five years. This is expected to contribute to increases of 24% in the average yield per hectare and 165% in the amount of marketed barley. Ultimately, this will lead to a growth in total revenue of over 450%. To realize the full potential of the cluster, priority interventions already under implementation include building agro-processing capacity; ensuring steady supply of farming inputs; and strengthening the contract farming framework and enforcement mechanisms for agreements between farmers and malting factories.

**BREAD WHEAT**

The Arsi and West Arsi zones are also home to the bread wheat cluster, as is the Bale zone. Overall, 22 woredas, 520,777 farmers and 308,846 hectares of land make up this cluster. The combined production of these three zones accounts for 32% of bread wheat grown in Ethiopia, of which only 20% is marketed. There are plans to increase this amount by 150% while also reducing post-harvest losses by 43%, thereby helping farmers to raise their income by at least 200%.

In addition to playing a vital role in raw bread wheat import substitution, the goal for the cluster is to source bread wheat for agro-industries by increasing local production and productivity. An estimated 221 million USD is expected to be generated by this cluster by 2020 through domestic sales of bread wheat grain, biscuits and crackers, flour, and bread. Import substitution, on the other hand, is expected to generate 18 million USD, with clusters undertaking between 20% and 100% of product processing.

In order to achieve the goals set out for this cluster, a number of interventions have been designed to remove the current bottlenecks. Greater input financing will be made available to smallholder farmers, especially women, who typically have even more restricted access. On the other side of the equation, cooperatives will also be assisted with output financing to enhance their crop aggregation and marketing capabilities. Stronger linkages are being built between suppliers and flour factories to stabilize the supply of wheat, and cooperatives are receiving training to improve their organizational, financial, and supply chain management.

**DURUM WHEAT**

Seven woredas in the Bale zone make up the durum wheat cluster, which covers 17,500 hectares and reaches 79,273 farmers. In contrast to many parts of Ethiopia in which farmers produce crops for subsistence, an impressive 96% of the wheat cultivated here is also marketed. The role of cooperatives and unions in marketing, however, is a paltry 12%, and the cluster is limited in wheat processing capacity.
Supplying durum wheat for agro-industries is a strategic driver for the cluster, as is durum wheat import substitution. Within five years, this cluster envisions generating annual revenues of 16 million USD through domestic sales of durum wheat grain and pasta, including substituting imports of durum wheat products worth seven million USD. Twenty percent product processing will take place within the cluster and 80% through contractual agreements with processors in Addis Ababa.

Among the targets set to help achieve the above vision is to increase usage of improved inputs leading to a growth of 45% in average yield per hectare. Critical to encouraging farmers to use improved inputs is providing credit access, which is currently being facilitated through the IVS. Linkages between cooperative unions and large-scale buyers are also being promoted to encourage increased commercialization of locally produced wheat.

The tef cluster in Oromia encompasses West Shewa, East Shewa, South West Shewa and Special Zones covering 200,192 hectares over 15 woredas. Approximately 72% of farmers in this area are engaged in tef production. Slightly more than half (52%) of tef grown is marketed, primarily through traders, but also through six major unions to a smaller degree.

The tef cluster aims to seize the opportunity to market surplus, value-added tef to domestic and export markets. Annual revenues of 127 million USD are expected by 2020 through domestic sales of tef grain, tef flour, and injera. An additional 2.5 million USD will be gained from export of tef grain to the United States and Western Europe, with 90% product processing.
happening within the cluster and 10% through contractual agreements with processors in Addis Ababa.

Through the activities being implemented, the cluster aims to achieve an increase of 168% in the domestic revenue of processed tef products, reduce post-harvest losses by 42%, and raise farmers’ incomes by 82%. The achievement of these goals depends on successfully addressing some of the challenges facing the cluster. Efforts in this regard include building the capacity of research institutions to expand their supply of early generation seed currently in short supply; improve farmers’ agronomic practices through trainings of woreda professionals and DAs and piloting successful interventions; and providing incentives and technical support to agri-businesses on processing and value addition.

Key progress

Full package scale-up is being implemented on tef, malt barley, and bread wheat. These efforts have been supported by capacity building of regional and zonal experts and farmers.

Work has been undertaken to integrate initiatives with other Transformation Agenda supported activities. In tef planting clusters, the complete package of row planting is being promoted along with planting of chickpea as a rotational commodity for double cropping. Meanwhile, the formal seed supply system is being supported by the DSM modality in all scale up woredas. Awareness raising workshops were organized for relevant organizations on input credit modalities, including zonal and woreda Bureaus of Agriculture and Natural Resources (BoANRI), RCPAs, and Oromia Credit and Savings Share Company (OCSSCO). Input credit in the amount of three million USD was made available to farmers in the cluster through the IVS.

In terms of creating market linkages, unions in the cluster supplied 813,773 quintals of bread wheat to EGTE, and 71,000 quintals to unions with agro-processing activities. Additionally, clusters supplied 262,000 quintals of durum wheat to agro-industries, and 442,725 quintals of malt barley, which will enable AMF to source all of its needs domestically and eliminate imports this year.

Moreover, five unions have delivered 86,483 quintals of maize grain to WFP and other buyers through contractual agreements, and another five unions delivered 42,679 quintals of tef grain to Mama Injera and Consumer Association in Addis Ababa. Through CBM, four unions worked with 72 primary cooperatives to source 290,000 metric tons of coffee, 1.16 million liters of milk, and 168,347 quintals of wheat and barley worth over two million ETB.

Challenges

The malt barley and bread wheat clusters faced numerous obstacles in 2016: limited input credit access, lack of a farmer-friendly and affordable row planters, and inefficiencies in cooperatives’ output marketing.

In addition, highly demanded malt barley seed varieties were in short supply and there were problems in coming to contractual agreements between AMF and breweries for barley malting. On the other hand, in the bread wheat cluster, farmers were continuing to use seed varieties that are susceptible to disease, largely because of the difference between the cost of improved seed and the profit on marketed grain. Lack of storage facilities and other logistical issues limited the capacity of EGTE to collect wheat in volume. Overall wheat price declines and the limited interest shown by agro-industries to engage in contract-based agreements with the unions were other challenges faced by this cluster.

Credit access and the need for row planters proved to be challenges for the durum wheat and tef clusters as well. Moreover, the tef and maize clusters also found cooperatives’ output marketing limitations to be problematic, while maize was additionally challenged by the tendency of unions to conduct business on a case-by-case basis rather than in a sustainable manner. Durum wheat in particular was limited by the fact that high-yielding seed varieties had not been sufficiently popularized among farmers.

In terms of full package scale-up, untimely fertilizer supply, shortage of tractor-mounted row planters, and heavy rain at planting time were the main challenges, as was the reluctance of farmers to take out input loans from OCSSCO due to the complexity of the process.
Regional Overview

The first phase of the ACC Initiative in the SNNP region includes six clusters with five primary and four secondary commodities prioritized for GTP II. In 2016, however, only four commodities, bread wheat, tef, apiculture, and haricot bean, have been initiated. A number of activities are underway in these clusters with the goal of increasing production and productivity, as well as creating market linkages for the end products. Major initiatives implemented in the clusters include ensuring timely and quality input delivery, awareness creation through full package scale-up, as well as establishment of VCAs, market linkages, and contract farming.

The SNNP Regional Transformation Council, chaired by the Regional President, has been established, with members emphasizing in their review of ACC efforts the need to strengthen coordination and integration among various stakeholders – the regional BoANR, the ATA, and regional actors. This will involve capacity building and increasing awareness of cluster-based initiatives and highlighting their integration with other Transformation Agenda Deliverables, like the shallow ground water mapping project and the work to improve the region’s soil health and fertility.

Wheat and haricot bean VCA platforms have also actively clarified the roles and responsibilities of each participating actor. The groups have jointly developed a viable contract farming modality and informed farmers of the level of quality required by buyers and processors. The alliances are now executing more strongly on real-time problem-solving and escalating issues to regional and federal levels as required.

Clusters

BREAD WHEAT

The bread wheat cluster in the SNNP region encompasses Silte, Hadiya, Kembata Tembaro, and Gurage zones. It includes 18 high-potential woredas, covering 110,332 hectares and reaching 249,559 farmers. Wheat cultivation represents a considerable amount of activity in this area – 16% of the total land in the cluster is cultivated with bread wheat, and 8% of the country’s production of the crop comes from here. Unlike many parts of the country where there is little surplus crop for sale, 54% of the wheat produced from this cluster is marketed and 46% is consumed at home.

This cluster aims to generate annual revenues of 108 million USD by 2020 through domestic sales of bread wheat grain, biscuits and crackers, flour, bread, and feed, as well as substituting imports of bread wheat products worth 23 million USD. Within the cluster, 90% of product processing will take place, with the remaining 10% being handled through contractual agreements with processors in Hawassa. Achieving this vision
Although haricot bean is a top earner of foreign exchange for Ethiopia, exports of the crop are dominated by illegal trading, which can account for up to 70% of production that leaves the country. Implementing stronger control mechanisms to reduce the rate of illegal trade is a priority for the cluster, as is simultaneously establishing a comprehensive Market Information System that can mitigate illegal cross-border trade as well as eliminate market chain inefficiencies and price volatility.

The Commercial Farm Services project and DSM modality are also being leveraged to provide quality agricultural inputs to farmers in an accessible manner, while other activities have been undertaken to improve farmers’ agronomic practices to enhance production and productivity.

**TEF**

Activities in the tef cluster of SNNP have not been initiated yet, but are planned for implementation in the Hadiya, Siltie, Gurage, and Kembata Tembaro zones. This area covers 692,870 hectares and is home to 307,586 smallholder farmers. Approximately 8% of the total land in the cluster is cultivated by tef, which is grown by 72% of the farmers in the area. Traders, and to a lesser degree cooperatives, market 40% of the tef grown while 60% is consumed in the household. Besides tef, the cluster also produces wheat, potatoes, and livestock products.

The vision for this cluster is to generate annual revenues of 18 million USD by 2020 through 17 million USD in domestic sales of tef grain, flour and injera, and 812,000 USD in export sales of tef grain to the United States and Western Europe, with 100% product processing within the cluster. Targets set for the cluster include – among others – increasing the usage of improved inputs by 321% and the marketed amount of tef by 70%, while the growth in activity overall is expected to lead to a 316% rise in non-farming related jobs in the area.

Strategic interventions planned toward this end are to expand tef processing and value addition by providing incentives and support to agri-businesses; revising the extension package to enable DAs to transfer better agronomic information to farmers; and ensuring the availability and increasing farmers’ awareness of credit to aid with the adoption of improved inputs.
The apiculture cluster has also not begun activities in 2016. Once initiated, the work will cover two million hectares of the Kafa, Sheka, and Bench Maji zones. The cluster is endowed with natural tropical rain forests, so forest beekeeping is widely practiced in the area. There are an estimated 148,000 beekeepers whose primary products are honey and beeswax. The other dominant agricultural activity in the cluster is the cultivation of tea, coffee, and spices.

The vision for the cluster is to generate revenues of 26 million USD by 2020 through domestic and export sales of honey, and export sales of industrial, mass, and premium table honey packaged in bulk. This figure represents a 109% increase in the current revenue stream. Additionally, a growth of 305% is targeted for the improved usage of hives (93% of which are currently traditional) and a growth of 40% in the average yield per hive.

Achieving these ambitious targets necessitates the coordinated implementation of strategic interventions including, but not limited to, incubating local groups to provide beekeeping inputs (hives, honey extractors, bee colonies, etc.); enhancing the execution of related policies on quality grading; and creating a cost sharing system among unions, cooperatives, and development partners to construct warehouses.

**Key Progress**

Full package scale-up has been carried out in four woredas, and farmers and experts alike have been capacitated on pertinent agronomic best practices.
The Regional Bureau of Trade has taken full ownership of leading market linkages and contract farming activities for the bread wheat cluster, in which producers are planning to provide 300,000 quintals of wheat to the market at the end of the 2016 planting season. In terms of haricot bean, producer unions and financial institutions have been linked to facilitate output finance. Through this arrangement, for example, Addis International Bank is providing 636,983 USD to the Damota Wolaita Cooperative Union.

For both clusters, VCA meetings were conducted, and guidelines were prepared and distributed to participants. These meetings assisted in clarifying the roles and responsibilities of stakeholders; design of viable contract farming arrangements; and awareness creation among experts and farmers on the quality of produce and varieties demanded on the market.

### Challenges

Inadequate provision of improved seed, lack of finance for output marketing, lack of awareness on contract farming and limited storage capacity of primary cooperatives and unions all presented challenges for the haricot bean cluster. The bread wheat cluster was similarly affected by the limited availability of inputs, in this case coupled with some resistance of farmers to utilize recommended inputs correctly. The absence of a common understanding on the recommended input package for bread wheat resulted in insufficient commitment in some areas.

Regarding full package scale-up, delayed supply and distribution of inputs (seed, fertilizer, and agro-chemicals) led to a delay in orienting the concerned bodies in the Gurage zone to activities underway. Additional obstacles arose in the form of insufficient field management and disease control during certain demonstrations, limited commitment and follow-up of DAs, and heavy rain in the Belg season (short March rains) causing floods on some demonstration sites.

~1.3 million ~3 million

| target farmers in ACCs | hectares targeted in ACCs |
Regional Overview

The initial phase of the ACC Initiative in the Tigray region includes four major commodity clusters (wheat, tef, sesame, and horticulture) and three livestock sub-clusters (beef, honey, and dairy) for implementation during GTP II. In 2016, the regional BoANR and the ATA have focused on the crop commodities, in particular wheat, sesame, and tef, to improve their production and productivity and establish sustainable market linkages. Moreover, the region has worked intensively on the application of the full recommended research package in 27 woredas and 108 kebeles, to be expanded to all ACC woredas in the coming few years.

The Regional Transformation Council, chaired by the Regional President, has agreed to focus on a number of future initiatives. These include developing an improved seed development, multiplication, and distribution system (especially for the Tigray RARI and the Inputs department of the regional BoANR); encouraging more contract farming agreements for wheat grain; and enhancing market infrastructure, particularly to establish a vegetable Sunday market in Mekele. In addition, commodity specific VCAs were established for the wheat, tef, and sesame clusters.

Clusters

BREAD WHEAT

This cluster lies in 13 woredas of the Eastern, Southern and South Eastern zones of Tigray. It encompasses 101,630 hectares and benefits 210,322 households. The 92,923 hectares of land cultivated by wheat in this cluster are responsible for 13% of the country’s total wheat production. Only 47% of the bread wheat grown here is marketed, primarily by private aggregators and suppliers, while primary cooperatives play a minor role (12%) in marketing.

With an expected wheat productivity of 30 quintals per hectare, a harvest of approximately 3.1 million quintals can be achieved in each cropping season. This represents an increase of 25% in average yield per hectare, one of the targets set by this cluster for GTP II. Other targets include increasing domestic revenue from processed wheat products by 119%, raising farmers’ annual income by 60%, and decreasing post-harvest losses by 36%.
The vision for this cluster is to generate annual revenues of 63 million USD by 2020 through domestic sales of bread wheat grain, biscuits and crackers, flour, feed and bread. Substituting imports of bread wheat products alone will earn 13 million USD. All product processing will be handled within the cluster.

Despite the high number of wheat processors in the region – 54 are located in Mekelle alone – there are poor links between primary cooperatives, unions, and processors. Activities around creating market linkages and VCAs are attempting to address this issue. Additionally, ineffective demand assessment for seed, fertilizer; lack of control of wheat rust; and the limited capacity of cooperatives in aggregation, transport, and marketing all pose challenges for this cluster. Attempts are underway to expand the role of cooperatives in output marketing by providing greater access to financing, as well as to develop an ICT-based wheat rust early warning system and demand assessment mechanism for farming inputs.

A number of ambitious targets have been set for this cluster in order to turn it into an agro-processing hub for sesame products. Among these targets are plans to quadruple the agro-processing capacity through the establishment of an Agro-Industrial Park in Kafta Humera woreda. At present, the majority of sesame is exported in raw, cleaned form, but this development could greatly increase the amount of sesame products exported, as well as increase domestic revenue from processed products by 239%, and contribute to increasing the number of non-farming jobs by 705%.

In addition to limited agro-processing capacity, the cluster currently faces other challenges in the form of poor agronomic, harvest and post-harvest practices of farmers, and high labor costs for the production of sesame. Providing incentives to mechanized service providers is expected to reduce farmers' labor costs for production and simultaneously boost their efficiency, at the same time that expanding the extension service package should improve their farming practices.

SESAME

The sesame cluster is composed of 323,430 hectares over four woredas in the Western and North Western Tigray zones. Approximately 88% of farmers are engaged in sesame farming in the cluster, the largest sesame producing area in the country accounting for 41% of national production. Sesame grown here is primarily for export, with ECX trading 98% of exported sesame.

The five-year vision for this cluster is to generate annual revenues of 555 million USD by 2020 through 41 million USD in domestic sales of sesame grain, oil, tahini and feed, and 496 million USD through export of grain and hulled sesame in the Middle East, North Africa, Turkey and China. The cluster will process 85% of the products and the remaining 15% will be processed through contractual arrangements with processors in Addis Ababa.

TEF

The Central and Northwestern zones in Tigray are dedicated to tef production. Ten woredas and 55,921 hectares cultivated by 114,159 households make up this cluster. Tef is the most important crop in the cluster, with 10% higher production than the next most important crop, sorghum.

Within five years, this cluster is envisioned to generate annual revenues of 19 million USD through 17 million USD in domestic sales of tef grain, flour, and injera, and 1.7 million USD through export of tef grain to the United States and Western Europe. All product processing will take place within the cluster.

Similar to the sesame cluster, the Agro-Industrial Park planned to be situated in Kafta Humera woreda should considerably enhance the processing capacity of the current 30 agro-processing plants in the area, the
The Tef, Improved seed, Reduced rate, Row planting (TIRR) package has already been actively implemented in this area since 2011, and is expected to contribute to the planned increase in average yield per hectare of 23%, as well as encouraging the usage of improved inputs planned to increase by 100% in five years.

Nonetheless, certain bottlenecks must be addressed to help the cluster achieve its full potential and vision.

Some interventions already underway to address such bottlenecks include implementing a tef strategy that also identifies secure markets; providing incentives and technical support to agri-businesses on processing and value addition; ensuring that farmers are aware of the availability of credit through IVS; and training farmers, woreda professionals, and DAs on improved agronomic, harvest, and post-harvest practices.
Key Progress

Considerable work was carried out in terms of full package scale-up, as well as capacity building of agricultural experts and DAs. Trainings were complemented by an instructional video distributed to the 27 woredas. Although challenges remain in this area, cropping activities in some areas are taking place through mechanization: five woredas in the wheat cluster and two in the tef cluster have now introduced tiller tractors.

Furthermore, smallholders were encouraged to access additional agronomic information via the IVR / SMS hotline. At the time of reporting, 38,241 farmers from all clusters had registered to access the system. Farmers are also actively using the IVS system to obtain inputs using cash or credit vouchers.

Market linkages and VCAs have been strengthened in all three clusters. Four primary cooperatives entered into contract agreements with Selit and Dipasa sesame hulling clusters for the purchase of 24,000 quintals of the grain. In the coming year, the two companies have agreed to buy 70,000 quintals of sesame from six cooperatives. Similarly, cooperative unions in the wheat cluster have committed to supplying an equivalent amount of grain to flour factories. The wheat VCA is following up on implementation of this contract and undertaking resolution of any challenges that may arise in the process. Furthermore, efforts were initiated to bring together tef suppliers and buyers through contract farming agreements amounting to 60,000 quintals. A tef VCA has been established to follow up the process and provide guidance, since the cluster is still in an infant stage.

Challenges

The sesame cluster is still feeling the residual effects of last year’s drought, which has led farmers to lose interest in using the full package, since the resulting inadequate soil moisture prevented them from seeing meaningful results in their crops. Farmers in this cluster also requested more access to input credit given the positive results of the IVS thus far.

Meanwhile, trainings in the tef cluster were not delivered as extensively as in the other clusters, which raises the concern that farmers may not take up all of the recommended inputs. In the wheat cluster as well, especially in the Western zone, input use was below the recommended amounts.

The primary changes in implementing full package scale-up were inadequate quantities of seed varieties, limited availability of row planters, and farmers’ limited awareness of agro-chemicals. Insufficient access to input credit also hindered farmers from implementing the full package in some areas.

~712,000 target farmers in ACCs

~4.5 million hectares targeted in ACCs
RISKS AND MITIGATIONS
In delivering against the ambitious goals of the Transformation Agenda, implementing partners and the ATA face a number of collective challenges that, if not resolved, pose real risks to the pace of agricultural transformation in Ethiopia. Overall, five major issues stand out as the most critical.

**Identifying and focusing on the right set of interventions**

First and foremost, it is critical that the Transformation Agenda Deliverables and Sub-deliverables be strategic and stay focused on the most critical issues constraining the agriculture sector. Given the size and volume of issues in Ethiopia’s agriculture sector, it is easy for actors to get caught up in the myriad very real day-to-day challenges that must be addressed. Not only can this distract from the attention required to truly transform the sector, it can also inadvertently shape the design of the Transformation Agenda if actors are not vigilant about ensuring that the interventions identified are focused on systemic issues.

The scope of interventions must also be realistic and defined narrowly to ensure that tangible progress is possible. In this, the ATA and Transformation Agenda partners are routinely challenged to find the right balance between identifying Deliverables and Sub-deliverables that are achievable and, at the same time, transformational. In keeping the focus on long-term transformation, stakeholders must also recognize that it is important to achieve quick and tangible results in order to build momentum and ensure commitment to the longer-term goals that may take years to achieve. As such, there needs to be a balance between focusing on interventions that will show immediate results and those that can lead to long-term change. It is also important to find the balance between taking on enough interventions to truly transform the sector and avoiding the trap of trying to do too many things.

**Providing sufficient focus on Transformation Agenda activities**

The success of the Transformation Agenda is very dependent on the level of commitment it receives from senior policymakers and other partners across the agriculture sector. Senior officials within the various ministries and agencies involved at federal and regional levels are ultimately responsible for ensuring that their staff prioritize Transformation Agenda Deliverables and Sub-deliverables relative to other day-to-day activities.

Unfortunately, the state of Ethiopia’s agriculture sector today involves many day-to-day and time sensitive activities that also require the time and energy of all partners in the sector. In many cases, these partners are already stretched too thin and have limited bandwidth to devote to new activities. However, key partners in the sector must also commit time and energy to the Transformation Agenda Deliverables.

Similar ongoing commitment and support is required of development actors, NGOs, and the private sector to guarantee that sufficient attention and resources are brought to bear in delivering the work of the Transformation Agenda. As evidenced from the experience of the past five years, the Transformation Agenda is able to move forward when partners demonstrate commitment and investment; where their commitment and investment is lacking, implementation risks faltering.

Most importantly, without the active oversight and drive at the highest level of stakeholders, the potential success of the Transformation Agenda will be compromised. There must be true appetite for transformation within the sector before change is able to happen.
Securing sufficient resources

All the commitment by stakeholders in the sector, however, will not be effective if actors are not able to identify and mobilize the requisite resources to execute prioritized Deliverables and Sub-deliverables. This includes the need to identify requisite human resources – expertise and skills that can be difficult to source in Ethiopia. It also includes the need to identify sufficient financial resources for stakeholders to deliver against their Transformation Agenda commitments.

While a range of funding mechanisms exist to support many elements of the Transformation Agenda – from the GoE’s budgetary commitments to large investments from bilateral and multi-lateral development partners – the alignment of these funding sources to Transformation Agenda Deliverables is not always clear. Furthermore, the Transformation Agenda competes for available resources with other agriculture interventions in the country, as well as with potential projects in other sectors and donor priorities in other countries.

The Transformation Agenda will also require investments from private sector partners who will compare opportunities in Ethiopia’s agriculture sector with those in other countries. Attracting investment from the private sector, as well as agreeing on how to allocate available funding from public sector and donor sources, are critical elements in ensuring that sufficient funding is available to enable actors to carry out activities as planned and required.

Mobilizing implementation capacity

Ultimately, the successful transformation of Ethiopia’s agriculture sector will rely on the ability of all relevant partners to execute on the agreed set of interventions. Similar to many developing countries, leveraging sufficient implementation capacity to facilitate rapid change is a challenge for Ethiopia’s agriculture sector. In particular, public sector partners from federal to local levels require a good deal of support and capacity building to undertake the many complex interventions required for transformation to occur. While a significant amount of investment has been made by government and development partners in this regard, much more still needs to be done.

One of the ATAs’ goals is to support this capacity building effort. However, the ATA alone will never be able to address the magnitude of the challenges. The ATAs approach to capacity building is narrowly targeted on three specific areas: 1) intensively support the capacity building of partners in the Sub-deliverables where the ATA is responsible for execution, 2) provide clearly defined capacity building efforts on a demand basis for Sub-deliverables where other partners a lead implementation, and 3) support the execution of a series of systemic capacity building Deliverables and Sub-deliverables in a dedicated Organizational & Human Resource Capacity program.

Most importantly, strengthening the execution capacity of public sector partners in the agriculture sector is carried out in parallel by other partners who are making larger investments and have greater levels of capacity building expertise than the ATA. While the ATA might be able to focus on some targeted areas, the challenges are too great for any one organization to to address individually. As such, a concerted effort is required by all relevant partners to work in a coordinated manner to raise the overall level of execution capacity in the sector.

Coordinating partners within agriculture and across other sectors

As highlighted elsewhere, learnings from the experience of GTP I indicate that, for the Transformation Agenda to be successful, the entire range of stakeholders involved must be clear on what is expected of them and how they align their various interventions. Where lead roles are not clearly articulated or understood, progress in program delivery is compromised. The entire project cycle, from planning to execution, must be appropriately coordinated for the Transformation Agenda to move forward.

In particular, coordination must focus on ensuring that proper linkages are made across the entire value chain, without which transformation is impossible. Where agricultural development within or between value chains is uneven or unlinked, it can have disastrous consequences. Ethiopia has experienced this first hand, with attempts at the turn of the century to increase maize production without corollary market linkages. This ultimately led to a bumper harvest but collapsed prices, hurting farmers who had taken out loans to buy improved inputs that they were then unable to repay. Coordination must also include an emphasis on crosscutting issues and monitoring and evaluation needs. Efforts must be aligned if they are to have the potential for long-term social and environmental sustainability. Clear metrics and accountability mechanisms must also be agreed for all actors to understand progress and make decisions on course-corrections or next steps.
Partners

The Agricultural Transformation Agenda works in partnership with a wide range of organizations in order to achieve its ambitious goals.

Foremost among these partners are public sector organizations who take the lead in providing implementation capacity, as well the regulatory and policy-making direction, to all partners in the sector. Public sector partners range from senior policymakers at the federal and regional levels all the way down to woreda and kebele officials. There are also a wide range of public sector organizations, in terms of scope – ranging from ministries and agencies to ATVETS and FTCs. The most important partners in the public sector are the DAs (extension workers) who work directly with smallholder farmers, introducing new technologies and supporting farmers to adopt the most appropriate ones for their current circumstances.

Development partners and NGOs / civil society organizations also play a vital role in the Transformation Agenda. In addition to providing critical thought partnership, these institutions help to identify international best practices and work with public sector partners to introduce them to the Ethiopian context. Their access to experiences in various countries allows Ethiopia to learn from others and avoid having to “reinvent the wheel.” In addition, NGOs / civil society organizations play an important role in supplementing the implementation capacity of public sector organizations in key parts of the agriculture sector.

Over the past five years, private sector partners have been expected to play an increasing role in the Transformation Agenda. This private sector participation will become even more critical in the years to come, as Ethiopian agriculture strives to move from a subsistence-based, low-input / low-output farming system, to one that is market-oriented and integrated into the global food system. This will ensure that interventions are executed more efficiently and become financially sustainable.

Most importantly, the main drivers of agricultural transformation in Ethiopia are the country’s smallholder farmers. The indigenous knowledge that exists with these farmers must be recognized and leveraged. At the same time, farmers must be engaged as true partners in evaluating and contextualizing any new technologies that are identified. As such, the Transformation Agenda prioritizes its deep engagement with smallholder farmers to ensure that the entire process serves their needs and aspirations.

251 Communications
Abay Bank PLC
ACOS Ethiopia
Adama Agricultural Machinery Industry
ADC Research and Development
Addis Ababa Chamber of Commerce and Sectorial Associations/Agro Business Support Facility
Addis Ababa University
Africa Partners GmbH
Information Service
African Development Bank (AfDB)
African Union & New Partnership for Africa’s Development
Agri Service Ethiopia
Agricultural Cooperative Development International and Volunteers in Overseas Cooperative Assistance (ACDI / VOCA)
Agricultural Growth Program (AGP)
Agricultural Input Supply Enterprise
Agricultural Mechanization Research Centers
Agricultural Technical and Vocational Education and Training (ATVET)
Agriterra
Allana Potash
Alema Koudijs Feed PLC
Alliance for Green Revolution in Africa (AGRA)
Altic Laboratory
Amhara Credit & Savings Institution (ACSI)
Amhara Seed Enterprise
Ammio Engineering
Anno Agro industry
Apposit LLC
AQUATEST
Assela Malt Factory
Association of Ethiopian Microfinance Institutions
Avallo Agro industry
Axum University
BahirDar University
Bavaria
Becho Wolliso FCU
BGI Ethiopia
Bill & Melinda Gates Foundation (BMGF)
Bio-economy Africa
Boortmalt
Canadian Coop Association
CARE
Central Statistical Agency (CSA)
Centre for Development Initiative
Chinese Academy of Agricultural Mechanization Sciences
Commercial Bank of Ethiopia (CBE)
Cooperative Bank of Oromia (CBO)
Crop Nutrition Services
Crossroads Africa
Cultivating New Frontiers in Agriculture (CNFA)
Consortium of Christian Relief and Development Associations (CCRDA)
Czech Development Agency
DAL Group
Danish International Development Agency (DANIDA)
Dashen Brewery
Dedebit Credit & Savings Institution
Debre Zeit Agricultural Research Center
Deloitte
Department of Foreign Affairs, Trade and Development - Canada (DFATD)
DGRV (German Coop Federation)
Diageo
Digital Green
DuPont Pioneer
Eastern Africa Agricultural Productivity Project
eCom Technologies
Embassy of Italy
EGGA – Agricultural Input Suppliers PLC
Enclude
Enderta Farmers Cooperation Union
Enjera Exporters
Environmental and Coffee Forest Forum (ECFF)
Ernest and Young
Errer FCU
Ethio Telecom
Ethio-Italy Durum Wheat Project
Ethiopia’s Agricultural Development Agents
Ethiopia’s Smallholder Farmers
Ethiopian Animal Feed Industry Association
Ethiopian Chamber of Commerce & Trade Associations
Ethiopian Commodity Exchange (ECX)
Ethiopian Conformity Assessment Enterprise
Ethiopian Fruit and Vegetable Marketing SC (ETFRUIT)
Ethiopian Geological Survey (EGS)
Ethiopian Grain Trade Enterprise (EGTE)
Ethiopian Institute of Agricultural Research (EIAR)
Ethiopian Miller Associations
Ethiopian Nutrition Institute
Ethiopian Pulses, Oilseeds and Spices Processors and Exporters Association
Ethiopian Seed Enterprise (ESE)
Ethiopian Seed Growers and Producers Association
Ethiopian Shipping and Logistics Service Enterprise
Ethiopian Soil Health Consortium Project
Ethiopian Standards Agency
EU-Cord / European Cooperative for Rural Development
Eurogerm - Ingredients & Solutions
European Union (EU)
Export Trading Group
Fana Broadcasting Corporate
Farm Radio
Farmer Cooperative Unions (FCU)
Federal Cooperative Agency (FCA)
Food and Agriculture Organization (FAO)
Gadissa Gobena Commercial Farm Products PLC
Gedeb Engineering
German Development Cooperation (GIZ)
Ghion FCU
Gibe Dedessa FCU
Global Agriculture and Food Security Programme
Global Water Initiative
Gonder Malt Factory
Guts Agro
Habesha Brewery
Haromaya University
Hawassa University
Healthcare Quality International
Heineken
Hi-Tech Trading House
Hilina Food Processing
Information Network Security Agency (INSA)
Institute for Sustainable Development (IDS)
Integrated Seed Sector Development Programme
International Center for Agricultural Research in Dry Areas
International Center for Insect Physiology and Ecology
International Crops Research Institute for the Semi-Arid Tropics
International Development Enterprise (iDE)
International Finance Corporation
International Fund for Agricultural Development (IFAD)
International Growth Center
International Institute of Tropical Agriculture
International Livestock Research Institute (ILRI)
International Maize & Wheat Improvement Center (CMMIYT)
International Potato Center
International Water Management Institute
Irish Aid
Israel Agency for International Development
Israel Chemicals Investor
Italian Development Cooperation
Kaleb Engineering
Kaleb Services Farmers’ House
Kaliti Food & Dire Dawa Food Complex
Kifiya
Korean Rural Community Corporation
Kotabe Metal Works
Lome Adama FCU
Maize Agro-Processors
Makobu Enterprises
Malteurop
Mama Fresh Injera Processing Company
Maskal Teff
Mawel International FZCO
MBI PLC, Rhizobium Production Company
Mekelle University
Melike Silte FCU
Menagesha Biotech PLC
Merkeb FCU
Metals & Engineering Corporation
Metti Group
Ministry of Agriculture and Natural Resources (MoANR)
  Animal Resources Development Sector
  Disaster Risk Management & Food Security
  Extension Directorate
  Input Marketing Directorate
  Natural Resource Management Directorate
  PH Regulatory Directorate
  Planning and Programming Directorate
  Small Scale Irrigation Directorate
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
N2 Africa (ILRI)
National Artificial Insemination Centre
National Bank of Ethiopia
National Meteorology Agency (NMA)
National Soil Testing Center
Nyala Insurance
OCP Foundation
Olam
Omo Microfinance Institution
One Acre Fund
Open Forum on Agricultural Biotechnology in Africa
Organization for Rehabilitation and Development in Amhara (ORDA)
Oromia Credit & Saving Share Company (OCSSC)
Oromia Seed Enterprise
Oxfam America
Pioneer Hi-bred Seed PLC
Radar Technologies International (RTI)
RED&FS Secretariat
Regional Agricultural Research Institutes
Regional Bureaus of Agriculture
Regional Bureaus of Finance and Economic Development
Regional Bureaus of Trade
Regional Cooperative Promotion Agencies
Regional Irrigation Development Authority/Irrigation Process
Regional Seed Enterprises
Relief Society of Tigray
Ries Engineering
Rochdale
Royal Netherland Embassy (RNE)
RuSACCO Union
Sasakawa Global 2000
SCOPE Insight
Self-Help Africa
Sesame Business Networks
Sintec Engineering
SNV (Netherlands Development Organization)
SpatialDev
Synergos Institute
Techno Mobile
TechnoServe
Techtra Engineering
Tsehay FCU
Tiger Brands
Tony Blair Foundation (AGI)
Toward Sustainable Clusters in Agribusiness through Learning in Entrepreneurship (2Scale)
Tufts University
U.S. Agency for International Development – Capacity to Improve Agriculture & Food Security (USAIDCIAFS)
U.S. Agency for International Development (USAID)
UK Cooperative College
United Nations Development Programme (UNDP)
UN Women
Veterinary Drugs and Feed Administration and Control Authority
Vision Microfinance
Wageningen University
Wolliso TVET
Wonta Rural Development Association (WORDA)
World Bank
World Food Programme (WFP)
World Vision
WU-Cascape
Yara
References


<table>
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<tr>
<th>ACRONYMS</th>
<th>Definition</th>
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<tbody>
<tr>
<td>AAU</td>
<td>Addis Ababa University</td>
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<tr>
<td>ACDI-VOCA</td>
<td>Agricultural Cooperative Development International and Volunteers in Overseas</td>
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<td>AWS</td>
<td>Automatic Weather Stations</td>
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<td>CBM</td>
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<td>CCB</td>
<td>Cooperative Capacity Building</td>
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<td>Cultivating New Frontiers in Agriculture</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>GENS</td>
<td>Groundwater Exploration and Navigation System</td>
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<td>Integrated Agro-Industrial Parks</td>
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<td>Information and Communication Technology</td>
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<td>IVR / SMS</td>
<td>Interactive Voice Response / Short Message System</td>
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