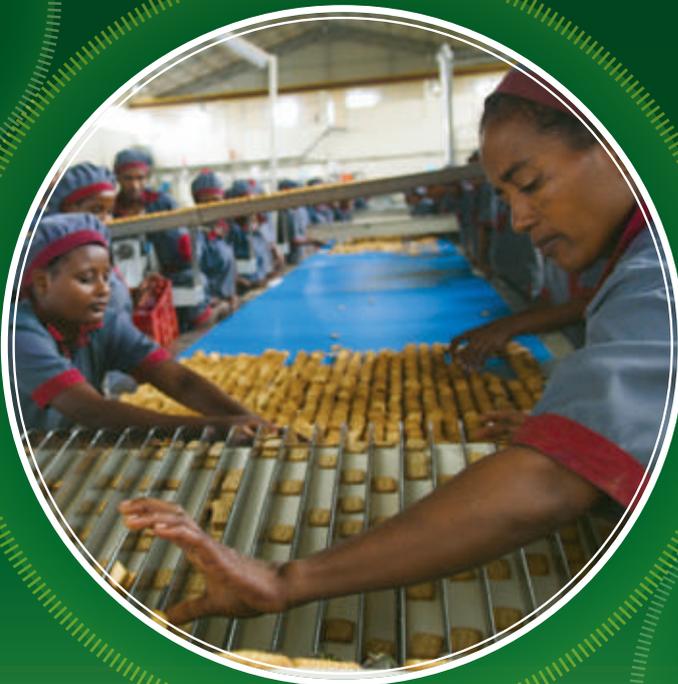




Food and Agriculture  
Organization of the  
United Nations



Strategic analysis and intervention plan for

# wheat and wheat products

in the Agro-Commodities Procurement Zone  
of the pilot Integrated Agro-Industrial Park in  
**Central-Eastern Oromia, Ethiopia**



**Project UNJP/ETH/092/UID**

Technical Support for the Implementation of  
an Integrated Agro-Industrial Park (IAIP)  
in Ethiopia

Strategic analysis and intervention plan  
for **wheat and wheat products**  
in the Agro-Commodities  
Procurement Zone of the pilot  
Integrated Agro-Industrial Park in  
**Central-Eastern Oromia, Ethiopia**



**Filippo Brasesco**

FAO Agribusiness Officer

**Desta Asgedom**

Senior National Value Chain Expert

**Valentina Sommacal**

International Gender/Value Chain Expert

**Giacomo Casari**

UN Fellow - Agribusiness

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Biscuits processing facility in Dukem (© FAO/Valentina Sommacal).

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# PREFACE

The present document is the third one of a series of detailed analyses of the selected commodities that will lead to inclusive, sustainable and stronger value chains in the Agro-Commodities Procurement Zone of Central-Eastern Oromia.

Since 1981, FAO has been a strong partner of the Government of Ethiopia towards the achievement of national food security and economic growth goals. Today, FAO assistance in Ethiopia centres on three priority areas: (i) Agricultural productivity and competitiveness; (ii) Sustainable natural resource development and management; and (iii) Improved food and nutrition security.

With the current Second Growth and Transformation Plan (2015–2020), the Government expects the agro-industrial sector to play key role in economic growth of the Country. Accordingly, the creation of Integrated Agro-Industrial Parks has been identified as one of the key mechanisms for accelerating the development of the sector and the structural transformation of agriculture. Agro-industrial parks will play a significant role in transitioning Ethiopia from an agricultural-led into an industrial-led economy.

In this context, the development of Integrated Agro-Industrial Parks has been prioritized in Ethiopia's national development strategy and four Agro-Industrial Growth Corridors have been selected for piloting the establishment of four Integrated Agro-Industrial Parks. The initiative aims at driving the structural transformation of the Ethiopian economy while reducing rural poverty and creating a better environment for increased investments in agro-processing and allied sectors.

As a key partner, FAO is working closely with the Ministry of Agriculture and Natural Resources and with the Ministry of Livestock and Fisheries to empower value chain actors and to promote inclusive, efficient and sustainable agricultural value chains. In 2009, FAO contributed to the finalization of the agro-industry strategy, which detailed the key aspects for agro-industrial development in Ethiopia. In 2014–15, support was provided to the completion of the four "Feasibility studies and business plan for integrated Agro-Commodities Procurement Zones and Integrated Agro-Industrial Parks".

The project UNJP/ETH/092/UID "Technical Support for the Implementation of an Integrated Agro-Industrial Park in Ethiopia" is a continuation of this work, with a specific focus on the establishment of the pilot Integrated Agro-Industrial Park in Oromia regional state.

Specifically, the project aims at promoting efficiency and competitiveness of selected agricultural value chains (Milk and dairy products, Live animals and red meat, Wheat and wheat products, Irish and sweet potato, and Fresh and industrial tomato) in order to ensure a reliable and timely supply of products from the Agro-Commodities Procurement Zone to the Integrated Agro-Industrial Park in the right quantity, quality and at a competitive price.

**Ms Fatouma Djama Seid**  
*FAO Representative in Ethiopia*

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# ACRONYMS

<b>ACPZ</b>	Agro-Commodities Procurement Zone
<b>ATA</b>	Ethiopian Agricultural Transformation Agency
<b>COMESA</b>	Common Market for Eastern and Southern Africa
<b>CSA</b>	Central Statistical Agency
<b>EGTE</b>	Ethiopian Grain Trade Enterprise
<b>ESE</b>	Ethiopian Seed Enterprise
<b>ETB</b>	Ethiopian birr
<b>FAO</b>	Food and Agriculture Organization of the United Nations
<b>GTP</b>	Growth Transformation Plan
<b>IAIP</b>	Integrated Agro-Industrial Park
<b>MoANR</b>	Ministry of Agriculture and Natural Resources
<b>MoFEC</b>	Ministry of Finance and Economic Cooperation
<b>MoI</b>	Ministry of Industry
<b>MoLF</b>	Ministry of Livestock and Fisheries
<b>PCC</b>	Primary Collection Centre
<b>RTC</b>	Rural Transformation Centre
<b>RUSACCO</b>	Rural Savings and Credit Cooperative
<b>UNIDO</b>	United Nations Industrial Development Organization
<b>USD</b>	United States dollar

United Nations exchange rate at 15 October 2017 (ETB 1 = USD 0.036939215)



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# EXECUTIVE SUMMARY

Cereal production constitutes the largest sub-sector in the Ethiopian economy. It accounts for roughly 60 percent of rural employment, about 73 percent of the total cultivated land, and more than 60 percent of the total caloric intake of the country's population. Wheat is one of the main cereals cultivated in Ethiopia as it provides 14 percent of the total caloric intake, ranking as the second most important food behind maize.

Although the production is dominated by smallholder farmers and almost the entirety of wheat is produced under rain-fed conditions, Ethiopia is the largest wheat producer in Sub-Saharan Africa. The country accounted for a total production of 4.5 million tonnes in 2016. In Ethiopia, 4.8 million farmers are engaged in wheat production, namely about 32 percent of total farmers engaged in grain cultivation.

The Central Statistical Agency reported that farm households consume about 60 percent of the wheat produced, 20 percent is sold and the remainder is used for seed, in-kind payment and animal feed. Despite its potential, Ethiopia remains a net importer of wheat as a result of a gap between production (4.5 million tonnes in 2016) and consumption levels (5.4 million tonnes in 2016). The Government of Ethiopia currently subsidizes the importation of wheat, providing it to large-scale millers that, in turn, sell flour to bakeries at controlled prices with the goal of making bread affordable to poor consumers.

Wheat production is seasonal and it mainly occurs in the Ethiopian highlands, a suitable agro-ecological zone characterized by a bi-modal rainfall pattern. Central-Eastern Oromia, comprising Arsi, West Arsi, Bale and East Shewa zones, accounts for approximately 42 percent of the overall wheat production of Ethiopia with 1.89 million tonnes in 2016. There are constraints across the production, aggregation, processing and distribution nodes of the value chain, although these constraints vary in intensity according to geographic zones and production systems.

Quality agricultural inputs supply and adoption of good agronomics practices are key areas of intervention for increased production and productivity. Improved seed, fertilizer and agro-chemicals supply does not satisfy the demand, compromising the quality of the produce along the value chain. Increased access to extension activities (including business and market information) and financial services is critical as well, especially for smallholder producers.



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The aggregation node is of crucial importance in the value chain, especially for rural producers that have limited connectivity with markets. In Central-Eastern Oromia, the chain from producers to processors is usually very long and includes many intermediaries. The current system results in high transaction costs, leading to a lack of price competitiveness.

Processors face a shortage of adequate wheat supply and are often forced to work under capacity. Also, the lack of linkage between processors and *durum* wheat producers hinders the farmers from producing the required quantity and quality. Another major constraint affecting processors is the deteriorating quality of raw products due to the different qualities of wheat mixed/blended by local assemblers, wholesalers and other participants throughout the value chain.

The piloting of an Integrated Agro-Industrial Park in Central-Eastern Oromia will create market opportunities in the near future for producers located within the Agro-Commodities Procurement Zone, and will represent a means to develop the wheat value chain. In this document, interventions are proposed across a number of areas. Undertaking these strategic interventions will significantly increase the likelihood of meeting the targets set in the Second Growth and Transformation Plan 2015-2020.

Specific targets to promote rapid and sustainable growth of the wheat value chain and of the wheat sub-sector in the Agro-Commodities Procurement Zone of the pilot Integrated Agro-Industrial Park in Central-Eastern Oromia are:

- i. increase the volumes of production of wheat by 36 percent, to reach approximately 2.57 million tonnes in 2020 (1.42 million tonnes of bread wheat and 1.15 million tonnes of *durum* wheat), on a total cultivated area of 540 000 hectares (seven percent increase);
- ii. raise average productivity of wheat by 27 percent, to reach on average 4.8 tonnes per hectare for bread wheat and 4.4 tonnes per hectare for *durum* wheat in 2020; and
- iii. strengthen formal market linkages (especially through cooperative actions) to increase the volume of quality wheat grain available to the industry by 166 percent in 2020; thus, enabling agro-processors to work at least at 80 percent of their capacity (annual supply of approximately 879 000 tonnes of wheat required).

Production and productivity enhancement of the wheat sub-sector should be realized by interventions in support of both smallholder and large-scale producers for: (i) supply of quality agricultural inputs – i.e. seeds, fertilizers and agro-chemicals – and increased irrigation and mechanization; (ii) improved capacity of value chain actors; (iii) increased quality and coverage of extension/advisory services; and (iv) gender-specific interventions.

In addition, the strategy to promote commercialization must focus on: (i) standardization, certification and quality control of inputs and wheat grain; (ii) promoting formalization and business-oriented production among smallholders and facilitating market linkages as well as access to credit and financing; (iii) reinforcing management skills and business orientation of cooperatives; and (iv) ensuring adequate technologies, equipment, machinery and agro-infrastructure for aggregation, storage, transportation and processing.



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# PART 1

# INTRODUCTION

## 1.1 BACKGROUND

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Ethiopia has an estimated population of approximately 100 million people. Its economy relies heavily on agriculture, which supports directly 85 percent of the population, constitutes 46 percent of the Gross Domestic Product, and accounts for 90 percent of the total export value.<sup>1</sup> Despite the large amount of agricultural products, the country remains dependent on imports of substantial amounts of semi-processed and processed food; products that have the potential to be – and in a limited amount of instances are – produced locally.

For the past 20 years, the Government has promoted the development of its industrial sector as a means of sustaining economic growth. Today, the development of agro-industries presents Ethiopia with an opportunity to accelerate economic development and to realize the industrial development goals of its Second Growth and Transformation Plan 2015–2020, towards becoming a leading manufacturing hub in Sub-Saharan Africa and achieving the lower middle-income status by 2025.

Based in part on the success of the Industrial Zone Development Programme for leather and textiles, the Government is spearheading the development of the Integrated Agro-Industrial Parks initiative to support the commercialization of the agricultural sector, and to accelerate the structural transformation of the economy.

A strong domestic agro-industry is of utmost importance, not only in order to decrease dependence on imported products, but also to drive the transition of the traditional supply-led subsistence agriculture towards an organized, high-tech, safe, and demand-led agriculture.<sup>2</sup>

<sup>1</sup> Mol and MoARD, 2015. Feasibility Report for Integrated ACPZ and IAIP in Central-Eastern Oromia (pg. 1).

<sup>2</sup> MoTI and MoARD, 2009. Ethiopian Agro-Industry Sector Strategy (pg. 2).

## The Integrated Agro-Industrial Park concept<sup>3</sup>

An Integrated Agro-Industrial Park is a geographic cluster of independent firms grouped together to gain economies of scale and positive externalities by sharing infrastructure and by taking advantage of opportunities for bulk purchasing and selling, training and extension services. The primary feature of Integrated Agro-Industrial Parks is the clustering of essential **infrastructure, utilities and services** required for business operations and growth.

In addition, the Parks enable links with **global agricultural value chains**. Both processors and producers stand to benefit from better linkages between farmers and agro-industries. Moreover, increased integration with commercial value chains encourages the inclusion of informal economic actors into the **formal system**.

**Technology transfer** and **knowledge dissemination** are two benefits of grouping large- and small-scale businesses in the same location. These benefits reach out producers and small-scale processors, ensuring higher product quality from farm to fork, and integrating larger portions of the population into commercial agricultural value chains. Another key feature is **innovation diffusion**. By disseminating knowledge, skills and innovation, the Parks contribute to the overall upgrading of the agro-industrial sector and allow firms to become more competitive at regional and global levels.

The Integrated Agro-Industrial Parks provide the opportunity for producers to enter into binding **business-to-business arrangements** (e.g. contract farming) with processors. Inclusive and gender-sensitive business models strengthen the capacity of farmers in terms of production methods and technology; output quantity, quality and prices; and technical and financial assistance. In addition, Integrated Agro-Industrial Parks enable access to **financial services** for producers and small-scale processors that are encouraged to innovate and expand their business.

The last key feature of Integrated Agro-Industrial Parks is the promotion of **entrepreneurship and businesses** allied to agro-industry (e.g. specialized in sales, input supply, distribution and transport). By offering incentives, Integrated Agro-Industrial Parks promote specialization and growth of innovative businesses, also fostering **rural jobs creation** and generating important **off-farm employment** opportunities for women and men. Ultimately, the Parks can serve as an example to both domestic and international audiences of the capability of Ethiopia to achieve standards in food processing, from traceability of raw materials to ecological and environmentally friendly production.

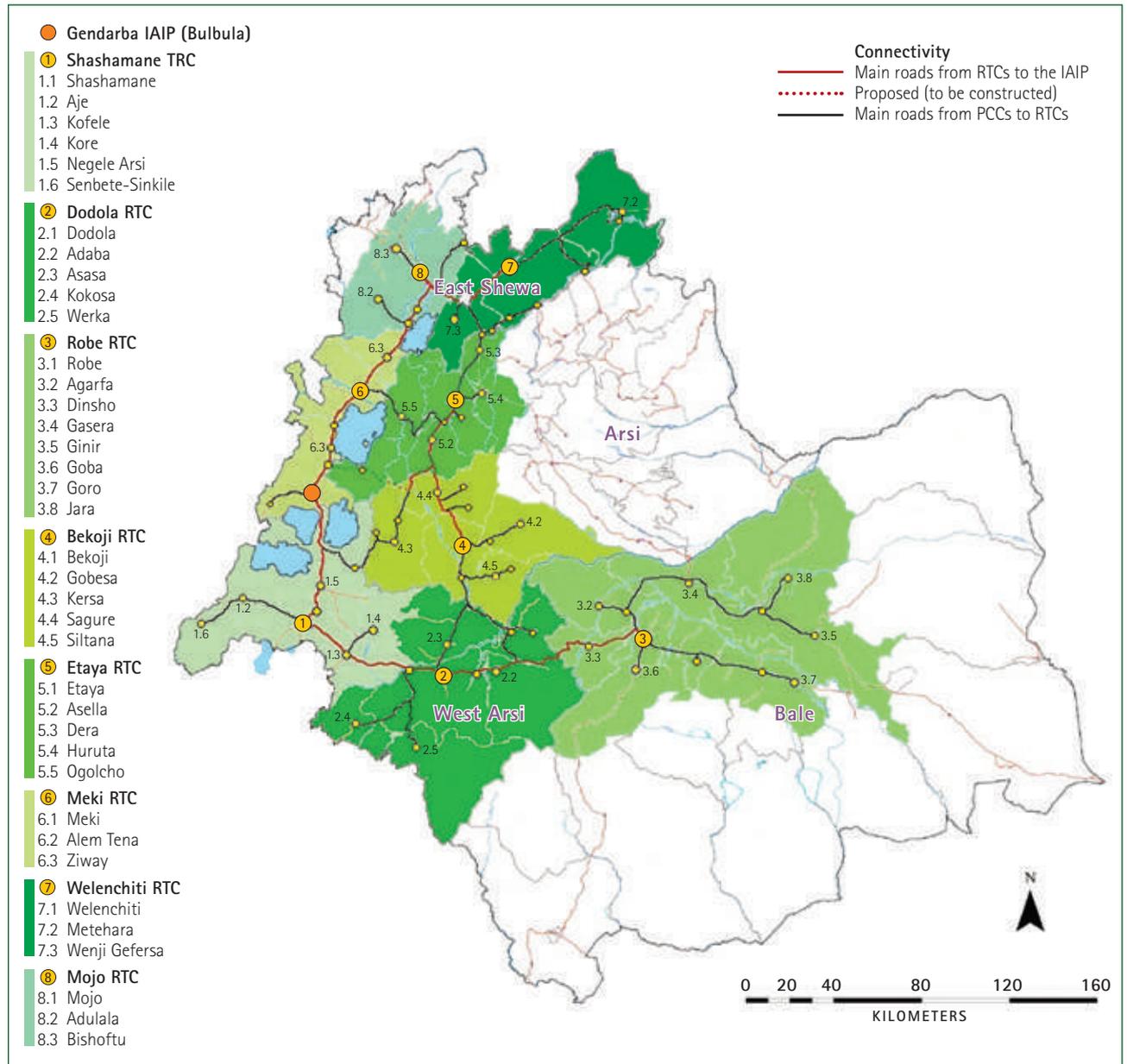
In the model proposed by the Government of Ethiopia, each Integrated Agro-Industrial Park sources the raw material from an Agro-Commodities Procurement Zone, which is served by a network of Rural Transformation Centres that ensure constant flow of agricultural produce to the agro-industries located in the Park.

At the Rural Transformation Centres, agricultural produce is collected, sorted, stored, and may undergo primary processing before onward transportation to the Park. Producers sell their products to aggregators and purchase agricultural inputs, technical support and other services (e.g. small-scale financial services, as well as basic social services) from service providers. Support businesses and social infrastructure are also present, to cater for the needs women and men and to favour their effective involvement at different nodes of the value chains.

For most farmers, the Rural Transformation Centres are the main point of contact with commercial agricultural value chains and may represent key entry points to access opportunities for socio-economic development. In addition, this model could be complemented by Primary Collection Centres, smaller point of aggregation and delivery of basic services located deeper in rural areas, to better connect producers to the Rural Transformation Centres.

<sup>3</sup> Adapted from: Summary of the Feasibility Study for Integrated Agro-Industrial Parks in Ethiopia (pg. 9-12).

FIGURE 1: The Agro-Commodities Procurement Zone in Central-Eastern Oromia



Source: Authors' elaboration.

## 1.2 OBJECTIVE AND OUTPUTS

---

The objective of the study is to provide a **Strategic Analysis and an intervention plan for Wheat and Wheat Products in Central-Eastern Oromia**, based on a comprehensive and gender-sensitive examination of the wheat sub-sector (both bread and *durum* wheat) in the Agro-Commodities Procurement Zone of the pilot Integrated Agro-Industrial Park. The analysis includes constraints and opportunities for value chain actors and supporting institutions.

The study proposes specific recommendations for the pro-poor development of the wheat value chain, to ensure that women and men producers have the capacity and the incentives to sell raw materials in the right quantity and quality, timely, and at competitive price to the agro-processing industries in Central-Eastern Oromia.

Specific **outputs** are:

- ◉ the overview of the wheat sub-sector in Central-Eastern Oromia (Part 2);
- ◉ the analysis of the systemic constraints and upgrading opportunities for the value chain (Part 3); and
- ◉ the strategy for improved competitiveness and growth of the Ethiopian wheat sub-sector and the strategic intervention plan (Part 4).

## 1.3 RATIONALE

---

The strategic analysis of selected agricultural commodities in Central-Eastern Oromia supports the effort of the Government to design a comprehensive strategy on Enhancing Production & Productivity and Commercialization in the Agro-Commodities Procurement Zone of the Integrated Agro-Industrial Park. It builds upon three key resources:

- i. the Feasibility Report for the Agro-Commodities Procurement Zone and the Integrated Agro-Industrial Park in Central-Eastern Oromia, which was finalized by the Ministry of Industry and the Ministry of Agriculture and Rural Development in 2015;
- ii. the Four Years Strategic Plan (2017-2020) for the Supply of Raw Material to the Integrated Agro-Industrial Park in Central-Eastern Oromia, prepared in 2016 by the Ministry of Agriculture and Natural Resources in collaboration with the Ministry of Livestock and Fisheries and the Ethiopian Agricultural Transformation Agency; and

- iii. the Preliminary Analysis of the Required Agro-Infrastructure in the Agro-Commodities Procurement Zone of the Pilot Integrated Agro-Industrial Park in Central-Eastern Oromia that has been finalized by FAO in 2017.

This Strategic Analysis and Development Plan complements the Feasibility Report and refines the Strategic Plan with the aim of providing the Government of Ethiopia with a competitiveness strategy and a plan that should guide interventions and investments in support of the development of the wheat sub-sector in Central-Eastern Oromia.

### The value chain approach

---

The value chain approach is a systemic analysis tool that looks at how opportunities deriving from end markets can drive a sequential chain of value-adding activities, from production of raw materials to sales of final products to consumers.

The approach goes beyond the analysis of individual actors to examine the nature of horizontal and vertical linkages and their governance mechanism. Linkages are depicted in a **value chain map** with some indications on the numbers of agents, product-flow values and volumes and key points of leverage. The latter are points in the system at which many actors connect or through which high volumes of product flow (e.g. a large processor, a geographic cluster) or that affect the value chain as a whole (e.g. policy).

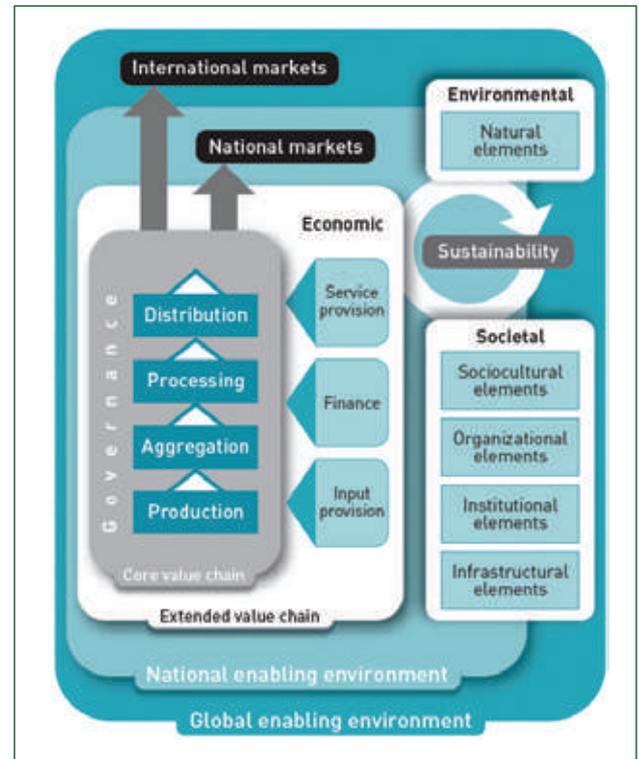
The analysis starts from understanding the characteristics and requirements of **end markets** in order to identify real market opportunities as well as the performance gaps within the value chain with regards to meeting those requirements.

While end markets are the starting point and competitiveness in them is the primary performance indicator, generating increased profits from a higher level of competitiveness that benefits only a few or that exacerbate inequalities between women and men is an undesirable outcome if poverty reduction and food security are the objectives. Also, increasing competitiveness and profitability while irrevocably depleting natural resources is ultimately a self-defeating strategy. In this regard, **sustainability** and **performance indicators** need to be considered as well.

Once the inner workings of the value chain have been examined in sufficiently detail and understood, it becomes possible to prioritize a set of interlinked **systemic constraints**, including gender-based constraints, which need to be addressed and the **upgrading opportunities** that should be pursued in order to maximize the desired impact.

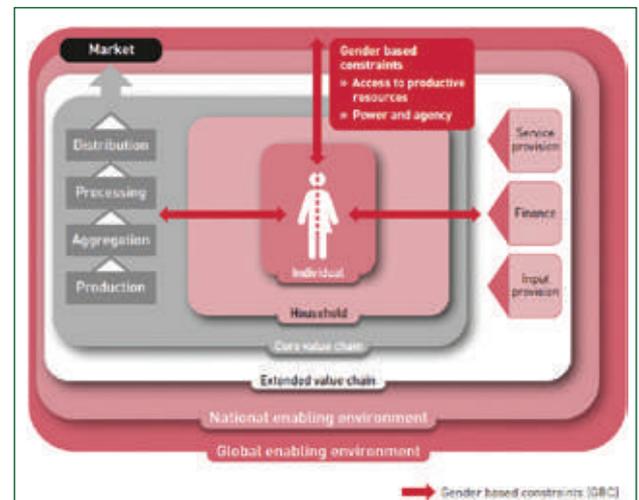
The impact should be derived from a **vision**, the development of which is essential for the design of a **competitiveness strategy**. This strategy needs clearly specified and quantified goal to be translated into a detailed **intervention plan** that specifies what should be done when and by whom.

FIGURE 2. The FAO Sustainable Food Value Chain framework



Source: From *Developing sustainable food value chains*, FAO 2014.

FIGURE 3. The FAO Gender-Sensitive Value Chain framework



Source: From *Developing gender-sensitive value chains*, FAO 2016.

## FAO's value chain frameworks<sup>4</sup>

The team availed itself of two analytical tools developed by FAO: the **Sustainable Food Value Chain** framework and the **Gender-Sensitive Value Chain** framework. The integrated use of these two conceptual frameworks allows for a holistic and comprehensive strategic analysis.

A Sustainable Food Value Chain is defined as:

*the full range of farms and firms and their successive coordinated value-adding activities that produce particular raw agricultural materials and transform them into particular food products that are sold to final consumers and disposed of after use, in a manner that is profitable throughout, has broad-based benefits for society, and does not permanently deplete natural resources.*

The Sustainable Food Value Chain framework is built around the **core value chain**, which relates to the value chain actors, i.e. those who produce or procure from the upstream level, add value to the product and then sell it on to the next level. Four core functions are distinguished in the chain: production, aggregation, processing and distribution (wholesale and retail). The aggregation step is especially relevant for food value chains in developing countries; efficiently aggregating and storing the small volumes of produce from widely dispersed smallholder producers is often a major challenge. A critical element of the core value chain is its **governance structure**, which refers to the nature of the linkages both between actors at particular stages in the chain (horizontal linkages) and within the overall chain (vertical linkages).

Value-chain actors are supported by business development support providers; these do not take ownership of the product, but play an essential role in facilitating the value-creation process. Along with the value chain actors, these support providers represent the **extended value chain**. Three main types of support provider can be distinguished: (i) providers of physical inputs; (ii) providers of non-financial services; and (iii) providers of financial services.

Ultimately, value is determined by the consumer's choice of which food items to purchase on **national and international markets**. Value-chain actors and support providers operate in a particular **enabling environment** in which societal and natural environmental elements can be distinguished. Within the enabling environment, we can further differentiate between the national environment and the international environment. The **sustainability** of the value chain plays out simultaneously along three dimensions: economic, social and environmental.

The Gender-Sensitive Value Chain framework complements the above tool and comes to reinforce the dimension of social sustainability. It features two further levels of analysis: **individual and household** levels. The framework puts the dimension of the individual at the core to acknowledge the diversity of women and men as value chain actors with unique characteristics, abilities and aspirations. Also, it highlights the importance of the household dimension, in which specific dynamics and power relations are in place.

Gender-based constraints affecting equal participation in and benefits from value chain mainly revolve around the interrelation of two key economic empowerment factors: (i) **access to productive inputs**, and (ii) **power** (i.e. decision-making power) **and agency** (e.g. capabilities, self-confidence, etc.).

The extent of women's and men's access to and control over productive resources and benefits is often determined by socio-cultural norms and perceptions and may entail factors such as age, social status, level of education, ethnicity, policies and regulations. These norms and perceptions stem from individuals, bolster at the household level and are likely to trigger inequalities along the core and extended value chains and to influence the national and global enabling environments. For these reasons, it is paramount to consider the individual and the household dimensions to identify gender-based constraints and to tackle inequalities that affect the efficiency and the inclusiveness of the value chain.<sup>5</sup>

<sup>4</sup> Adapted from: FAO, 2014. Developing sustainable food value chains – Guiding principles (pg. 10-12); and FAO, 2016. Developing gender-sensitive value chains – A guiding framework (pg. 24-27).

<sup>5</sup> For FAO gender equality is equal participation of women and men in decision-making, equal ability to exercise their human rights, equal access to and control of resources and the benefits of development, and equal opportunities in employment and in all other aspects of their livelihoods.

The study seeks to identify those gender-based constraints which affect and are affected by the way the value chain functions and endeavours to propose viable solutions for a more equal participation of women and men and a more equal access to and control over deriving gains and benefits.

## 1.4 METHODOLOGY

Although there are quantitative elements to the strategic analysis, the methodology is predominantly focused on a qualitative analysis of the structure of the wheat sub-sector. The aim is to identify those upgrading opportunities that will drive the competitiveness strategy and the intervention plan to achieve the stated vision for Central-Eastern Oromia.

A combination of four methods was used by the FAO team: literature review, key informants/experts consultation, field-based appraisals, and a stakeholders' validation workshop. Key findings are incorporated directly in the document.

The **literature review** consisted in the examination of existing bibliography (i.e. papers, reports, strategies, and policies) related to the wheat sub-sector in Ethiopia, with specific attention to Central-Eastern Oromia. With the literature review, the team generated an understanding of strengths, weaknesses, opportunities, and threats faced by value chain actors.

**Key experts/institutions** were contacted based on consultations with Government officials (especially Ministry of Agriculture and Natural Resources), FAO staff and other stakeholders. Appointments were arranged with the following: International Maize and Wheat Improvement Center (CIMMYT), Ethiopian Institute of Agricultural Research (EIAR), Oromia Bureau of Agriculture and Natural Resources (BoANR) and Oromia Cooperative Promotion Agency (CPA).

A **field mission** to Arsi, Bale, East Shewa, and West Arsi zones was organized on 16-20 October 2017 to validate information and to gather further evidence, with specific attention to gender-based constraints.





The team relied on the accounts of a sample<sup>6</sup> of key actors, identified in consultation with zonal and *woreda* authorities along the core and the extended value chains, and employed use of semi-structured individual interviews, focus group discussions and structured observations. The list of key informants interviewed during the field mission is provided in Annex 1.

The main activities conducted were:

- ◉ identification of key value chain actors operating in Central-Eastern Oromia and field-validation of secondary information gathered through the literature review (i.e. current challenges and gender-based constraints, available infrastructure, existing and prospect market opportunities, etc.); and
- ◉ individual meetings and focus group discussions with key informants (45 men and 20 women) operating in the core and extended value chain, i.e. producers, processors, retailers and service providers;<sup>7</sup>

Throughout the preparation and finalization of this study, FAO technical officers in Addis Ababa, Accra and Rome provided important feedback and comments. In addition, several Government officials provided technical inputs in their respective area of expertise.

The analysis phase relied largely on triangulations as a method to validate information from different sources. In line with the mixed method approach (i.e. quantitative and qualitative), content analysis was complemented with the quantitative evidence gathered. This exercise allowed to identify major challenges along the value chain with a focus on those affecting smallholder farmers and to recommend strategies and actions building on existing potentials with a gender-integrated and pro-poor approach.

<sup>6</sup> Convenience/non-probability sampling method.

<sup>7</sup> Data gathering methods employed for the gender analysis included '24 hours chart', 'activity profiles', 'control and access profiles', structured observations and micro narratives.



A first **technical meeting** with key experts was organized on 31 January 2018 at the Oromia Agriculture and Natural Resources Bureau in Addis Ababa. During the event, the zero draft of this study was reviewed and commented on, and technical inputs were collected to refine the identification of systemic constraint in Central-Eastern Oromia. A **second technical workshop** was organized on 1 February 2018 at the Ministry of Agriculture and Natural Resources. Participants were senior officials (Directors and above) from the Ministry. The purpose of this workshop was to validate information gathered through the literature review and the technical meetings. The lists of participants to both workshops are provided in Annex 1.

Finally, a **stakeholders' validation workshop** will be organized in Addis Ababa to discuss the results of the present study. Participants will include Government officials (both at federal and regional levels), researchers, development partners and Non-Government Organizations (international and local), representatives of producers' organizations and of private actors (service providers, processors, wholesalers, supermarkets and hotel, consumers, etc.).



# PART 2

# STRATEGIC ANALYSIS

## 2.1 THE WHEAT SUB-SECTOR IN ETHIOPIA

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This section provides an overview of the wheat sub-sector, including its economic relevance to Ethiopia's economy and its growth potential.

### Economic relevance

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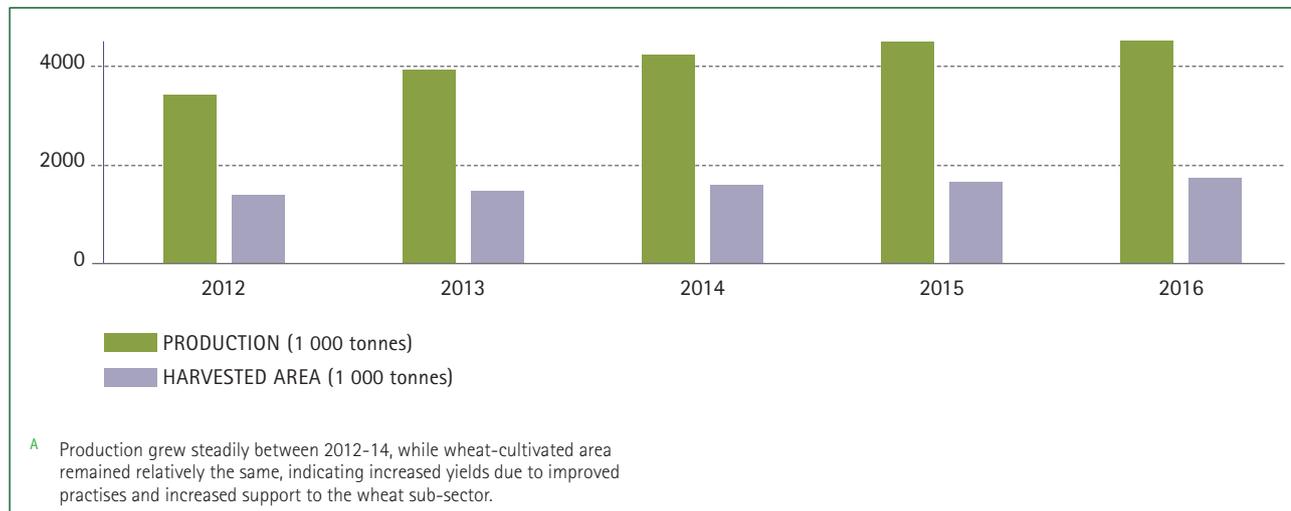
Because of its rich natural resource endowment, Ethiopia is a major producer of cereals such as *teff*, maize, wheat, sorghum and rice and the largest wheat producer in Sub-Saharan Africa. At national level, about 1.7 million hectares of land were cultivated on wheat in 2016, with a total production of 4.5 million tonnes (about 16 percent of Ethiopia's total grain production).

The wheat sub-sector is strategic for the Government of Ethiopia. Wheat is one of the major staple crops in terms of

both production and consumption. It is a highly marketable commodity and it is consumed heavily in different forms. Wheat and wheat products make up to 14 percent of the overall calories intake of an average household.

In Ethiopia, 4.8 million farmers are engaged in wheat production, namely about 32 percent of total farmers engaged in grain production. In addition, the wheat sub-sector creates many job opportunities along the value chain.

FIGURE 4: Trends in wheat production and harvested area in Ethiopia<sup>A</sup>

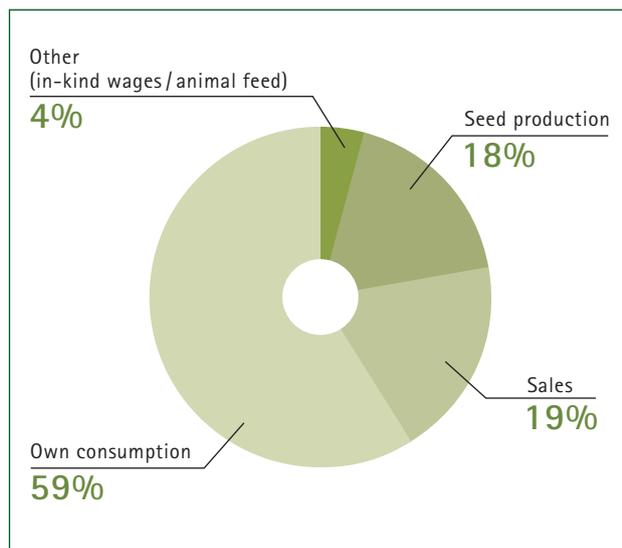


Source: Own elaboration from CSA data.

Both production and wheat cultivated area have increased, contributing to increased yields over the past ten years. This growth is attributed to heavy investment on extension programs and increased supply of inputs. Along with production increase in recent years, consumption of wheat and wheat products has also expanded significantly. The internal demand for wheat products is growing as a consequence of the changing lifestyle and population growth in Ethiopia.

Processing facilities such as flourmills, pasta and biscuit factories, and bakeries are flourishing in response to the growing demand for wheat and wheat products.

FIGURE 5: Wheat utilization among smallholder farmers in Ethiopia



Source: Central Statistics Agency, 2014/15.

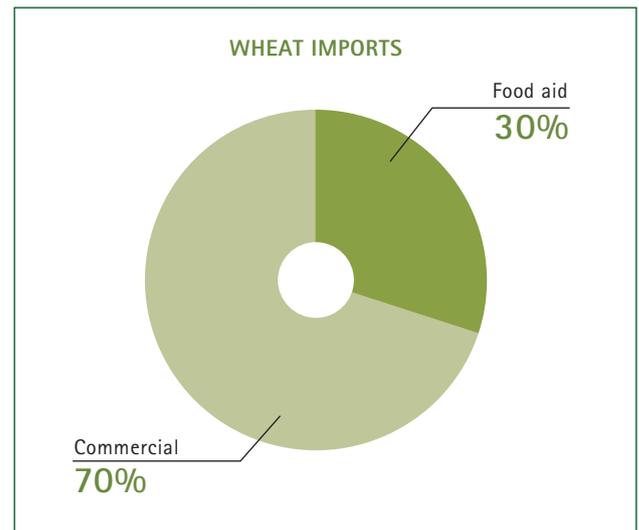


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## Growth potential

Despite its potential, Ethiopia remains a **net importer** of wheat. Ethiopia is experiencing a huge gap between production (4.5 million tonnes in 2016) and consumption levels (5.4 million tonnes in 2016), which results in import dependence. For instance, in 2016 the Ethiopian Grain Trade Enterprise imported 750 thousand tonnes from Russia and Argentina and 300 thousand tonnes through food aid, resulting in 1.05 million tonnes of imported wheat. As a result of the rapid urbanization and of the increasing population, consumption of wheat products like flour, bread, biscuits and pasta (e.g. macaroni, spaghetti, etc.) is rising. The demand for quality wheat, especially *durum* wheat, is high and not met by the local production.

FIGURE 6: **Wheat domestic consumption in 2016 in Ethiopia**



Source: Re-elaboration from BMGF, 2014.

FIGURE 7: Wheat domestic consumption trend in Ethiopia<sup>A</sup>



Source: Own elaboration from Indexmundi, 2017.

In order to satisfy the domestic demand for wheat and wheat products and tap into export opportunities, the Country needs to improve its current standing significantly, both in terms of quality supply at the right price and quantities produced. Ethiopia has the potential to become an exporter of wheat

because of its production potential and strategic geographic position. Ethiopia accounts for over one third of the overall cereal production of COMESA countries, which represent potential export destinations due to their growing population and increasing demand for wheat and wheat products.

## Benchmarking

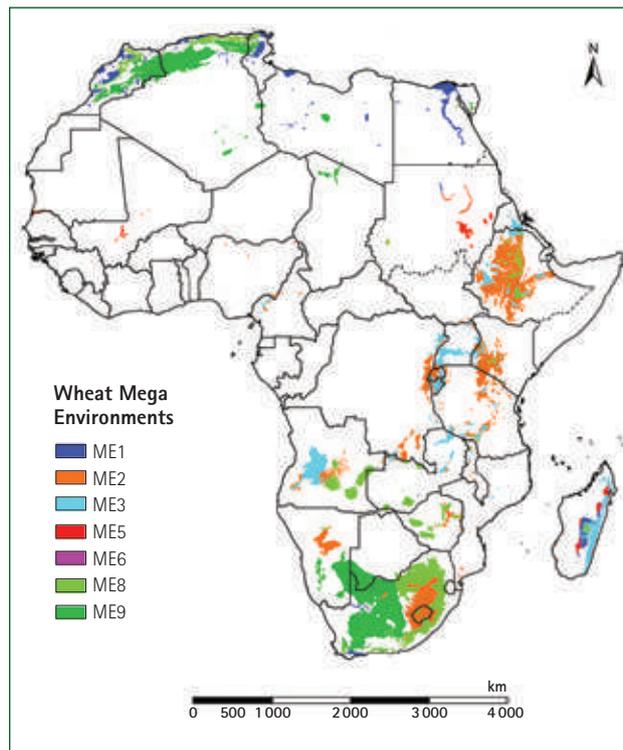
South Africa and Ethiopia are Sub-Saharan Africa's main wheat producers due to their agro-ecological conditions (i.e. mega-environments).<sup>8</sup>

According to FAOSTAT, the largest cultivated area is found in Ethiopia with 1.7 million hectares, which is more than three times the cultivated area of South Africa (508 000 hectares). However, due to a higher average yield - approximately 3.7 tonnes per hectare in South Africa and 2.7 tonnes per hectare in Ethiopia in 2016 - South Africa's total wheat production (1.88 million tonnes) is almost half of Ethiopia's (4.5 million tonnes).

<sup>8</sup> To address the needs of these diverse wheat growing areas, CIMMYT uses the concept of mega-environments. A mega-environment is defined as a broad, not necessarily contiguous area, occurring in more than one country and frequently transcontinental, defined by similar biotic and abiotic stresses, cropping system requirements, consumer preferences, and, for convenience, by a volume of production.



FIGURE 8: Wheat mega-environments in Africa



Source: CIMMYT, 2013. The Potential for Wheat Production in Africa.

South Africa's higher productivity depends on the use of quality inputs and mechanization services on large extensions of land. Ethiopia is instead characterized by the presence of both small-scale farms employing animal traction (ploughing) and large-scale farms applying mechanization and modern farming methods. South Africa's entire wheat sub-sector employs about 32 thousand full-time workers, whereas in Ethiopia smallholder wheat producers alone are 4.8 million people.

The comparison between Ethiopia and South Africa illustrates the critical role that agricultural inputs and technology play in increasing production and productivity of crops. In Ethiopia there is a need for expanding agricultural mechanization services (e.g. planting, threshing, harvesting, etc.) and input availability (improved seed varieties, fertilizers, agrochemicals, etc.). The expansion of availability and affordability of these services will have a remarkable impact especially on smallholder producers.



## 2.2 END MARKETS FOR GRAIN AND WHEAT PRODUCTS FROM CENTRAL-EASTERN OROMIA

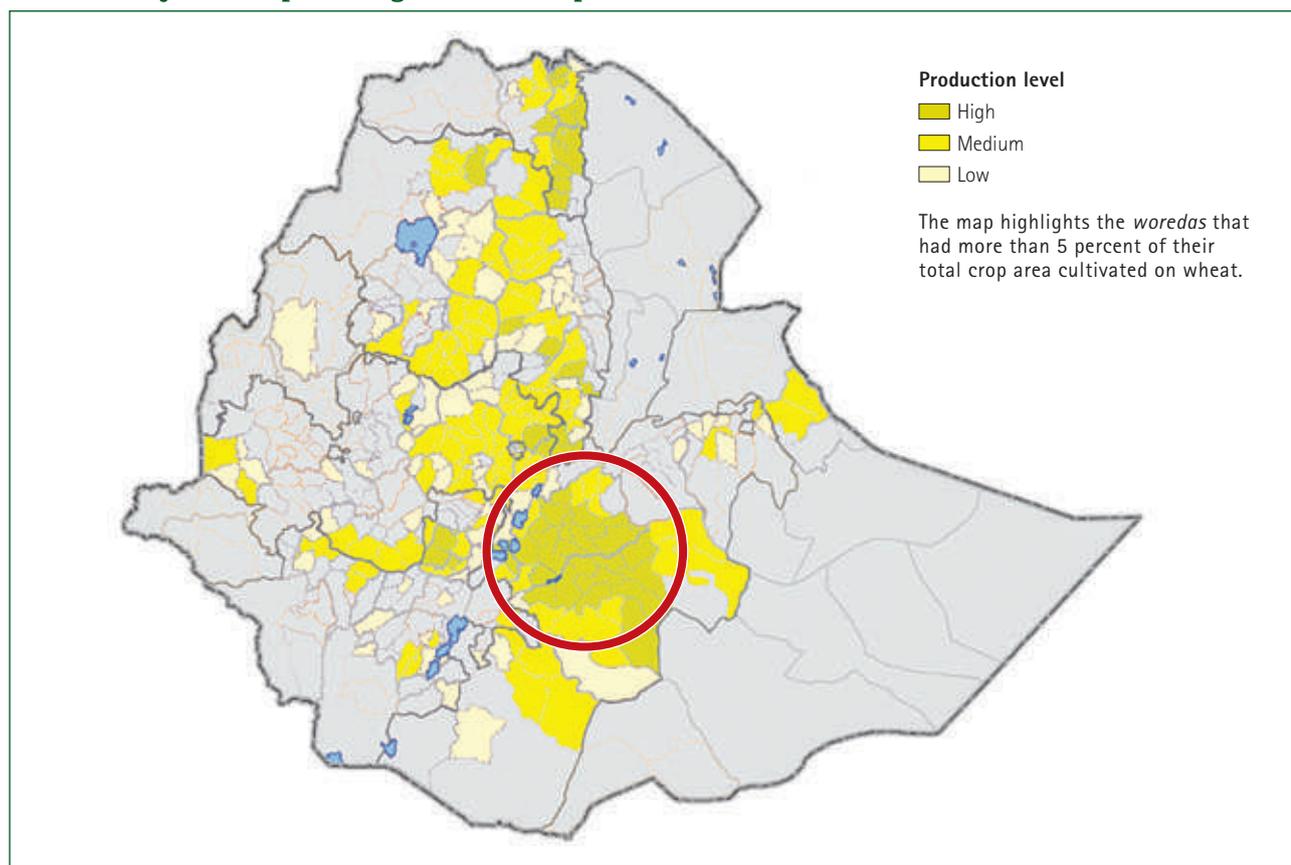
In this document, the value chain analysis starts with an overview of the markets for wheat and wheat products from Central-Eastern Oromia. This approach is necessary to make sure that the strategy for the development of the value chain outlined afterwards is anchored to concrete opportunities that can drive a sustainable and inclusive growth by absorbing the current production and the future surplus from enhanced production & productivity and strengthened commercialization.

With ideal climate and abundant rainfall, emergence of fast-growing urban centres, and expansion of road networks, power

and water supplies, Central-Eastern Oromia offers opportunities for agribusiness and agro-industry development, and has great potential for development of a thriving wheat sub-sector.

There are two main species of wheat in Ethiopia: bread wheat (*Triticum aestivum*) and durum wheat (*Triticum turgidum durum*). Both are cultivated in Central-Eastern Oromia, which is among the most productive areas of the country. In addition, a small amount of emmer wheat (*Triticum turgidum dicoccoidesis*) – the wild progenitor of the domesticated wheat species – is grown in Oromia region mainly.

FIGURE 9: Major wheat producing areas in Ethiopia



Source: Elaborated from IFPRI. 2006. Atlas of the Ethiopian Rural Economy.

Central-Eastern Oromia is uniquely situated close to Addis Ababa and other major cities like Adama and Hawassa, which can serve as permanent markets for wheat and wheat products; thus making the area more competitive on the domestic market in terms of logistics and cost of transportation.

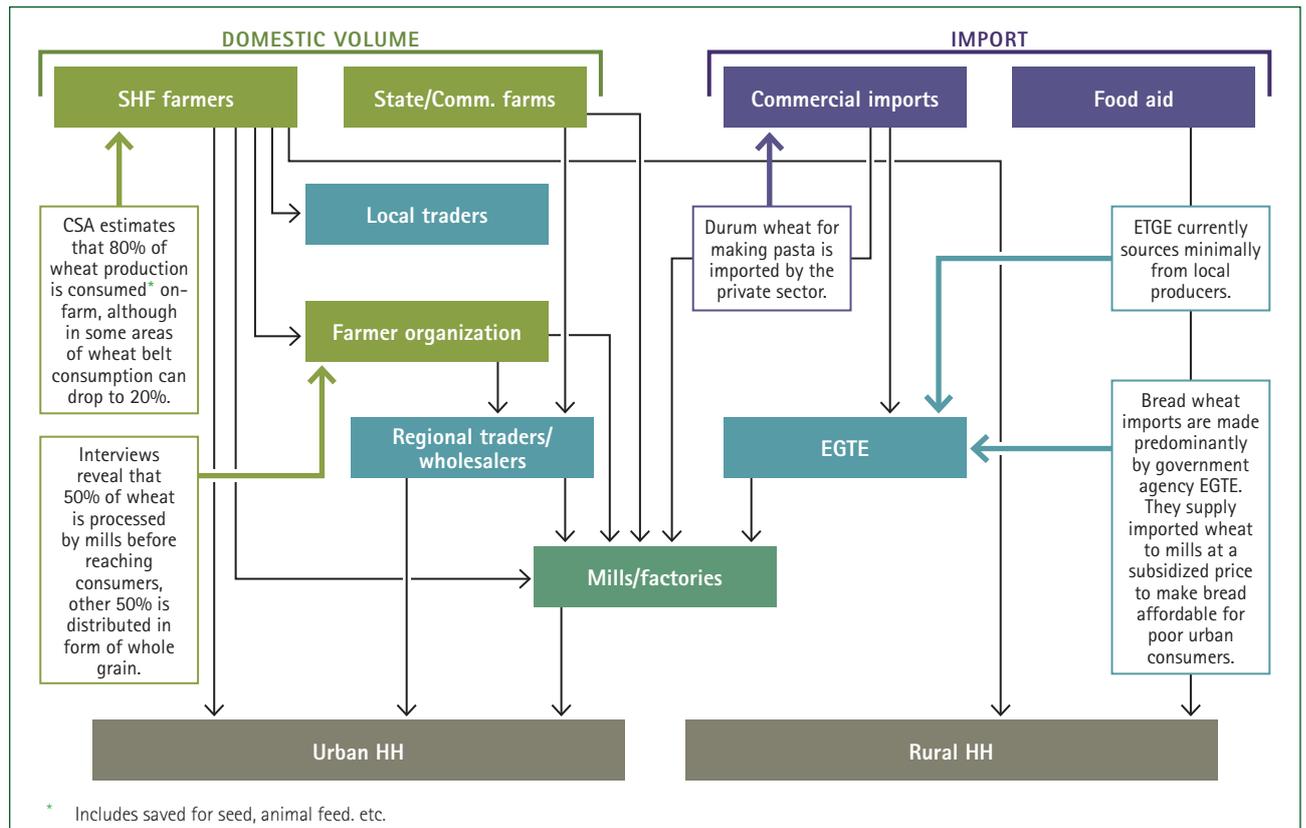
The port of Djibouti, located 950 km via road from Addis Ababa is the most strategic infrastructure for exporting goods from Ethiopia. The recently inaugurated railway system connecting Addis Ababa to Djibouti represents a step forward for Ethiopian infrastructures and it is expected to speed-up commercial exchanges with trade partners. In addition, East Shewa zone is connected through the new expressway between Addis Ababa and Adama.

## Domestic market and consumption

Domestic (overall) consumption of wheat in Ethiopia is higher than in any other country in Sub-Saharan Africa, although it stands at half the world average of 65 kilograms per capita per year. Consumption in Ethiopia differs among rural and urban population. The price of bread is set and subsidised by the Government through the control of wheat imports.

Two markets for wheat grains exist in Ethiopia: a high-quality niche market supplying high-income urban consumers and a large controlled (subsidised) market. Rural households are likely to consume their own production or to purchase wheat grain at the local market. Urban consumers, on the other hand, buy larger quantities of grain and wheat products such as flour, pasta, bread and biscuits.

FIGURE 10: Ethiopian wheat market map



Source: Re-elaboration from BMGF, 2014.

On average, in Ethiopia only 19 percent of the wheat produced by smallholder farmers is sold while the remaining 81 percent is used for seed, own consumption, in-kind payments for labour, and animal feed. Nevertheless, in some areas of the wheat belt (which includes Central-Eastern Oromia), consumption can drop to 20 percent.

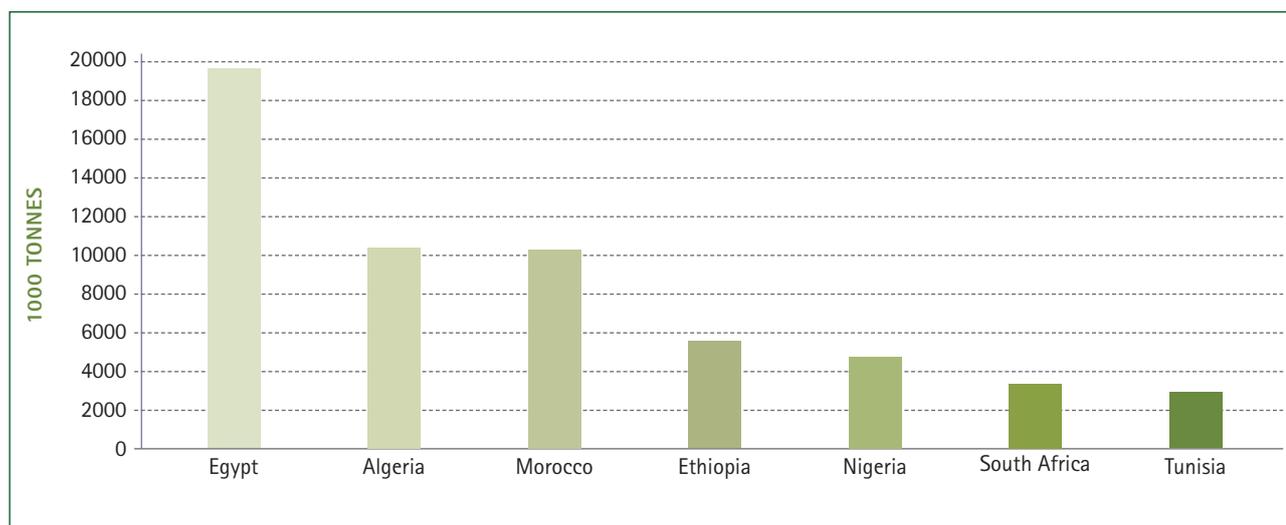
For example, in Arsi and Bale zones in Central-Eastern Oromia, about one-quarter of the wheat grown is consumed on-farm. In Arsi zone, producers market a significant share of bread wheat, about 35 percent, at local level (i.e. farm-to-farm, local mills and village markets); and about 30 percent at regional/national

level (i.e. large processors and wholesalers, and city markets). The remaining 10 percent of the wheat grown is *durum* wheat. Producers in Bale zone grow more *durum* wheat (about 30 percent) and distribute 35 percent at regional/national level.

The consumption trend is increasing especially in urban areas due to high population growth and changes in lifestyle.

Wheat is also used for many popular local products – local snacks and beer – while wheat straw can be used for many purposes, from roof thatching to animal feeding.

FIGURE 11: Major consumers of wheat (countries) in Africa in 2017



Source: Own elaboration from Indexmundi, 2017.

## Regional and global markets

In Eastern Africa there are a number of countries that are highly dependent on wheat imports, representing a strategic opportunity for Ethiopia's export ambitions.

In Kenya, wheat is the second most important staple cereal after maize. The country has a structural deficit of approximately 70 percent on demand which is covered through imports.

Similarly, Uganda's demand of wheat is higher than its supply (although the country is generally food self-sufficient) leading to import dependency to meet the local demand. Regionally, Egypt, the most populous country in the Middle East and North Africa region, is the largest importer of wheat globally. Consumption levels in Egypt are high as wheat provides about one-third of daily calorie per capita intake and its overall

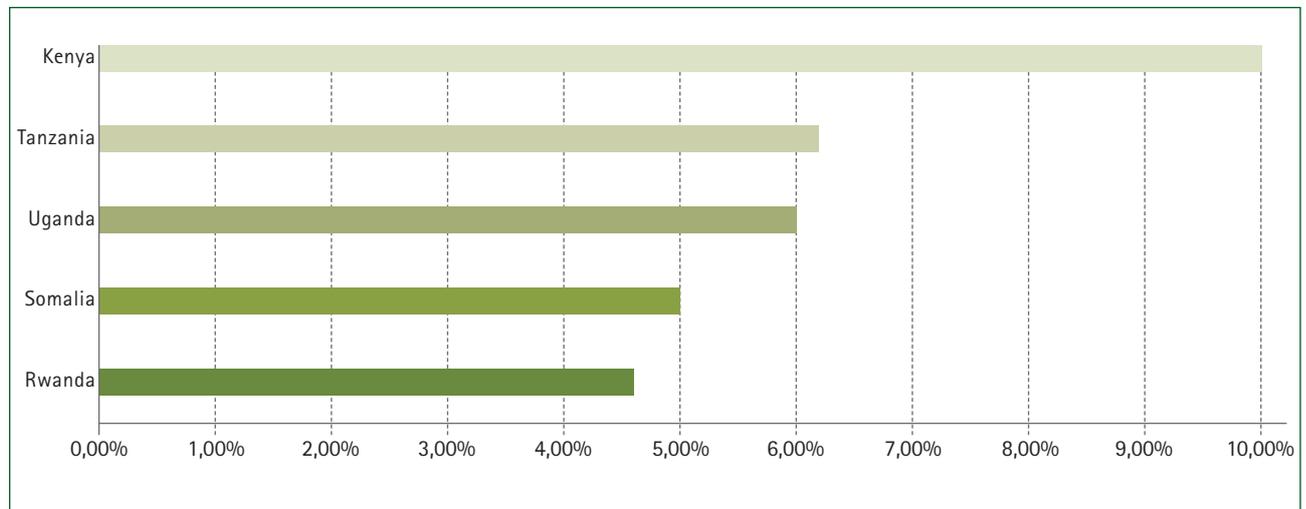
consumption is expected to rise even further as a result of population growth.

At a continental level, Sub-Saharan Africa is projected to have the strongest wheat import growth of any region in the next years. In fact, over the last decade as a whole, Sub-Saharan Africa has been a major driver of the increasing global wheat trade. Stagnant production and rapid consumption growth have been the main drivers of import demand in the region.

Consumption is escalating on long-term trends of urbanization, rising incomes, and population growth. This year, record global production and relatively low prices have further catalysed import demand in Sub-Saharan Africa.

In addition, other Middle Eastern countries have a largest projected growth for imports of wheat in 2018 and beyond. Both African and Middle Eastern markets are easily accessible for Ethiopia due to his strategic geographic position.

FIGURE 12: Annual increase in domestic consumption for East African countries



Source: Own elaboration from Indexmundi, 2017.

## Marketing channels

In Ethiopia, there are formal and informal marketing channels. Wheat marketing is mostly informal. The **informal channel** is dominant among smallholders in rural areas, especially where cooperatives are absent or weak. Smallholders usually opt for selling their products to local collectors at lower prices due to lack of storage facilities and transportation services. They also sell their produce rapidly to get quick cash in order to cover their expenses.

Smallholder producers sell or exchange wheat at the local level, with no regulatory oversight. The informal channel is dominated by non-licensed traders who gather wheat from rural producers in order to resell it to wholesalers. These collectors act as the first link between informal and formal markets. The informal marketing chain is often characterized by the absence of adequate infrastructure for aggregation that result in major issues related to volumes of production, sales, price, and quality of wheat. Limited storage facilities and poor road conditions, in fact, increase post-harvest losses affecting both quantity and quality and, ultimately, selling prices.



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TABLE 1: Retail prices of wheat subsidized by the Ethiopian Grain Trade Enterprise

Year	2015	2016	2017
Price per tonne (ETB)	13 800	14 500	15 250

Source: Ethiopian Grain Trade Enterprise.

On the other hand, the **formal channel** usually involves primary cooperatives and unions as primary aggregation points. The formal sector includes cooperatives, unions, rural wholesalers, commercial farmers and millers. They sell wheat in bulk directly to wholesalers and processors that are licensed traders.

On average, producers realize a marketable surplus<sup>9</sup> of 25 percent of their wheat production. However, rates vary depending on the region. Oromia accounts for about half of the national marketed wheat, as the region comprises most large-scale commercial farms. Given that almost the entirety of the large-scale producers' wheat is marketed, it can be estimated that large-scale companies generate 15–20 percent of retailed wheat in Ethiopia.

### Market prices

Ethiopia is a net importer of wheat and wheat products. In order to stabilize the market and address the demand of domestic wheat processors, the Government regularly imports wheat grain and distributes it at subsidized price. The price of wheat

purchased in the local market is about 30 percent higher than the one for wheat from the Grain Enterprise, but the quality of the former is much higher than the latter (i.e. imported subsidized wheat).

Domestic prices are collected by the Ethiopian Grain Trade Enterprise. Addis Ababa is considered the main central market as well as the main point of competition for other main producing areas. During the harvesting period the volume of wheat supplied reaches its peak, while prices decrease significantly. Seasonal rain-fed production strongly affects consumption and prices: high prices and low consumption characterize the growing period while low prices and high consumption occur during the harvesting season. Moreover, since smallholders practice limited storage, they tend to sell their produce for low prices during the surplus period.

In 2014–15, the Ethiopian Grain Trade Enterprise sold imported wheat to selected large-scale millers at the price of ETB 7 562 per tonne; millers were then required to sell the flour at ETB 10 945 per tonne to selected bakeries. Finally, bakeries sold bread produced with subsidized flour at ETB 19 per kilogram.

<sup>9</sup> Marketable surplus is defined as product commercialized through formal and informal market channels and not used for own consumption, seed, in-kind payments and animal feed. In Ethiopia, most of the estimates are in the range of 18–28 percent; a trend upward or downward doesn't appear.

## 2.3 THE WHEAT VALUE CHAIN IN CENTRAL-EASTERN OROMIA

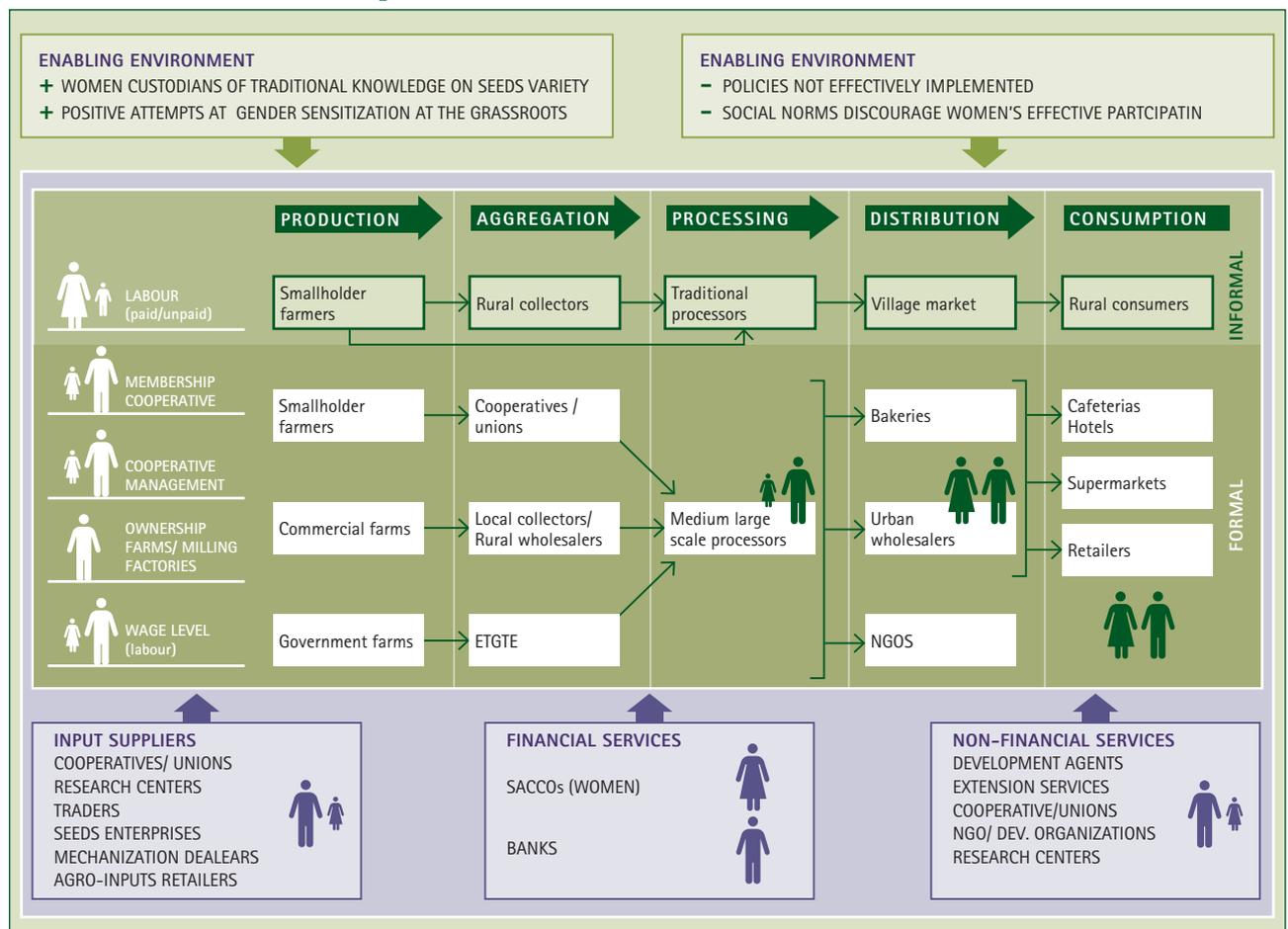
This section provides an overview of the value chain actors in Central-Eastern Oromia that play key roles at different levels of the wheat value chain.

### 2.3.1 Value chain map

Core players in the wheat value chain are producers, aggregators, processors, wholesalers and retailers, and consumers. The below map, which draws on field-based

observations conducted in Central Eastern Oromia, highlights gendered patterns of participation and benefits along the wheat value chain.

FIGURE 13: Gender-sensitive map of the wheat value chain in Central-Eastern Oromia



Source: Authors' elaboration.

### 2.3.2 Production

Central-Eastern Oromia falls within the agro-ecological zones of the Ethiopian highlands and of the Rift Valley that is characterized by a bi-modal rainfall pattern with mean average rainfall of 900 - 1 000 millimetres per year. Temperature variation is low, ranging between 15 - 22 °C throughout the year. Seasons are distinguished by the intensity of rain, which is highest in August and lowest in December. In rain-fed agriculture, precipitation patterns allow for two harvesting seasons: *Meher* (from September to February) and *Belg* (from March to August).

Central-Eastern Oromia is characterised by highland crop-livestock mixed farming system, which is composed by smallholdings for about 90 percent. The remaining 10 percent is state-owned and private large-scale commercial farms.

Both bread wheat and *durum* wheat are grown in Central-Eastern Oromia. Bread wheat accounts for slightly more than half of the area planted, and is generally grown in the highland and semi-highland areas. *Durum* wheat covers about 40 percent of the cultivated area, but reliable information is limited. According to CSA report, there are a total of 816 thousand producers engaged in wheat production on a total harvested area of 504 thousand hectares. Accordingly, the per-capita land availability is 1.6 hectares, ranging from smallholder farmers cultivating limited plots (often less than 1 hectare) to large-scale wheat producers managing more than 100 hectares of land.

In 2016, Arsi, Bale, East Shewa and West Arsi zones combined produced a total of 1.89 million tonnes of wheat over a total area of 504 420 hectares. **Bread wheat** accounts for around 60 percent of the total wheat production. It is more widespread than *durum* wheat due to the availability of higher yielding varieties. Production of bread wheat has registered a 42 percent increase between 2012 and 2016. ***Durum* wheat** accounts for around 40 percent of the total wheat production. Different varieties are produced in scattered pieces of land (approximately 1 hectare) making it costly and difficult for *durum* processors to aggregate sufficient quantities at the desired quality. In addition, the productivity of *durum* wheat is lower than that of bread wheat.

Wheat production and productivity per farm is smallest among the poorest households and rises steadily according to expenditure capacity of the producers, determining the amount of marketable share of wheat produce. Women are heavily engaged in all other crop-related activities including seeding, mowing, weeding and trashing. Notably, women are also involved in harvest, collection and transport to cooperatives as well as to small-scale processors. During the ploughing season, women support men in the field, however their role remains mostly invisible.

Wheat productivity in Central-Eastern Oromia has increased steadily over the past years, reaching yields as high as 3.6 tonnes per hectare, well above the national average which stands at 2.53 tonnes per hectare. The zones producing the largest wheat surplus in Ethiopia are Bale, Arsi and West Arsi in Central-Eastern Oromia, and East Gojjam in Amhara regional state. These four zones generate more than two-thirds of the total wheat surplus across zones.

The yield potential of *durum* wheat is lower than that of bread wheat. On average, the yield for bread wheat in Central-Eastern Oromia is 3.8 tonnes per hectare, while for *durum* wheat is about 3.5 tonnes per hectare. The high productivity of the area is partly due to the ideal climatic conditions for wheat cultivation and partly a result of investments made on extension programs (e.g. best practices and technology utilization) and dissemination of technologies such as improved seed varieties, fertilizers and chemicals.

The majority of large-scale wheat commercial farms are located in Central-Eastern Oromia. Therefore, utilization of improved seed varieties and agro-chemicals is higher than in any other areas. The marketable surplus per hectare is limited for smallholder farmers while it is higher for commercial farmers as a consequence of higher investment in input utilization. As a result, 40 percent of the marketed surplus of wheat is produced by the richest 20 percent of the farmers.

## Production inputs

Wheat producers access seed from three different sources: their own retained seed produced on farm, non-certified seed produced by informal sources, or certified seed obtained from formal sources. According to a study on commercial behaviours of smallholder farmers in wheat seed use, approximately 25 percent of wheat producers are in a state of autarky (i.e. they utilise only seeds produced on their on farm). About half of the producers rely exclusively on external sources of wheat seeds, while about 12 percent are exclusively sellers of wheat seeds (out of approximately 25 percent of net sellers).

Certified seed is purchased from public/private seed companies, cooperatives, and development agencies, whereas non-certified seed comes from informal local sources. Improved seed can be used for two generations (two production cycles) but usually they are not widely available to smallholder producers. The highest yielding varieties (i.e. HAR 1685, HAR 604 and HAR 2536) are all susceptible to wheat rust. Resistant varieties with relatively high yields such as Danda'a and Picaflour are not widely commercialized. Instead, low-yielding rust resistant varieties such as Pavon 76, HAR 3116 Digelu and HAR 1889 are common.

A relatively large share of the wheat-cultivated area is fertilized. According to the Central Statistics Authority, the fertilized wheat area has increased from 54 percent in 2004 to 73 percent in 2014. Pesticides are applied to almost half (47 percent) of the cultivated area.

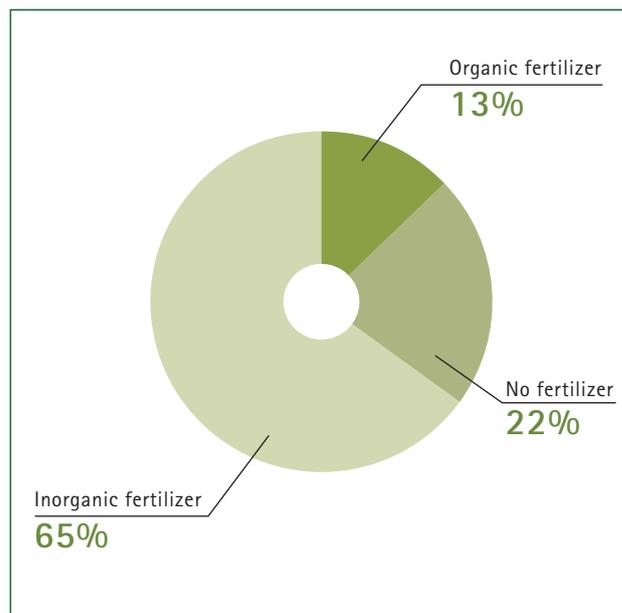
Wheat farmers usually use a generic fertilizer blend (DAP and Urea fertilizers) applied regardless of soil type.<sup>10</sup> In Bale zone, the price of these fertilizers purchased through cooperatives is ETB 1 300 per quintal, while in 2010 it was approximately ETB 600 per quintal. The average application rate is 146 kilograms per hectare.

<sup>10</sup> Soil parameters are needed to determine what is the proper amount of fertilizers to be applied. ATA's Ethiopian Soil Information System (EthioSIS) project gathers and analyses soil samples from each of the country's 18 000 agricultural *kebeles* to develop soil fertility maps and fertilizer recommendations for each region. Since 2012, EthioSIS has completed soil sampling and fertilizer recommendations for the Amhara, SNNP, Tigray, and Harari regions, as well as Dire Dawa City Administration. A regional atlas for Oromia is under production.

Mechanization in Central-Eastern Oromia is advanced compared to the national standards, but is still underdeveloped in general terms. Rental machinery services such as farm tractors, planters, threshers and other farm implements are being introduced in the farming communities. The presence of state-owned and private commercial farms ensure higher mechanization levels in Central-Eastern Oromia compared to other parts of the country. Although the majority of the farmers still cultivate their plots using animal traction, a market for tractors and combine rental is arising in commercial wheat production areas such as Bale zone.

Less than 1 percent of the production area is irrigated. Due to its significant cost, irrigation is usually reserved for high-value crops such as fruits & vegetables and floriculture.

FIGURE 14: **Percentage of fertilized wheat area in 2016 in Ethiopia**



Source: Adapted from BMGF, 2014.



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## Smallholder producers

Smallholders are the majority of wheat producers in Central-Eastern Oromia. They use animal power for ploughing and transporting their produce to the nearest market outlet. Most smallholder producers utilize limited amount of fertilizer, often supplied by cooperatives. In Central-Eastern Oromia, small-scale wheat production is entirely dependent on rainfall. Smallholder producers, depending on their proximity to the markets, directly sell to rural consumers, to primary cooperatives or to local traders/rural wholesalers.

Most smallholder wheat producers are part of primary cooperatives that provide storage, marketing and credit services. According to the Addis Ababa Chamber of Commerce report, smallholder producers sell about 30 percent of their marketable surplus to consumers (i.e. neighbours), 25 percent to local traders, 20 percent to primary cooperatives and the remaining 25 percent to rural wholesales.

## Large-scale commercial farms

Most of Ethiopia's large-scale wheat producers are concentrated in Central-Eastern Oromia, especially in Arsi, Bale and West Arsi zones. On average, they harvest up to 150 000 - 200 000 tonnes of wheat per year. Most of large-scale commercial farms utilize mechanization (e.g. tractors, combine harvesters, etc.) and production inputs such as quality fertilizers, agro-chemicals and improved seed varieties. Commercial wheat producers account only 3 to 5 percent of all producers, with an average productivity of 2.57 tonnes per hectare. State-owned and private commercial farms are engaged in wheat production and, at times, in seed multiplication in their own farms.

### Box 1: Example of a smallholder producer in Central-Eastern Oromia

In Arsi zone, a typical smallholder producer allocates three quarters of the land (approximately 1 hectare) to wheat cultivation (that yields 1.5 tonnes of wheat grain). Approximately 30 percent of the produce is consumed within the household, after being milled into flour at the local small-scale mill, which retains around ten percent of the flour as payment for the service.

The remaining 60 percent of the production is sold either to a cooperative or to local traders, right after harvesting, between October and December mainly. On average, the cooperative pays around ETB 7 000 per quintal.

Since available seeds are usually underperforming, producers save around 10 percent of their yearly production as seeds for the following planting season. In addition, uncertified low-quality seeds are purchased from neighbouring farmers or local retailers. Multipurpose cooperatives provide fertilizers, while pesticides are purchased at the local market.

Source: Direct field observation.

Commercial farmers sell wheat to large traders, millers and urban wholesalers as Central-Eastern Oromia is relatively close to the main urban markets. They have better established relationship with buyers compared to smallholder producers. Also, they supply and distribute improved seed varieties to smallholder producers and cooperatives. Commercial producers are equipped with storage facilities, therefore minimizing post-harvest losses.

### Box 2: Example of commercial wheat producers in Central-Eastern Oromia

Bale Green Spice and Grain Development Plc is an agribusiness firm founded in 2012 in Ginir *woreda*, Bale zone. The company is dedicated to integrated commercial farming of a number of commodities including wheat.

It is located in the Bale highlands where land is fairly plain and suitable for mechanized farming. The total land dedicated to wheat production is 125 hectares, with a productivity of approximately 40 quintals per hectare. The company focuses on bread wheat production, as yields are reportedly higher than *durum* wheat.

Bale Green utilizes adequate production inputs, including DAP and UREA and quality seeds. They source fertilizers from the Agriculture Input Supply Enterprise at ETB 1 300 per quintal (they apply two quintals per hectare), while certified seeds are supplied by the Oromia Seed Enterprise for ETB 1 450 per quintal (they sow two quintals per hectare). The company is now shifting from conventional production to multiplication and distribution of seeds, supplying its out-growers (smallholder producers) in the area.

In 2017, bread wheat was sold to agro-processors at a farm-gate price of ETB 900 per quintal.

Source: Direct field interview.

### 2.3.3 Aggregation

The aggregation node is of key importance in the wheat value chain, especially for rural producers that have limited connectivity with markets. Around 90 percent of storage takes place on-farm, where a variety of different techniques are adopted, most of them semi-modern. Nevertheless, smallholder producers prefer avoid storing their produce within the household for three main reasons: a) immediate cash needs at harvest time; b) dependency on traders who may only come to buy wheat during harvest seasons; c) traditional storage generates losses and product deterioration.

### Local traders

Collectors gather wheat grain from smallholder producers at village markets. They assemble, sort, repack and transport the grain to rural wholesalers located in larger villages and towns. Local collectors are mostly part-time producers or non-licensed traders. These collectors primarily act as the first link between producers and markets.

Often, most local traders act as agents for rural wholesalers. They use their local knowledge (i.e. understanding of surplus areas and prices) to establish linkages with producers. They play a key role in the value chain as they engage in multiple activities like aggregation, transportation and marketing. Physical parameters such as weight, grain filling and admixtures are important for price negotiations.

### Wheat primary cooperatives and unions

Primary cooperatives are registered producers' organizations established with the objective of providing production inputs, better market access and market information, and credit services. Cooperatives in Central-Eastern Oromia usually own storage facilities and aggregate wheat for their members. However, most of these facilities are small and lack a standard design. Value addition activities include cleaning, packing with standard size of containers and transportation.

Cooperatives have the role of increasing producers' bargaining power and obtain benefit from economies of scale. Although they are involved in input supply and in wheat marketing, their role is not as effective as expected and many cooperatives are unable to reduce their transaction costs. Key informants reported that farmers have limited access to pesticides through cooperatives and end up purchasing chemicals privately. While fertilizer is supplied by most of cooperatives, farmers complained about delays in distribution and scarce amounts per plot.

As per the current cooperative policy in Ethiopia,<sup>11</sup> membership is equally open to women and men who meet the requirements.

<sup>11</sup> Cooperatives, societies proclamation N. 895/2016

However, membership in wheat cooperatives remains a prerogative of the head of household, mostly men. The share of women's membership in agricultural multipurpose, seeds and irrigation cooperative is still below the targeted levels. Differently, women heavily outweigh men as members in local saving and credit cooperatives, reflecting their lack of access to other types of financial institutions.

Examples exist of women-dominated cooperatives; in some contexts in Central-Eastern Oromia, these entities offer a safe space for women to operate. However, women's control over resources is still a challenge. As reported by the founder of a female-dominated multipurpose primary cooperative in West Arsi, the task of financial management is yet performed by men given women's low levels of literacy and numeracy.

TABLE 2: Example of women's participation in cooperative actions\* from Bale zone

Type of cooperatives	Number of Cooperatives	Members %	
		Male	Female
Agricultural Multipurpose	361	86	14
Seed Store and Seed Multiplication	45	78	22
Irrigation	32	82	18
Saving and credit	470	15	85

Source: Data provided by the Zonal Cooperative Office in 2017.

\* Data refer to aggregated figures covering all 1 026 cooperatives (not limited to wheat) in Bale zone.



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Box 3: **Example of cooperative actions in Central-Eastern Oromia**

**DURO HULUKA PRIMARY COOPERATIVE**

Duro Huluka is a multi-purpose cooperative in Arsi Negele *woreda*, West Arsi zone. It was established in 2004 by 539 producers (524 men and 15 women). Currently the cooperative works in five villages and counts 874 members (622 men and 252 women). The major crops produced by its members are wheat, maize, potatoes, barley and teff.

The cooperative has a storage capacity of 300 tonnes and distribute seeds and agro-chemicals (e.g. herbicides and pesticides) to its members. Duro Huluka cooperative provides also financing services but, due to limited linkage with financial institution, the cooperative is often unable to fulfil members' demand for input financing.

Output marketing is the first source of income for Dura Huluka, which retains a commission of ETB 20 on each quintal of wheat marketed. In 2017, the cooperative aggregated 632 tonnes of wheat, which was sold at ETB 10 500 per tonne.

Source: Agritererra. Primary Cooperatives Gap Assessment, 2018.

**HETOSA UNION**

Hetosa Union was established in 1999 in Lude Hitosa *woreda*, Arsi zone, with a capital of ETB 125 000. Currently, it has a capital of ETB 80 million. Among other businesses, Hetosa Union purchases wheat from its member cooperatives and, subsequently, sells the assembled and repacked produce to processors like flour factories and food companies through open auctions.

The Union congregates more than 95 000 farmers from seven *woreda* and provides a number of services to its members, including: (i) distribution of agricultural inputs such; (ii) mechanisation services; (iii) transportation services for cooperatives; and (iv) marketing services. The Union also provides training to cooperatives members on good agronomics practises and business management.

Source: Direct field interview.

**Rural wholesalers**

Rural wholesalers are licensed traders who assemble large quantities of wheat in their permanent stores. Some wholesalers in Central Eastern Oromia buy wheat directly from the producers in the market and bring it to different areas in order to resale it. Wholesalers buy wheat in bulk from local collectors and sell it to millers and other processors. They have their own storage system where they keep wheat for a short period until they deliver to end markets.

Rural wholesalers dispose of better storage, transportation means, and communication access than other traders and many primary cooperatives do. Almost all wholesalers have a warehouse in a market either self-owned or on rental basis. In Central-Eastern Oromia, they operate at *woreda* level and are located in the main markets such as Asella and Etaya in Arsi zone. They also often have links with larger wholesalers and processors in cities like Adama, Addis Ababa, Dire Dawa, Hawassa and Shashamane that are big cereal markets in Ethiopia.

Wholesalers' role must not be underestimated as they are key players in the value chain. However their influence on the whole system is, at times, overemphasized. They determine the amount and flow of wheat grain, which indirectly affects the level of price. In effect, they govern the value chain and the other actors subscribe to the rules set in the marketing channel.

Trading activities of wholesalers reach at peak level during the harvesting season. Wholesalers and traders with sufficient storage capacity and capital buy large amounts of wheat grain during this period in order to sell it later during the year when the prices of wheat increase again.

### 2.3.4 Processing

Wheat processing involves a wide range of technologies at different scales, from small-scale (local) hammer mills to large-scale flour factories and processors. The majority of processors are located in East Shewa zone (i.e. Adama, Bishoftu, Dukem, etc.) and in Addis Ababa, Shashamene and Hawassa. According to the Oromia Trade and Investment Bureau, there are 52 large-scale flourmills in Central-Eastern Oromia. On average, flour factories are working under their capacity, nearly between 35–45 percent.

Normally, supply of wheat is high during the *meher* season, while the rest of the year is considered as a slack period during which factories remain idle for most of the time and attempt to fill the gap by purchasing imported wheat from the Ethiopian Grain Trade Enterprise. Through the Ethiopian Grain Trade Enterprise, most of the grain milling industries in the country receive subsidized wheat. Beyond the Grain Trade Enterprise, processors purchase wheat grain also from primary cooperatives/unions and rural wholesalers.

Women also participate in medium and large scale processing, however their duty is confined to activities requiring low levels of responsibility, such as sorting and light packaging. Supervision, quality control and industrial machines operation are tasks generally reserved to men.

At management level, women can cover marketing or accounting roles, however they rarely hold leadership positions. Reportedly, their salary level is commensurate to the level of responsibility they hold.

#### Small-scale millers

Small-scale millers are located in rural areas (at village level) throughout Central-Eastern Oromia. Most of them operates hammer mills with a capacity of 200 – 600 kilograms per hour. The flour is sold to bakeries and food companies, including large-scale processors. Some of these millers are primary cooperatives or development projects, but small-scale local entrepreneurs are the vast majority. On average, small-scale millers employ no more than five people. Around 70 percent of *kebeles* in Central-Eastern Oromia have at least one grain mill, and on average in Central-Eastern Oromia, there are over two small-scale grain mills in each *kebele*.

The totality of small-scale mills in Ethiopia process almost twice as much wheat as the large mills, accounting for approximately 15 million tonnes annually. Small-scale millers process the wheat grain that smallholders produce for their own consumption, which represents about 75 percent of the total domestic production and about 60 percent of total wheat consumed.

#### Large-scale millers and other processors

Large-scale millers tend to be located around urban centres and purchase imported wheat from the Ethiopian Grain Trade Enterprise and domestically produced wheat from rural wholesalers. These factories sell wheat flour to processors (i.e. bakeries, pasta-makers, biscuit factories) and retailers, and institutional buyers such as hospitals and the army. At present, large-scale millers in Central-Eastern Oromia process around 314 000 tonnes per year,<sup>12</sup> although they only utilize 25–35 percent of their potential. Among the 52 large-scale flour factories located in Central-Eastern Oromia, the average capacity is 6 000 tonnes per year.

<sup>12</sup> This figure has been calculated with data provided by the Oromia Trade and Investment Bureau (Table 13), and it is based on the assumption that factories, on average, work at 30 percent of their capacity for 300 days per year.



The wheat purchased through the Grain Trade Enterprise is available at a lower cost than the one available on the market, but quantities are limited and the supply comes with the requirement to sell wheat flour only to selected bakeries at an administratively-determined price. On one hand, this system eliminates uncertainty in supply but on the other hand it distorts the market, reducing profits for processors and fixing prices for bakeries. Usually, millers prefer to buy wheat from local producers as working with the subsidised wheat from the Grain Trade Enterprise results in reduced profits.

In Ethiopia there are 20 pasta manufacturing plants, half of which are located in Central-Eastern Oromia, around major cities such as Adama, Bishoftu and Shashamene. Pasta production covers about 20–30 percent of the production of the country as a whole (150 000 tonnes). However, according to the Italian Agency for Development Cooperation, such production does not meet the pasta demand of the country as 30 000 tonnes of pasta were imported in 2014.

#### Box 4: Example of a large-scale processor in Central-Eastern Oromia

Prima Pasta is a brand of joint companies Jemanesh Plc and Tendaybelt General Trading. They produce a variety of high-quality wheat products such as flour, biscuits and pasta. The factory is located in East Shewa zone, approximately 30 kilometres from Addis Ababa, in the Dukem industrial zone.

The company directly employs 600 people equally distributed between male and female. The factory has two lines processing respectively 140 tonnes and 80 tonnes of wheat daily. As for pasta, Prima Pasta produces 1 100 quintals of short cut pasta and 400 quintals of long cut pasta per day.

Prima Pasta is currently working under capacity due to insufficient supply of wheat, both in terms of quality and quantity. It is equipped with its own milling facilities, but has to source wheat grain throughout the entire country as it struggles to establish stable linkages with wheat suppliers.

*Source:* Direct field observation.

The major producers of wheat by-products are flour mills, engaged in the marketing of wheat bran and wheat middling for livestock feeding purpose. Most of processors are found around Addis Ababa and in East Shewa zone and they engage in feed production using wheat straw and imported vitamins and minerals to be added. Usually, these enterprises purchase inputs through participation in auctions, they process the by-products and sell the compound feed directly to clients with no traders involved.

Most of the feed processing enterprises are operating under capacity estimated at about 20–30 percent. Moreover, they are not technically updated as equipment used is old and rudimentary. Lack of skilled workforce, modern facilities and technology also has an impact on the efficiency on the by-products enterprises.

Feed millers are not regulated in terms of quality standards, hence they often mix various by-products and do not have to include a tag on feed components. Feed processors do not have advanced technology for storage, grinding, mixing, mix formulation or quality control laboratories. Lack of premium price for quality products due to lack of quality standards is also limiting their supply. The current market channels for feed are characterized by the direct sale to individual purchasers such as livestock owners.

### 2.3.5 Distribution

The transportation node influences significantly the level of competitiveness of the wheat sub-sector. In the informal channel, wheat products pass directly from producers to consumers or reach small retail shops in nearby markets and urban areas (when transport is available and affordable) through one or more intermediaries. No license is required to operate, implying low cost of transaction but high producer price compared to formal market operations.

In the formal channel, wheat products are distributed from commercial processors to a wide range of wholesalers and retailers, which handle most of the products to final consumers. Nevertheless, commercial processors can be engaged directly in

wholesaling and retailing. Although, at the moment, the Ethiopian Commodity Exchange trades mostly coffee, sesame and pulses; its founding objectives include the trade of cereals, including wheat.

Women are also present at the marketing and distribution nodes, as owners of small groceries and as salespersons in retail shops or large supermarkets, mainly in urban environments.

### Large wholesalers

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Bulk transportation of wheat is handled by large wholesalers operating throughout Central-Eastern Oromia. These wholesalers purchase flour and wheat products from millers and secondary processors and distribute to retailers such as supermarkets, bakeries, restaurants and cafes, and institutional buyers.

About 53 percent of the wheat is supplied to consumers in the form of flour, pasta and bakery products (bread and biscuits mostly), while the rest is distributed in the form of whole grain, which is then further processed directly by consumers. Sometimes, local and regional wholesalers supply national traders who are located around major cities.

### Ethiopian Grain Trade Enterprise (EGTE)

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The Ethiopian Grain Trade Enterprise has a substantial role in the domestic market, especially at the wholesale level. The Grain Trade Enterprise is state-owned. It is engaged in stabilizing the grain market while earning export revenues. It is a government organization that controls commercial wheat imports and supply wheat to flourmills and other processors at a subsidized rate.

Traders claim that the Grain Trade Enterprise is supplying imported wheat to processors at a lower price than its real value, thus distorting the market. According to the Central Statistics Agency, the wheat supplied by local traders and rural wholesalers to processors is more expensive than the one provided by the Grain Trade Enterprise but its quality is higher than imported wheat.<sup>13</sup>

<sup>13</sup> For example, in 2016/17, the price of wheat in the local market was about 42 percent higher than the one set by the Grain Trade Enterprise, and the quality of the former was much better than the one of the latter (imported wheat).

The Ethiopian Grain Trade Enterprise account for three percent of the total storage capacity, while primary cooperatives for approximately six percent, private traders and cooperative unions for only one percent. A significant portion of the storage capacity of the Grain Trade Enterprise is leased to organisations tasked with providing food security and drought relief.

### Bakeries and other retailers

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Bakeries purchase government quota flour from flour factories at fixed price. The amount of wheat flour varies across places and number of industries per area, according to the size of the market. Generally, since they acquire subsidized flour, bakeries are also required to sell bread at controlled prices. This is a Government policy aimed at making bread more affordable.

Urban retailers (supermarkets, etc.) mostly buy wheat products (e.g. bread, pasta and different types of biscuits and cakes) from wholesalers and large processors and sell it to final customers. In the rural areas, most bread wheat products sold by small retailers are bread (*dabo*), roasted grain (*kolo*), boiled grain (*nifro*), local beer (*tela*), pasta and various confectionary products.

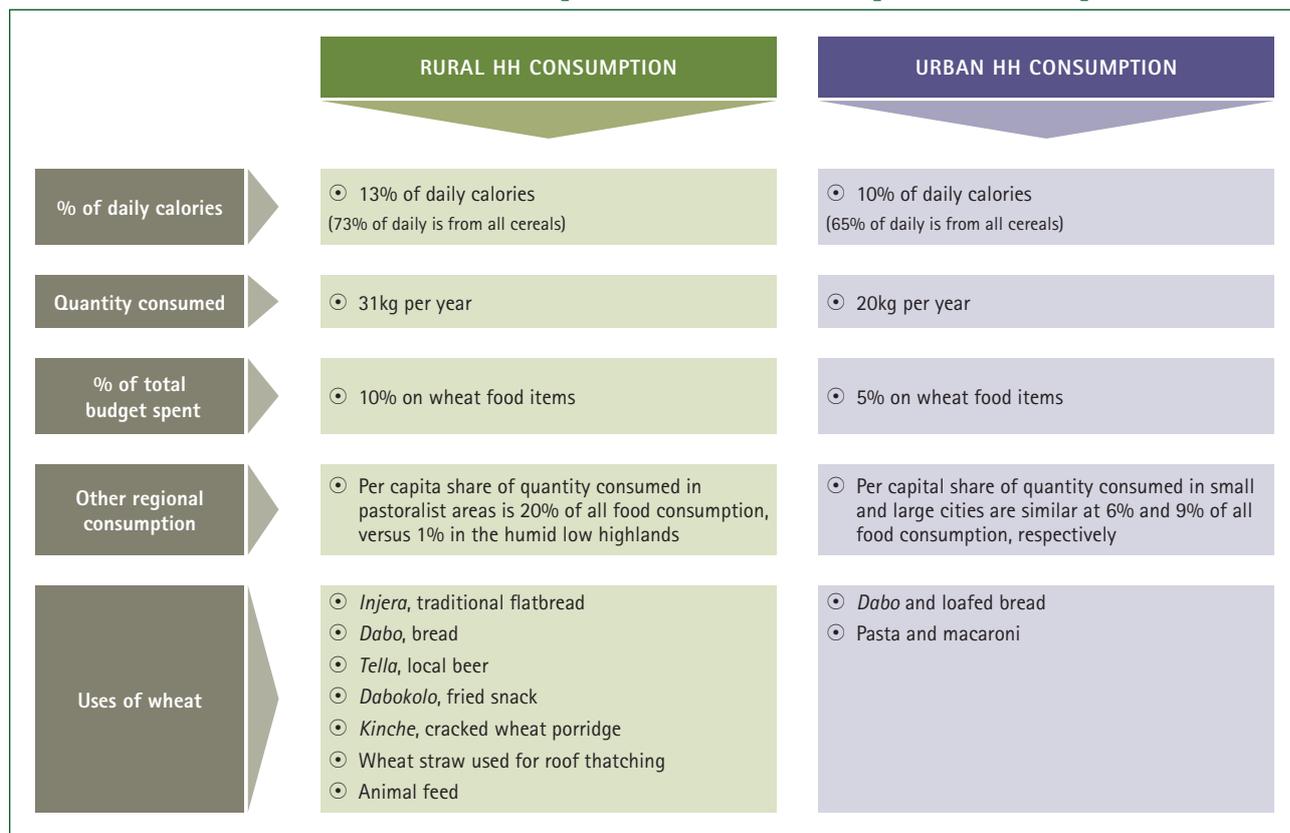
### Consumers

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Wheat products are an integral part of the diet of many Ethiopians, from urban dwellers to rural population. Rural households consume and spend more on wheat products than urban households.

Products like pizza, pasta, bread, biscuits and cakes have a large number of consumers, especially urban, while long-established wheat preparations such as traditional bread (*dabo*), roasted grain (*kolo*) and boiled grain (*nifro*) are very popular among rural areas. Bread wheat is the most used for daily consumption, while *durum* wheat increasingly important to meet processors' demand.

FIGURE 15: Rural and urban household consumption of wheat and wheat products in Ethiopia



Source: Adapted from BMGF, 2014.

### 2.3.6 Physical inputs

Adequate supply of quality inputs at affordable price is absolutely critical for enhancing wheat production and productivity in Central-Eastern Oromia. The largest quantity of improved seed varieties is produced by public seed multipliers and production inputs such as fertilizers and chemicals are supplied by the Government through cooperatives and unions. The Ministry of Agriculture and Natural Resources, Regional and Zonal bureaus of Agriculture and the Ethiopian Seed Enterprise are key players. The involvement of the private sector is limited, as few private suppliers import inputs (including agro-chemicals and farming equipment) and sell them to unions, small wholesalers and retailers.



### Seed suppliers

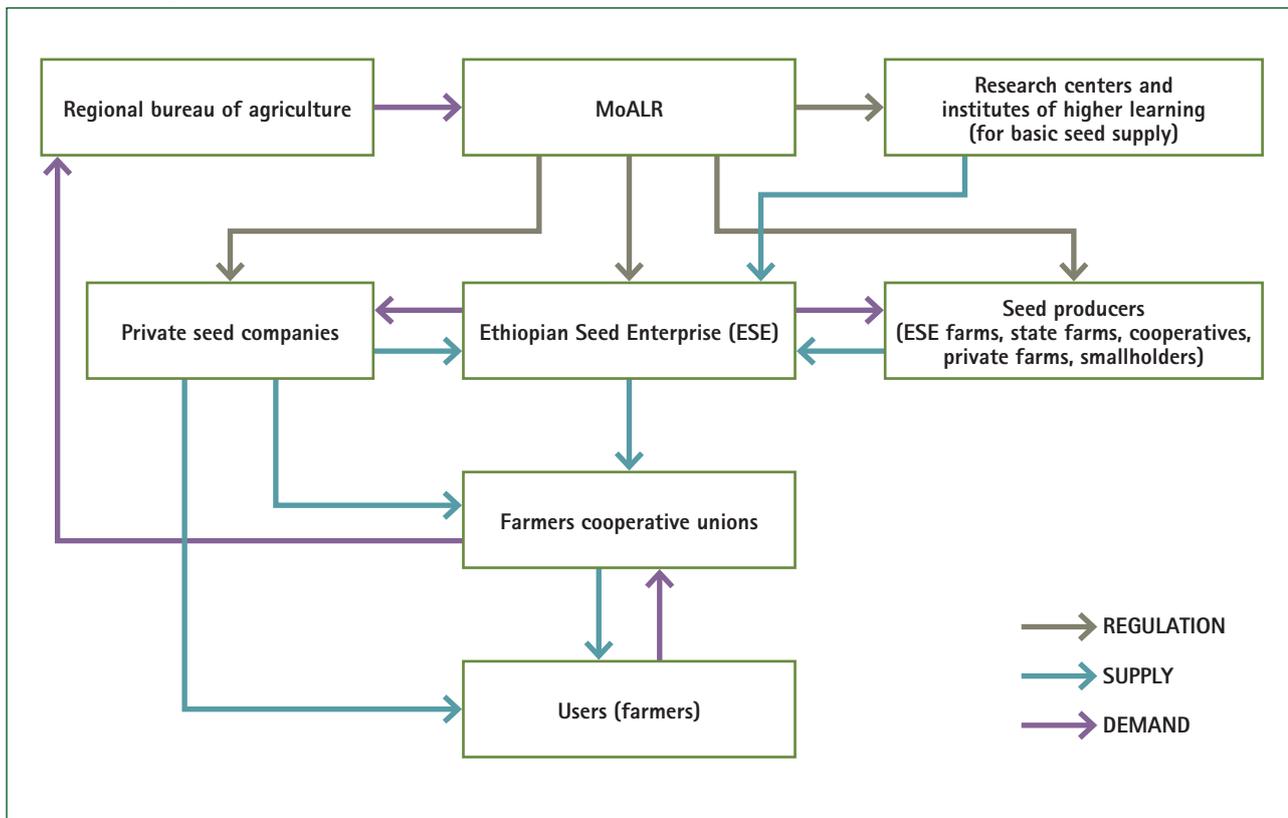
The wheat seed value chain is no less short than the wheat grain value chain itself. In recent years, seed demand has consistently exceeded supply. Commercial farms, cooperatives/unions and individual seed producers are involved in the production of improved seeds, under the supervision of parastatal companies such as the Ethiopian Seed Enterprise and the Oromia Regional Seed Enterprise.

These seed enterprises exercise the double mandate of implementing the government targets to produce sufficient quantities of improved wheat seeds, while functioning as an independently profitable business.

Seed distribution is organized via government-controlled distribution channels. Unions usually collect the seed from the regional warehouses and distribute it to the *woredas* and *kebeles*. They charge for transport, loading and unloading but the profits for seed distribution are limited, as the regional governments determine the profit margins. Some wholesalers are also involved in selling improved seed to producers.

The Ethiopian Seed Enterprise is the principal government agency mandated to conduct quality control, to produce and issue license to others while Agricultural Research Institutions submit a research output base seed to the Seed Enterprise for licensing, production, multiplication and distribution of the approved seed.

FIGURE 16: Organization of the Ethiopian seed system



Source: Adapted from IFPRI, 2011.

## Suppliers of agro-chemicals

The Agricultural Input Supply Enterprise (former AISCO) has the primary responsibility of buying and distributing agricultural inputs, including fertilizers, farming chemicals, different kinds of seeds, plants and animal medicines and vaccines, and laboratory equipment. It operates under the Ministry of Agriculture and Livestock Resources and collates demands, arranges the importation and distribution of inputs with strong emphasis on fertilizers and pesticides.

The major sources of fertilizer for smallholder producers in Central-Eastern Oromia are cooperatives, unions and traders in local markets. Most wheat producers access fertilizers through cooperatives and only a few purchase from traders. Most cooperatives and unions access fertilizers from the Agricultural

Inputs Supply Enterprise. Fertilizer quality and delivery has been improved relatively over the past few years, and farmers have less problems accessing it from primary cooperatives; however, for other chemicals this is rarely the case. Nevertheless, private sector growth is inhibited by the challenges of establishing a private market for fertilizer. Input retailers operate at small shops and spot market in the villages and towns to sell inputs to wheat farmers.

The only fertilizer blending plant in Central-Eastern Oromia is the Tulu Bolo Fertilizer Blending Facility, which was inaugurated in 2014. The plant imports inputs and blend them locally with a maximum production capacity of 100 tonnes per year. The facility is run by the Ethiopian Agricultural Transformation Agency.





### 2.3.7. Non-financial services

The Ministry of Agriculture and Natural Resources and the Oromia Regional Bureau of Agriculture provide training on inputs utilization, marketing as well as advisory services through its extension agents. Non-governmental organizations and development agencies also provide training and advisory services.

The Ethiopian government through its Second Agricultural Growth Program has so far made multiple efforts to support smallholder producers improve their productivity.

Cooperatives and Unions assist farmers in seed production including provision of basic seed, training and supervision, organizing seed groups with the vision of creating sustainable seed production and marketing system. In addition, cooperatives are responsible for linking farmers with input providers and service providers and research institutions. Farmers' cooperatives are also involved in facilitating discussions among members on issues related to input supply, production and marketing and in undertaking some policy advocacy.

Cooperative authorities at *kebele*, *woreda* and zonal level have registered positive results in increasing women's participation as members of cooperatives and as recipients of trainings in an endeavour to achieve the targets set by the Federal Cooperative Agencies<sup>14</sup> aiming at 30 percent women's membership.

NGOs and multilateral organizations also support value chain actors at different levels. They provide a variety of services including technical training and advising regarding physical inputs and marketing strategies. The role of NGOs is often limited to non-financial services as restrictive government policies limit their activities particularly on the topics of importing machinery, financing and agricultural inputs.

The Ministry of Women, Children and Youth Affairs established in 2011 oversees an articulated gender machinery established to translate gender equality and women's empowerment objectives into practices. Gender is mainstreamed horizontally in

<sup>14</sup> Agricultural Cooperatives Sector Development Strategy (2012–2016).

coordination with other line ministries and vertically, from the highest level of federal administration to grassroots associations such as the Women Development Army. Significantly, several continuing initiatives such as forums, annual conferences, platforms, networks and thematic groups are in place to discuss and advance the debate on gender equality and women's empowerment encompassing local, federal, international governmental and non-government organizations as well as grassroots women's associations.

### 2.3.8 Financial services

Financial service providers are essential for the development of the wheat value chain. Micro finance and commercial banks provide very limited loans to farmers and cooperatives in Central-Eastern Oromia. Cooperatives and Unions, for their part, are often unable to deliver credit due to limited finance as well as managerial capabilities.

Farmers need access to financial services namely savings, credit or other tools that would enable them to purchase physical inputs and technologies. Savings and credit are important financial instruments that help maximize small-scale farms and household level investments.

However, this system has had significant challenges due to significant defaults, especially poor areas where there is limited access to financial institutions and, when credit was delivered, farmers used it improperly. Farmers should be empowered in terms of human and financial capacity as they have financial limitation and low management capacity.

Events related to climate change (e.g. rain during harvesting period) may spoil large volumes of produce. The Nyala Insurance Co. was the first firm that introduced farmers' insurance coverage working on micro-insurance and crop insurance for small-scale farmers. The Oromia Insurance Company is the other firm providing micro-insurance services.

### 2.3.9 Technology generation and utilization

There is strong evidence of the positive impact of the adoption of modern agricultural technologies for wheat cultivation. Farmers that adopted improved seed varieties, fertilizers and other inputs reported better yields per hectare and, consequently, increased marketable surplus. The principal limiting factors and barriers to adoption for modern technologies in wheat production are input availability in remote areas, information access, poor agronomy and lack of initial capital to invest.

Ethiopia is the centre of wheat research for East Africa. Wheat research represents ten percent of the agricultural research focus from Ethiopian institutions. Research is fundamental to ensure higher yielding, diseases resistant seeds, suitable wheat varieties for different agro-ecologies and high quality inputs in general. The National Wheat Research Programme aims at achieving national wheat self-sufficiency and food security, with the extended goal to be the leading wheat technology, knowledge and information source for the African continent.

At national level, the Ethiopian Institute of Agricultural Research has the mandate to generate, adapt and promote agricultural technologies that are required to enhance agricultural productivity. It is responsible for seed multiplication and import. Improved seeds are supplied to the Ethiopian Seed Enterprise, which operates quality controls and issue certifications. In Central-Eastern Oromia, there are a number of regional research institutions actively involved in wheat research, such as the Kulumsa Agricultural Research Centre in Arsi zone, the Debre Zeyit Research Centre in East Shewa zone, and the Sinana Agricultural Research Centre in Bale zone.

The Kulumsa Agricultural Research Centre is one of the main research centres in Central-Eastern Oromia and coordinates wheat research in Ethiopia. The Centre is responsible for providing basic seed for different crops and crop varieties to the Seed Enterprise. It has produced 70 wheat seed varieties and owns over one thousand hectares of land for demonstration and seed multiplication. Similarly, the Sinana Agricultural Research Centre owns land for seed multiplication and demonstration with special emphasis on *durum* wheat.

The Institute is making remarkable progress in providing improved seed and training to farmers. Up to present, more attention has been given by researchers to improve genetic potential of bread wheat, including a number of studies on suitable agronomic practices for higher crop productivity in Central-Eastern Oromia. Given the greater research attention, higher yielding varieties than *durum* wheat were developed, resulting in bread wheat being the preferred choice for producers.

In addition to the crop research centres, there are agricultural mechanization research centres such as Asella and Melkasa, which focus in the production of agricultural machinery prototypes and testing imported machineries.

### 2.3.10 Value chain governance and linkages

The wheat value chain involves many actors from production to distribution. Most of play facilitation roles with very limited value addition. They determine the amount and flow of wheat grain, which indirectly affects the level of price. In effect, they govern the value chain and other actors subscribe to their rules.

There is no strong linkage between producers and other actors in the value chain. Processors and primary cooperatives/unions can incentivize quality production, stabilize wheat supply and guarantee markets but contractual agreement between suppliers and buyers is not very common. Overall, governance of the wheat value chain is buyer-driven with minimum trust between actors in which manufacturers lack the confidence to deal with suppliers or farmers as there is almost no system of governance in which contracting parties are held responsible for their actions.

The value chain is characterized by a disproportionate share of benefits among the actors. Producers receive a small share (around 16 percent) of the profit margin, while aggregators and distributors (i.e. collectors, wholesalers, and retailers) jointly share around 33 percent of the profit margin. There are too many intermediaries between producers and processors resulting in the absence of strong linkages between the two nodes of the value chain. Timely information on the price of wheat, available technologies and other services that would

improve the quality and quantity of wheat either is absent or fragmented among the key actors.

The linkage between research institutions and producers is minimal or non-existent. As a result, the knowledge of farmers on farm technologies generated by the research institutions remains inadequate. Improved wheat seed varieties produced in research institution is mainly supplied to a limited amount of farmers while the majority of producers are hardly reached and rely on their own seed and from individual suppliers through the informal market.

The Ethiopian seed system is governed by policies stipulated in the public proclamations and regulations that were put in place in the early 1990s. The main responsibility of implementing these policies is given to the Ministry of Agriculture and Livestock Resources at the federal level and to the Oromia Bureau of Agriculture at the regional level.

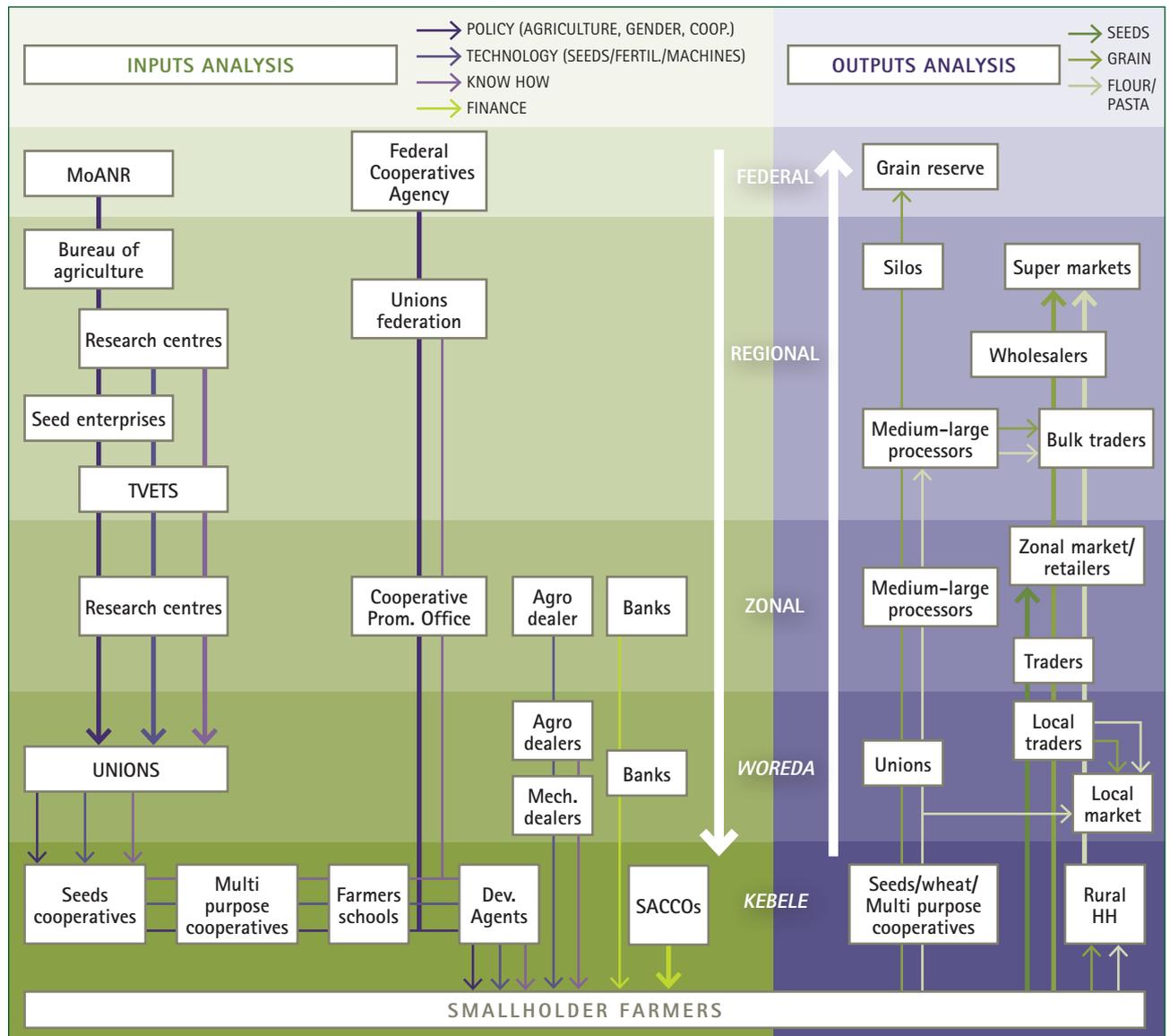
The Crash Seed Multiplication Programme was launched during the 2008/09 production season. The main objective is to alleviate the serious supply shortage of improved seeds, particularly hybrid maize. The Program is run by the National Seed Multiplication and Distribution Committee comprised of members from the Ethiopian Institute of Agricultural Research, the Ethiopian Seed Enterprise and the Marketing Directorate of Ministry of Agriculture and Livestock Resources. As a complimentary this Program, the Ethiopian Seed Enterprise and the Oromia Seed Enterprises, in collaboration with the Oromia Bureau of Agriculture, are implementing the Farmer-based Seed Multiplication Strategy.

The Government of Ethiopia is determined to promote gender equality and women's empowerment. Its commitment is explicit in the Federal Constitution (1995), in the National Policy on Women (1993), the National Action Plan for Gender Equality 2006-2010<sup>15</sup> and the Ethiopian Women's Development Package<sup>16</sup> and by being a signatory of relevant international legal instruments and frameworks on the subject. Central-Eastern Oromia is characterized by a remarkable ethnic and religious diversity, implying a multiplicity of patrimonial and

<sup>15</sup> Ministry of Women's Affairs, 1993

<sup>16</sup> Ministry of Women and Children, 2006

FIGURE 17: Wheat value chain governance map



Source: Adapted from IFPRI, 2011.

customary laws, social norms and practices and religious beliefs. The degree to which the above policies translate into practices, depends significantly on the level of individuals' adherence to informal institutions and social norms refusing or accepting gender equality. Notably, sectoral policies, proclamations and regulations (a list of them is included in Table 14) state commitments and actions which are relevant to address the

specific gender-based constraints identified by this analysis at the core and extended value chain levels. Moreover, imported wheat is highly subsidized and price is regulated by the government which distorts the price of wheat and wheat products along the chain. Sixty percent of grain stocks are held by the Ethiopia Food Security Reserve Administration for use in emergencies.



# PART 3

# SYSTEMIC CONSTRAINTS AND UPGRADING OPPORTUNITIES

This section analyses and discusses major constraints related to all the dimensions of the wheat value chain in Central-

Eastern Oromia. It pays specific attention to the gender-based constraints emerging at each node of the value chain.

## 3.1 CONSTRAINTS RELATED TO THE CORE VALUE CHAIN

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Below are discussed major constraints at production, aggregation, processing and distribution nodes.

### Production-related

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**3.1.1** Quality wheat seeds are of key importance for producers. Nevertheless, the production of **improved seeds** is inadequate. Demand estimates are biased resulting in shortcomings in seed availability and timeliness of delivery. Moreover, often quality does not meet the required

standards and the utilization of non-certified seeds results in significantly reduced productivity. It is common practice for wheat producers in rural areas to purchase low-quality (old) seeds from informal market channels.



**3.1.2** The high price of **fertilizers** (and lack of finance for inputs and machinery) severely affects wheat production in Central-Eastern Oromia. Smallholder producers either refuse to purchase inputs or applying inadequate amounts of fertilizer per hectare. The frequency of wheat diseases and weeds is a major issue. There is limited availability – both quality and quantity – of **pesticides and fungicides**<sup>17</sup> and wheat producers have limited knowledge on types and dosage, application techniques, timing, etc. resulting in the use of the same type of chemicals repeatedly, allowing pests and diseases to develop resistance.

**3.1.3** In addition, producers in rural areas have insufficient knowledge of **good agronomic practices** (e.g. weeding, harvesting, etc.) and input packages are not utilized at recommended levels, resulting in low yields and poor quality of wheat. Prices are discouraging producers to grow *durum* wheat, which has lower productivity and requires more intensive management practices than bread wheat.

**3.1.4** Also, affordable farm **mechanization services** are rarely available (most smallholder producers use animal traction) and less than one percent of the land is under **irrigation**.

<sup>17</sup> Nevertheless, in the last decade, wheat has been the cereal crop with the highest rate of pesticide treatment in Ethiopia.

## Aggregation, processing and distribution

**3.1.5** Adequate **storage facilities** (including community-based warehousing) are generally missing along the wheat value chain, especially in rural areas. Often, producers are forced to sell their wheat at low farm-gate prices due to the lack of storage. Inadequate infrastructure for aggregation of wheat grain is the main reason for quality deterioration and **post-harvest losses**, with implications on prices and sale volumes.

**3.1.6** Also, **transportation** is particularly important in the wheat value chain because production is highly concentrated in Arsi, Bale and West Arsi zones – and because of the seasonality. In particular, *durum* wheat is produced mainly on scattered pieces of land, resulting in more costly aggregation practises compared to bread wheat. As wheat smallholder producers are geographically dispersed, transportation costs are very high. Poor logistics and transportation practices influence post-harvest losses as well.

**3.1.7** Seasonality affect the production volumes available to processors. In rural areas, most of the smallholders are highly dependent on rain-fed agriculture, which influences harvesting. In addition, due to seasonality, market demand suffers of severe fluctuations throughout the year. Also,

there is hardly any **quality consistency** of both bread and *durum* wheat along the value chain. Producers bring different varieties to the market place, where local traders often mix different types of wheat.

**3.1.8** Generally, **flour mills** in Central-Eastern Oromia face problems in purchasing bread wheat in the desired quantity and quality because local traders tend to mix different qualities of wheat grain (the scarce quality of the raw product resulting in lower flour extraction rates). Most

**processing factories** are working under capacity as the availability of quality *durum* wheat in the market is limited and there is scarce quality consistency.

**3.1.9** Processors face a lack of continuous supply of adequate **packing material** (also considering the high demand for small-sized products of several different brands, especially for pasta and biscuits). In addition, wheat processors lose on average 10-15 percent of their production due to **power cuts** during the manufacturing process.

## 3.2 CONSTRAINTS RELATED TO THE EXTENDED VALUE CHAIN

The performance of the value chain is influenced also by aspects that are out of the control of the core value chain actors, such as provision of quality inputs, availability of extension/advisory services, and policy aspects. In addition, governance issues (i.e. linkages and coordination) can limit the possibility of actors to take on certain activities along the wheat value chain.

### Support services

Business development support providers play an essential role in facilitating the value chain process. Challenges related to support services contribute to the inefficiency and ineffectiveness of core value chain actors.

**3.2.1** The quantity of **seed produced** in Ethiopia does not satisfy the current demand and the quality is hugely compromised (e.g. incorrect varieties and mixed batches of seeds) along the supply chain, which involves too many actors and therefore is difficult to control. Nevertheless, the involvement of the private sector is limited because of the provision of large government subsidies to the public Ethiopian Seed Enterprise.

**3.2.2** There is a lack of an adequate **seed supply system** from seed enterprises and a lack of independent dealers. Growth of a private seed sector is inhibited by the difficulty in predicting the demand accurately (as most producers in rural areas use retained seed for planting).

**3.2.3** The majority of inputs are imported but the **agro-chemical supply and distribution system** is inadequate, hindered by logistics (isolation of smallholder producers and poor transportation system) and market constraints, resulting in excessive prices and ultimately in unsatisfactory yields. Often, due to lack of efficient logistic services, fertilizers do not reach farmers before planting time.

**3.2.4** Generally, **primary cooperatives** have limited financial and managerial capabilities. Often, they have a weak organizational set-up. When available, managers do not have sufficient competencies (e.g. business and entrepreneurial skills) required to compete in the wheat value chain, and conflict of interest is common. As a result, they are not able to bring forward producers' issues.

**3.2.5** The capacity and resources of the public **extension system** are too limited to meet the demands of rural wheat producers. There are problems in the delivery of trainings as well as in monitoring and follow-up from local Development Assistants. The type of support is not specific on wheat production techniques and input utilization as well as on post-harvest handling of wheat grain.

**3.2.6** **Research centres** lack quality laboratories with adequate equipment, facilities related to seed production, processing and storage. They also lack adequate trained professionals specialized in seed development research and technology. Availability of qualified experts is key to ensure



the supply of pre-basic and basic seeds. Specifically, there is limited investment in **durum wheat research** and the number of improved varieties released is low. Only limited success has been achieved so far by research centres in multiplying high volumes of *durum* wheat for wider access from producers.

**3.2.7** Access to **information** (e.g. market as well as agronomic and weather information) is limited and communication mechanisms remain largely traditional (i.e. latest ICTs, which are widely adopted in other countries, have not yet made their way into rural communities and the extension system). Similarly, support and follow-up received by smallholder producers from cooperatives and unions is very limited.

**3.2.8** Access to **credit and finance** is a major limiting factor for all wheat value chain actors in Central-Eastern Oromia. Financial institutions are present in major urban centres and only a minority of smallholder wheat producers have linkages with formal sources of finance. Micro-finance institutions provide limited support and, in addition, face

financial constraints and have limited competencies on agricultural-related issues. Finally, smallholder producers cannot afford **insurance products** in order to safeguard their crops from natural hazards.

### Business enabling environment

A number of issues affect the business environment: government policies, development partners' activities, regulations and programmes related to land, markets, trade, food safety and quality and public infrastructure, among others.

**3.2.9** The government policy to **estimate demand and supply** based on *woreda* and regional bureaus' evaluation is inadequate, so the supply of improved seed consistently falls short of demand. Official projections are developed at the local level (*kebele*) and then aggregated nationally to produce estimates of the type and quantity of seed that needs to be supplied in the coming season. This process results in a rough estimate based on the original requirements without considering shifts in demand.

**3.2.10** Contractual agreements are not very common and the absence of appropriate mediation and arbitration mechanisms is affecting the quality, quantity and price of wheat. The absence of legal-binding agreements and the lack of a clear laws and policies enforcement mechanism affect directly the income of value chain actors; the informality of the selling-purchasing agreements implies unguaranteed end-market opportunities for producers. **Out-grower schemes** are hardly implemented because there is no regulatory framework.

**3.2.11** The domestic market is strongly influenced by the large volumes of **subsidized wheat** imported by the Ethiopian Grain Trade Enterprise. The Grain Trade Enterprise's mandate to safeguard consumers' needs by maintaining low prices is exposing smallholder producers to significant economic losses, since cheap wheat import and subsidized supply to processors and institutional buyers depresses the domestic market demand. This sends a negative signal to local producers influencing their decision to further **invest** in wheat cultivation. In addition, The Ethiopian Grain Trade Enterprise's mandate is often conflicting with the Government's directive to increase domestic wheat purchasing.

**3.2.12** Limited access to finance significantly limits the potential of producers in the rural system to emerge from informality. Limited **working capital** is a major bottleneck for large-scale commercial producers as well. They hardly obtain credit from development banks due to the high risk attributed to rain-fed agriculture, considered unreliable. As a result, commercial producers access credit through commercial banks with higher interest rates and challenging repayment timing.

**3.2.13** The market is affected by **financial settlement problems** related to verbal purchase and sale agreements. Because of such problems and other contract defaults the wheat market is characterized by frequent intervention of courts to settle such disputes.





## Value chain governance

Often, there is a lack of coordination and synergies between the public and private sectors, and this affects the efficiency and competitiveness of the value chain.

**3.2.14** Producers are a broad base of men and women that participate in the value chain as main actors, but have limited or no influence over decisions and governance issues. A general lack of an **entrepreneurial approach** translates into a tendency to depend on external aid and support. In Central-Eastern Oromia, this attitude varies based on location, gender and education level.

**3.2.15** Often, there is a lack of **synergies** between the public and private sectors, and this affects the efficiency and competitiveness of the value chain. On one hand, Government's control and intervention does not encourage the participation of the private sector in the extended value chain and, in some instances, is crowding out private investments; on the other hand, private actors do not want to get involved in what is perceived to be the scope of Government' services. Also, **cooperative policy** is largely determined by the Government, but the role of cooperatives and unions in making policies is currently minor.

**3.2.16** Insufficient **coordination** among smallholder wheat producers negatively affects their bargaining power and increases marketing costs as producers often conduct transactions individually. Also, proactive communication, joint efforts and preparations are lacking between value chain actors and support institutions.

**3.2.17** In Central-Eastern Oromia, business agreements are largely informal and written contracts between producers and buyers are nearly non-existent. The lack of **formal business linkages** between processors and producers hinders the supply of the required quantity and quality of wheat. Smallholder farmers are forced to rely on informal market outlets within a short distance from the production area, selling at low farm-gate prices in order to avoid large amounts of post-harvest losses.

**3.2.18** Margins are fairly tight across the entire wheat value chain. There is **low vertical integration** along the value chain. Since there is little or no meaningful interaction and relationships between wheat producers and processors, the gap is filled by **non-value-adding actors** that control

prices in the market and complicate the supply chain, with implications on the quantity and the quality of wheat grain along the supply chain. Intermediaries boost their margins by imposing low prices and often cheat on weight measures and disregard verbal agreements with producers.

### 3.3 CONSTRAINTS RELATED TO THE ENABLING ENVIRONMENT

Core value chain actors and support providers in the wheat value chain operate in a particular national enabling environment (e.g. socio-cultural elements, institutional elements, organizational elements, infrastructural elements, and natural environmental elements).

**3.3.1** In general, **government officials** at zonal, *woreda* and *kebele* level may not be equipped with sufficient information and/or technical capacities to adequately support implementation of strategies.

**3.3.2** At national level, sometimes policy objectives are not accompanied by **adequate strategies** detailing how to practically implement required actions. For example, there are no incentives for the Ethiopian private sector to promote the **formalization** of the wheat sub-sector and to address the price and quality issues of both bread and *durum* wheat at every step of the value chain.

**3.3.3** At international level, there has been several intermittent **bans on cereal exports** from Ethiopia in response to domestic price increases. The Government is restricting imports as well, and there is not any private sector grain import beside the state-owned Ethiopian Grain Trade Enterprise.

### 3.4 GENDER-BASED CONSTRAINTS AND CHALLENGES AT INDIVIDUAL AND HOUSEHOLD LEVELS

Gender dynamics influence the way individuals interact in the economy and, therefore, the way value chains work. Several factors challenge smallholder farmers, both women and men, in their endeavour to seize opportunities within the value chain. Women though are disproportionately affected. Gender inequality is a major challenge for women to fully participate and benefit from development endeavours in the wheat sub-sector.

Established gendered patterns might contribute to reinforcing existing inequalities. Gender-based constraints reduce opportunities for business expansion as well as for income

diversification (e.g. through processing and value addition).<sup>18</sup> Notably, these hamper opportunities not only as individual actors but also as households. This section presents an insight into the varied socio-cultural context of Central-Eastern Oromia, highlighting challenges and gender-specific constraints at individual and household levels that affect performances and profitability of the value chain.

<sup>18</sup> As observed during field-based interactions with wheat producers in Central-Eastern Oromia, the extent to which women and men have access to knowledge, inputs, assets and the visibility of their work in agriculture has much to do with an issue of identity. More specifically, with their identification (or lack of) as farmers within the household, as a productive unit, and within rural communities in general. The identity factor is connected to decision making dynamics within the household and conditions of access to value chain governance structures.



**3.4.1** Local traditions and norms play a critical part in shaping women and men's roles. They also contribute to determine the extent to which individuals participate and benefit from wheat-related activities. Inequalities in terms of division of labour vary highly from urban to rural areas and depend on education levels, religious and cultural background, adherence to social norms, exposure to training and good practices, and gender awareness. A **patriarchal socio-cultural set-up**, particularly present in rural areas of Central-Eastern Oromia, is one of the key causes of women's limited power and agency.

**3.4.2** Limited education of men and women is another major challenge. Children in rural areas tend to start their **education** at the age of seven, when they are strong enough to walk long distances to reach the school. According to key informant interviews, girls are more likely than boys to drop out of school. As reported, the reasons for girls to abandon their education include the need to contribute to heavy household chores and, in some cases, early marriages.<sup>19</sup>

**3.4.3** Heavy work burden, unbalanced diet, early pregnancies, harmful traditional practices and harassment expose women to a number of **health challenges** that may hamper their effective involvement in productive activities; these include fistula and HIV/AIDS. The heavy workload involved in reproductive and productive tasks and the prevailing societal expectations confine rural women to the homestead.

**3.4.4** Wheat production is considered a male activity. Nevertheless, women are involved in most productive tasks throughout the year (including family chores), while men's workload is aligned with crops seasonality, with relatively light engagement off-season. Hence, generally women are exposed to a much **heavier work schedule** than men.

For example, ploughing is the only one exclusively

<sup>19</sup> The legal age of marriage in Ethiopia is 18 years for both girls and boys, but this law is not always enforced. Key informants reported that in certain areas of Central-Eastern Oromia girls get married as young as 14-15 years old. Ethiopia's Criminal Code outlines special provisions to punish the perpetrators of early marriage. However, Ethiopia has no functional national or regional system to register births, deaths, marriages, and divorce, making it difficult for authorities to prove that a girl is under-age.

conducted by men, while women are heavily engaged in all other crop-related activities including seeding, mowing, weeding and trashing.

**3.4.5** Women's access to inputs and technologies is directly related to whether or not they are perceived as farmers. In some contexts, economic benefits are appropriated by the male head of household and women have **lower access to productive resources** than men. Women in male-headed household and in polygamous marriages are particularly affected. Despite the legal provisions of federal and regional laws envisaging joint **land certification** of husband and wife, existing customs favouring male dominance still hinder women's effective access to and control over land.

**3.4.6** Women's access to knowledge and skills development is limited and usually confined to traditionally gendered domains and tasks. Women are not targeted strategically by service providers and extensionists<sup>20</sup> and, generally, men are those enjoying the greatest **benefits from extension services** in part due to women's mobility constraints. In male-headed households, women tend to have limited access to capacity development interventions and to improved agricultural technologies and packages promoted by the extension system. As a result, women's knowledge tend to be empirical and/or anecdotal. In addition, counselling and training services might be offered without considering **women's preferences** in terms of time and location of training thereby limiting women's opportunities to participate. This systematically prevents women from engaging in diverse, more productive and profitable activities.<sup>21</sup>

<sup>20</sup> Significant inequalities are related to the higher prevalence of male extensionists. Often, within the household extension services are provided to men on the assumption that they will pass the knowledge acquired to their wives, but this seldom happens in reality. Also, it is considered inappropriate for extension agents to approach women farmers and to talk to women alone.

<sup>21</sup> As reported by extension services, those women having accessed training activities, displayed higher levels of participation and interest than men, and endeavoured to immediately translate the acquired knowledge into practice. This may indicate a different predisposition of women and men toward initiative and resourcefulness.





**3.4.7** Household's dynamics affect women's effective participation and representation in rural institutions, organizations, and public life as well as their access to resources. Men are generally in **control over production benefits**, they can claim membership in cooperatives and make strategic decisions on seeds adoption mainly based on their access to training and extension services. Except for female-headed households, **control over monetary gains** from the sale of wheat remains a male prerogative, as men are those typically responsible for undertaking economic transactions. Women though are left in control of the marginal profits deriving from other gendered farming activities.

**3.4.8** Generally, women's participation as **members of cooperatives** is low and they are almost absent in management and leadership positions. Generally, women prefer joining informal groups or women's associations. Also, structured observations at medium- large processing factories highlighted women's involvement in actions requiring a low level of responsibility and physical effort (e.g. sorting and packaging). Women with a secondary level of education or higher are present in management positions (sales and accounting) but generally do not cover **leadership roles** nor are present in the boardroom.

**3.4.9** Access to finance opportunities for farm expansions and diversification remains a challenge for both women and men, although women are more disadvantaged.<sup>22</sup> Husband or wife alone cannot access credit without consent from each other; this limits women's ability to make independent decisions on how to invest the money but also it guarantees re-payment at household level. The **availability of collaterals** remains the biggest challenge, particularly for women as limited ownership of assets and the need to obtain the husband's consent to present land as collateral poses an additional barrier to access formal finance institutions such as banks. In addition, women's limited education triggers a sense of inadequateness to approach financial institutions.

**3.4.10** Finally, the lack of official **gender-disaggregated data** poses limits in terms of baseline assessments and gender analysis. In the absence of this type of data it is hard to picture the actual contribution of women in the wheat value chain as well as to monitor the impact of interventions from a gender perspective.

<sup>22</sup> A study conducted by FAO in 2016 revealed that female-headed households received smaller amounts of credit than male-headed households from either a bank or cooperative.

### 3.5 OPPORTUNITIES FOR UPGRADING

The opportunity to upgrade the wheat sub-sector in Ethiopia exists in terms of the product and/or the process by which the product is developed (i.e. operational upgrading). In addition, there are functional opportunities and channel upgrading opportunities.

There is untapped potential for increasing production and productivity of the wheat value chain in Central-Eastern Oromia, in order to satisfy the growing domestic demand of manufacturing industries and eventually export wheat at a regional level, once domestic demand is fully satisfied. The **informal market** (especially in rural areas) represents an untapped opportunity, and shifting from the informal to the formal channel will have benefits on efficiency of the value chain and on traceability (including quality and safety) of wheat and wheat products.

The piloting of the **Integrated Agro-Industrial Park** in Central-Eastern Oromia will create formal market opportunities in the near future for producers located within the Agro-Commodities Procurement Zone, and will represent a means to develop the wheat value chain. Also, the Park will facilitate stronger backward and forward linkages between producers and agro-industries, providing incentives to boost production, productivity and quality. High-quality interaction among actors will help to explore new sources of competitive advantage and unique value addition experiences.

Technology and operations' innovations are important capabilities that will enable wheat producers and processors to capture the value of wheat in the domestic and export markets. Modern **technologies** will enable producers to boost their productivity. Wheat producers need to acquire small and appropriate, multipurpose farm machinery to boost their productivity. Technologies and wheat varieties should be developed by considering producers and processors requirements. Sustainable **innovations** have the potential to improve food security and economic gains along the value chain. For example, technological innovations such as the Ethiopian Soil Information System give the country the edge in soil mapping techniques, optimizing the use of fertilisers by wheat producers.

Ethiopia's **domestic wheat consumption** is larger than any other Sub-Saharan country and it is only set to increase due to the rapidly growing population, increasing urbanization and rising incomes, presenting huge market opportunities for high quality processed wheat products. In addition, wheat products are preferred food items in many neighbouring countries. In terms of export, both **Sub-Saharan and Middle Eastern markets** are easily accessible for Ethiopia, which, due to his strategic geographic position, could supply these two areas with comparative advantage over other countries.





Gota Jambaa  
1. Kadd. 2. Dambadi. 30  
3. Kadd. 4. Gumbaa. 30  
5. Kadd. 6. Xofii. 30  
7. Kadd. 8. Bala. 40  
9. Kadd. 10. Ashara. 10  
11. Kadd. 12. Yisice. 10

# PART 4

# STRATEGIC INTERVENTION PLAN

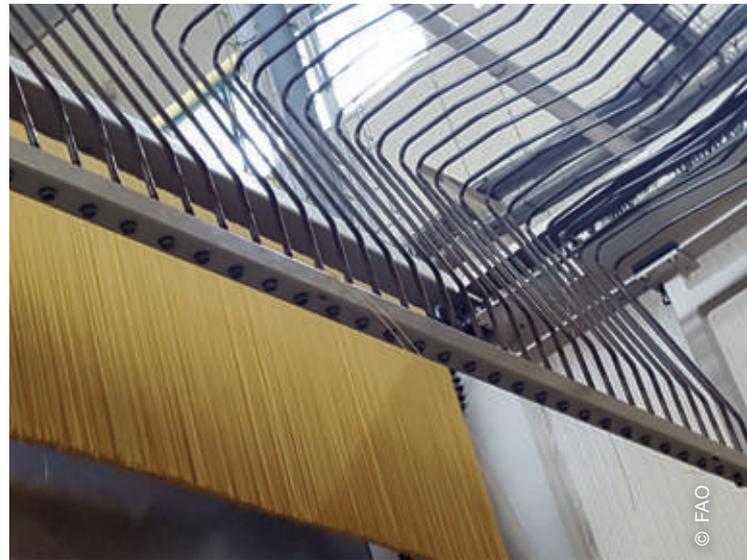
This section begins with the Vision and Targets (4.1) for the development of the wheat value chain in Central-Eastern Oromia. It details the envisaged Development Strategy (4.3) to

address the systemic constraints identified in Part 3, and sets specific targets to be achieved by 2020. Finally, it proposes an Intervention Plan (4.4) for public and private actors.

## 4.1 VISION AND TARGETS

By 2020, promote rapid and sustainable growth of the wheat sub-sector in the Agro-Commodities Procurement Zone of the pilot Integrated Agro-Industrial Park in Central-Eastern Oromia, through:

- ◉ **enhancing production & productivity** of both smallholders and commercial wheat producers to attain Government's targets set for the Second Growth and Transformation Plan 2015-2020 period; and
- ◉ **strengthening commercialization** for the supply of quality grain to wheat processors (especially millers) and for the substitution of imports of both bread and *durum* wheat products (e.g. bread, biscuits and pasta).



#### Box 5: Government targets related to the wheat sub-sector in Central-Eastern Oromia

In the Four Years Strategic Plan (2017–2020) for the Supply of Raw Material to the Integrated Agro-Industrial Park in Central-Eastern Oromia, the regional Government has set the following targets to be achieved during the Second Growth and Transformation Plan 2015–2020:

- Increase wheat productivity from 37.6 quintals per hectare to 47.6 quintals (increase wheat production from 18 965 370 quintals to 25 682 883 quintals);
- Increase the total cultivated area of seven percent (from 504 420 hectares to 539 549 hectares);
- Increase the supply of crop products by cooperatives from 29 849 949 quintals to 38 860 970 quintals;
- Increase the number of cooperatives from 410 to 554 (increase of 36 cooperatives per year) and the number of cooperatives' members from 99 712 to 119 654 (increase of 4 985 members per year);
- Distribute 770 251 quintals of crop seeds, 1 184 415 quintals of chemical fertilizers and 1 391 635 litres of insecticide to producers;
- Distribute 16 tractors and eight combiners to cooperatives and construct five new warehouses per year (20 new warehouses in total) to enhance collection of raw material.

In November 2016, the Ministry of Agriculture and Natural Resources set the following national targets for the wheat sub-sector to be achieved during the Second Growth and Transformation Plan 2015–2020:

- Increase production of bread wheat from 26.4 million quintals to 37.82 million quintals and production of *durum* wheat from 15.9 million quintals to 24.26 million quintals;
- Increase productivity of bread wheat from 26 quintals per hectares to 39 quintals per hectares and productivity of *durum* wheat from 24 quintals per hectare to 35 quintals per hectare.

#### Specific targets

The Strategy and Intervention Plan are aligned with the Government's plan for the development of the wheat sub-sector (bread and *durum* wheat) within the pilot initiative of the Integrated Agro-Industrial Parks (see Box 5).

Accordingly, specific targets for the wheat sub-sector in Central-Eastern Oromia can be set as follows:

- increase the volumes of production** of wheat by 36 percent, to reach approximately 2.57 million tonnes in 2020 (1.42 million tonnes of bread wheat and 1.15 million tonnes of *durum* wheat), on a total cultivated area of 540 000 hectares (seven percent increase);
- raise average productivity** of wheat by 27 percent, to reach on average 4.8 tonnes per hectare for bread wheat and 4.4 tonnes per hectare for *durum* wheat in 2020; and
- strengthen formal market linkages** (especially through cooperative actions) to increase the volume of quality wheat grain available to the industry by 166 percent in 2020; thus, enabling agro-processors to work at least at 80 percent of their capacity (annual supply of approximately 879 000 tonnes of wheat required).

#### 4.2 SWOT ANALYSIS

This SWOT analysis focuses on the wheat value chain in Central-Eastern Oromia, highlighting the main findings from literature review and direct field observation.

TABLE 3: Strengths and Weaknesses of the wheat value chain in Central-Eastern Oromia

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> <li>⦿ The wheat sub-sector has economic relevance and potential for employment creation;</li> <li>⦿ Central-Eastern Oromia is the best performing area in terms of wheat production and productivity;</li> <li>⦿ The Government has an ambitious plan of increasing production and productivity of wheat and a clear vision for transforming the agricultural sector through the creation of Integrated Agro-Industrial Parks;</li> <li>⦿ There are institutions and project/development partners supporting already the wheat sub-sector;</li> <li>⦿ The wheat value chain is relatively well developed and there are established agro-processing companies and new investors interested in the sub-sector;</li> <li>⦿ There is an existing culture of wheat production and consumption of wheat products; and</li> <li>⦿ There are Government policies favouring women's participation and gender equality.</li> </ul>	<ul style="list-style-type: none"> <li>⦿ Production and distribution of improved seeds is limited and not adequate to the demand;</li> <li>⦿ There is limited involvement of the private sector in the supply and distribution of inputs;</li> <li>⦿ The cost of inputs is high, resulting in inadequate use of quality seeds, fertilizers and chemicals;</li> <li>⦿ Lack of knowledge of smallholder producers about good farming practices and limited support from extension services;</li> <li>⦿ Production is not commercially-oriented and the informal market is dominant;</li> <li>⦿ Poor quality of wheat grain and wheat flour;</li> <li>⦿ Access to the formal market is very limited and there is a lack of incentives toward market formalization. Also, most producers are not well connected to processors through formal business arrangements;</li> <li>⦿ There is lack of appropriate post-harvest handling technologies and aggregation facilities;</li> <li>⦿ Existing collection facilities (especially cooperatives) lack adequate storage/warehouse facilities;</li> <li>⦿ Prices paid to rural producers are not commensurate to costs of production and transportation;</li> <li>⦿ Linkage between research institutions and smallholder producers is weak;</li> <li>⦿ There is lack of working and investment capital and limited access to credit and financial services;</li> <li>⦿ There is lack of clear policies (on quality, prices, etc.) that could support smallholder producers; and</li> <li>⦿ Service providers (public and private) lack expertise on gender issues to address inequalities and to encourage conducive intra-household dynamics.</li> </ul>

TABLE 4: Opportunities and Threats of the wheat value chain in Central-Eastern Oromia

OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> <li>⦿ Agro-ecological conditions are favourable for wheat production;</li> <li>⦿ The sustained growth and the positive economic outlook of Ethiopia are favourable to investments in the wheat sub-sector, among others;</li> <li>⦿ There is availability of relatively cheap labour, mostly unskilled;</li> <li>⦿ Research and academic institutions engaged on enhancing production and productivity of wheat;</li> <li>⦿ Population growth and the increasing urbanization favour consumption of wheat products;</li> <li>⦿ The wheat sub-sector is very relevant to women and women's empowerment; and</li> <li>⦿ The establishment of the Integrated Agro-Industrial Park will provide market opportunities for wheat value chain actors.</li> </ul>	<ul style="list-style-type: none"> <li>⦿ There are unreliable climatic conditions due to climate change;</li> <li>⦿ Rust disease is widespread and new wheat diseases are emerging;</li> <li>⦿ Land fragmentation and population increase pose threats for adoption of mechanization and investments in productive assets;</li> <li>⦿ There is a mismatch between supply and demand of wheat due to the seasonality of harvest;</li> <li>⦿ Government involvement and subsidies discourage investments from the private sector; and</li> <li>⦿ The large share of imported and subsidized wheat versus the local marketed production sends a negative signal to local producers.</li> </ul>

## 4.3 DEVELOPMENT STRATEGY

With enhanced production and productivity, Central-Eastern Oromia can significantly contribute to the achievement of national goals (both for import substitution and for export) and

set national standards for harnessing the unexpressed potential of the wheat sub-sector in Ethiopia.

TABLE 5: Projected increase in wheat productivity in Central-Eastern Oromia

	2015	2016	2017	2018	2019	2020
Bread wheat (t/ha)	3.8	4.0	4.2	4.4	4.6	4.8
Durum wheat (t/ha)	3.5	3.7	3.9	4.1	4.2	4.4

A modern and efficient wheat sector in Central-Eastern Oromia should be promoted as well through public and private investments in commercialisation (i.e. formalization of the sector and quality enhancement). All interventions must be anchored in a market-driven approach, with strong links between producers and processors.

### 4.3.1 Enhancing production & productivity

Production and productivity enhancement should be realized by targeting both smallholder and commercial producers through: (i) supply of quality production inputs – i.e. seeds, fertilizers and chemicals – and increased irrigation; (ii) improved capacity of value chain actors, including mechanization; (iii) increased quality and coverage of extension/advisory services; and (iv) gender-specific interventions.

#### i) Production inputs and irrigation

Agricultural inputs play a critical role in increasing production and productivity of crops. Adoption of **input packages** can significantly improve productivity for farmers. There is need to implement a system to coordinate and track the timely delivery of inputs to producers, thus avoiding misdistribution. Also, access to finance for the purchase of full packages should be promoted.

Increase production of **quality seeds** (high yielding and rust resistant varieties), as well as supply and distribution to smallholder producers should be a top priority in order to develop the wheat value chain in Central-Eastern Oromia. The large-scale implementation of Direct Seeds Marketing is suggested. There is a need to accelerate the development and release of **rust-resistant varieties**; hence, the capacity of research institutions should be enhanced and more attention should be given to *durum* wheat research.

Promotion of an entrepreneurial attitude instilled at individual and household level is likely to vitalize the production node, as well as to encourage women and men into seed production and allied business activities. The Government needs to attract private investment and create the conducive environment for a **seed industry** (production and certification) to grow. Moreover, the new land use policy will need to ensure that enough land is available for seed production.

Increased availability of **fertilizer** at an affordable price will have a positive impact on wheat productivity. In addition, smallholder producers need to have enhanced access to **agro-chemicals** such as pesticides, herbicides and fungicides.

The Government should identify potential areas for irrigated wheat production and promote medium- and large-scale farming under irrigation. Expansion of small, medium and large **irrigation schemes** in areas with high potential for wheat production will contribute towards sustainable supply of

wheat grain to processors. Public-private partnerships should be encouraged in order to mobilize the substantial amount of capital required for these investments.

## ii) Improved capacity of wheat producers

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Improved input usage and agronomic practices, along with enhanced community aggregation and marketing and with post-harvest handling techniques, will provide the biggest profit lift for smallholder producers.

Exposure to **good agronomic practices** is paramount. In particular, focus should be on topics such as soil use and fertility management (including fertilizer application), crop rotation and row planting, and crop protection (e.g. Integrated Weed Management and Integrated Disease Management). Improved crop protection techniques will enhance the ability of prediction of outbreaks, thus strengthening the capacity of producers to address most common pests and wheat diseases. Awareness should be created on the optimal use of **input packages** (considering specific agro-ecological conditions), including the correct use of improved seeds and fertilizers (e.g. amount of fertilizer that is compatible with the variety of seed, etc.). Existing options for input financing (e.g. the use of vouchers, etc.) should be scaled-up to reach more wheat producers in an efficient manner.

Capacity development should be accompanied with the introduction of **time- and labour-saving technologies** that enhance quantity and quality of production (including post-harvest technologies), while alleviating women's work burden in particular. Exploiting the full benefits of modern technologies will require increased investments and adequate policy support.

The expansion of availability and affordability of **mechanization** will have a remarkable impact especially on smallholder producers. The use of mechanization should be encouraged through favourable loans, taxes and incentives to the import of machinery to producers and producer organizations. In addition, there is a need for expanding agricultural **mechanization services** in order to enhance wheat production and productivity.

The Government should facilitate and coordinate **linkages** between research institutions and core value chain actors to make technology available and accessible, especially to smallholder producers in rural areas. Also, **technology transfer** and producer-research-private sector linkages should be promoted.

## iii) Extension/advisory services

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The Government should increase investments on agricultural extension system, for example through public-private partnerships. Expansion of **extension services' coverage** will improve the capacity of smallholder producers in the application of good agronomic practices and the utilization of technologies, ultimately improving their production and productivity. This should be linked to increasing the number of **specialized extension workers**, either public or private.

**Farmers Training Centres** need to be organized with necessary material and equipment for trainings and on-farm demonstrations. General training curricula shall be revised to be wheat-specific and to include a business development component, geared toward the promotion of business-oriented farming. Also, it is important to promote capacity development through the **Technical Vocational Education and Training schools** to produce sufficient professionals with specific knowledge of the wheat sub-sector.

Access to **knowledge and information** are fundamental to enhance the competitiveness of the wheat value chain. To facilitate sharing of information on good practices and technologies, and to improve linkages between producers and research institutions, **Information Communications Technologies** and other means of communication (radio programs, road shows, extension bulletins and leaflets, etc.) should be promoted.



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#### iv) Gender-specific interventions

The gender dimension is critical especially in rural areas because of the **key role of women** in the wheat value chain. The establishment of Integrated Agro-Industrial Parks offers a unique opportunity to integrate existing grassroots structures with new services which are gender responsive and entrepreneurship-oriented.

A more **equal engagement** of women and men will be the primary driver to stimulate productivity and competitiveness from the grassroots. It will be important to promote **gender sensitization**, to mitigate underlying stereotypes and social norms and lay out opportunities beyond traditionally gendered roles,<sup>23</sup> perhaps complementing technical assistance and inputs to farming communities with awareness sessions.

<sup>23</sup> Notably, according to the UN Women's Preliminary Gender Profile of Ethiopia, the need to take up gendered roles at household level often hinders the ability of girls to participate and perform at higher levels of education.

The implementation of **gender-responsive strategies** (i.e. supporting women-headed business activities, gender-specific financial inclusion and creation of gender-specific common interest groups) is of critical importance for the development of the wheat sub-sector and the attainment of the goals set by the Government for the Second Growth and Transformation Plan 2015-2020.

Dedicated initiatives fostering **equal access to resources** (i.e. training, information, technology, infrastructure, and credit) should be included in all Government's capacity development interventions. Coupled with this, institutional capacity development should be promoted as well. Gender **equality in service provision** can be promoted by sensitizing public and private service providers as well as suppliers on the productivity gains of women's empowerment. Creating **women-only cooperatives** should be considered in given contexts, in order to allow women to safely work and thrive.

For women to gain full benefit, there is need to foster an **entrepreneurial approach** (i.e. reinforce women's marketing, negotiation, leadership and sales skills to favour their involvement in economic transactions and empower them as effective value chain actors) that is coupled with **access to credit** that allows them to set up small businesses. A **fair distribution of economic gains**, will be central to a value chain that is more inclusive, efficient, productive, profitable and sustainable.

### 4.3.2 Increasing commercialization

In order to increase the volumes of quality wheat grain that is purchased by processors in Central-Eastern Oromia, producers and aggregators must be able to meet market conditions. Therefore, a strategy to promote commercialization should focus on: (i) standardization, certification and quality control of inputs and wheat grain; (ii) promoting formalization and business-oriented production among smallholders and facilitate market linkages as well as access to credit and financing; (iii) reinforcing management skills and business orientation of cooperatives; and (iv) ensuring adequate technologies, equipment, machinery and agro-infrastructure for aggregation, storage, transportation and processing.

#### i) Standardization, certification and quality control

The establishment and enforcement of **quality standards** is crucial to make more quality wheat available for processing and to ensure that producers can get a fair price for their products. In this regard, the capacity of federal and regional institutions to control and certify quality standards of wheat seeds and grain should be strengthened. **Standardization** and avoidance of market fragmentation should be obtained as well through the involvement of the private sector.

Focus on quality should be of uttermost importance as quality products deliver higher sales and better prices. An efficient and functional **quality control system** (including certification)

will provide an incentive to producers. Pricing should motivate producers and aggregators to improve their pre- and post-harvest practices, also minimizing post-harvest losses and reducing waste. For example, **quality-based grading** will help to determine market prices and will enhance commercialization through a formal channel that demand higher quality products than the informal one.

#### ii) Business orientation of value chain actors

Due to the dominant smallholder structure in Central-Eastern Oromia, vertical integration in the rural system is economically infeasible, and this results in mutual dependence between producers and processors. A **trust-based relationship** between buyers and suppliers will be critical to ensure stability in market access and to secure adequate flow of wheat along the supply chain, reducing the number of middle-channel actors that don't create meaningful value. Improvement of relationships between rural producers and cooperatives is also a vehicle for improving quality and lowering marketing costs - for instance through collection, storage, embedded services and quality management.

Producers' organization should enhance their role in output marketing and value addition. In addition, primary cooperatives and unions should transfer knowledge and capacities to smallholder producers, specifically aiming at a **business-oriented approach** that should result in increased efficiency of production and post-harvest practises, as well as widespread use of technology and inputs. Once quality is enhanced and standardized, producers will be able to engage in **contract farming** with processors strengthening formal market linkages and stabilizing prices.

The Government should aims at providing incentives towards the **formalization** of the market. For example, improving market outlets for rural wheat producers will strengthen the formal value chain. Stronger **horizontal and vertical linkages** along value chain actors (with particular attention to business arrangements at the aggregation node) will be crucial to achieve efficiencies and improved value chain competitiveness. For example, the creation of **Business Service Centres** run by cooperative members to link producers to an array of service

providers<sup>24</sup> could be quite effective and inexpensive (services can be also paid on a check-off basis).

Value chain **governance** issues should be addressed through open dialogue, transparency and accessibility of information. Market power needs to be distributed along the value chain and there is need for an efficient system with effective enforcement mechanisms that will facilitate a smooth business environment. Also, a **stakeholders' forum** involving key actors should be promoted with the aim of discussing existing policies, strategies and measures as well as implementing actions in a concerted and coordinated way.<sup>25</sup> Relevant institutions should be empowered to operate a **policy monitoring system**, producing relevant evidence and informing future actions.

Availability of data and information on prices, market trends, on the market demand for wheat and wheat products should be increased and facilitated. Since price is determined by supply and demand, it is important to promote a reliable, up-to-date and consistent **market information system**, and supporting investments on Information Communication Technologies for marketing and market infrastructure, in order to avoid asymmetry of market information between value chain actors.

Banks and microfinance institutions should be eager to lend to producers and cooperatives, in view of the profitability of the wheat sub-sector. They should improve their **credit policies** (e.g. alternatives to collateral-based lending, support for business plans for enterprises with earning potential, etc.) and enhance provision of **credit facilities** and **insurance products** to wheat producers. Meetings between producers and financial institutions should be promoted especially in rural areas in Central-Eastern Oromia, and **financial education** should be improved to enable smallholder producers becoming reliable clients for formal financial service providers.

<sup>24</sup> Business Service Centres should operate as "business hubs" aimed at equipping women and men with a) key information on market prices, demand and marketing opportunities particularly within the IAIP initiative, b) skills to operate their farms and households with a business-oriented approach in the light of increased efficiency and productivity, c) direct access to external service providers for input packages and mechanization services.

<sup>25</sup> This forum will provide an opportunity to identify those policy-driven practices which have proven particularly effective at the grassroots level, as well as critical success factors to build upon. For instance, gender sensitization sessions involving women and men have reportedly contributed to improving division of labour at household level.

Financial institutions should offer accessible **loans and savings services** with a higher value proposition, based on the needs of wheat producers. Also, the government should provide incentives to form local **savings groups**, such as Rural Savings and Credit Cooperatives.

### iii) **Capacity of producers' organizations**

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Primary cooperatives and unions can play a pivotal role in the improvement of commercialization in the wheat sub-sector. In particular, **cooperatives and unions** represent suitable environments where the entrepreneurial spirit of women and men can be stimulated and nurtured. Most cooperatives in Central-Eastern Oromia are lacking initiative and in-depth expertise on business-related matters and should be empowered in terms of **managerial skills**. Also, cooperatives need to be well-managed, better organized, producer-oriented and more attuned and responsive to the needs of women. In particular primary cooperatives need to move towards a market-oriented approach, in order to increase their members' access to the formal channel.

**Collection centres** need to be close to production areas (at kebele level) to facilitate delivery from producers and to expand access for processors to remote areas. With a view to support women to emerge from informality, geographic location of collection points and processing facilities is particularly important.

Cooperatives should be strengthened to facilitate **linkages with external providers** of production inputs, mechanization services and credit by negotiating the best possible conditions. In addition, should work together through unions of cooperatives to optimize their potential and be able to exploit the available market outlets. Also, cooperatives should function as **information sharing hubs** and stakeholders' platforms, promoting discussions among members as well as exposure to other value chain actors, Government agencies and key service providers.



#### iv) **Equipment, machinery and agro-infrastructure**

A variety of **localized businesses** can be promoted to serve wheat producers, processors and transporters that vitalize the local economy and create employment. These may include insurance agents, machinery shops and repairers, packaging companies, training halls, day-carers for children, etc. Business organizations should have incentives to create professional **business hubs** that will provide all the required production inputs and services in one place. For example, advice by skilled consultants can contribute to better return on investment when developing new enterprises or when optimizing existing businesses.

The Government should encourage private sector participation in the fabrication, supply and distribution of **machinery and small-scale farm implements** in Central-Eastern Oromia. Research and Development activities should be strengthened and expanded to meet the growing demand for technologies

that will enhance production and productivity of wheat. Availability of modern equipment should be accompanied by the required **knowledge and technical skills**. In addition, there is potential for developing the **packaging material** industry.

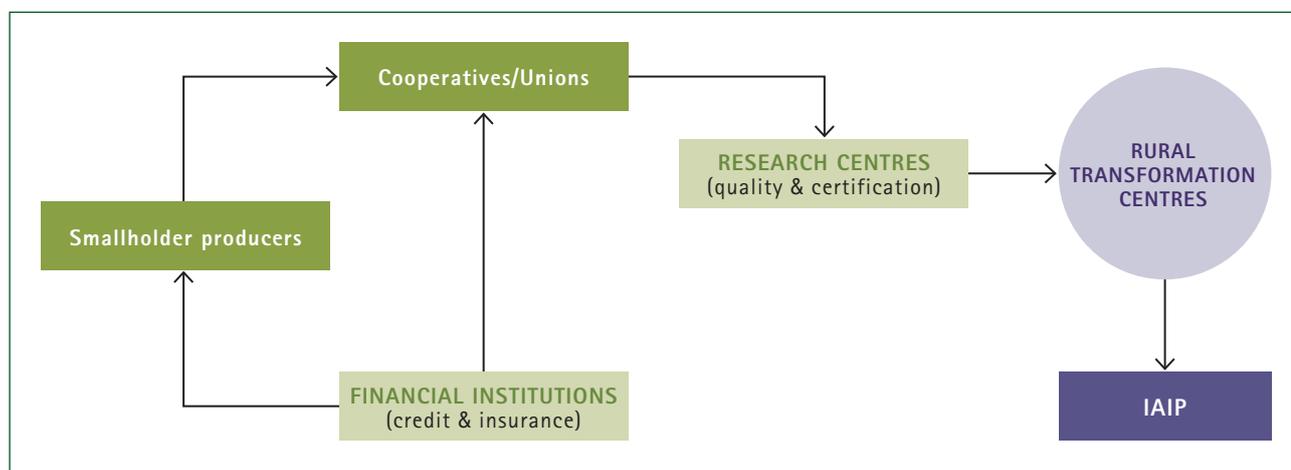
The overall level of **agro-infrastructure** needs to be improved, including reliable supply of electricity and other utilities. For example, adequate access to improved storage facilities and awareness on appropriate storage techniques will reduce significantly the level of post-harvest losses that characterizes the wheat value chain. Emphasis should be put into introducing **bulk transport systems** in order to optimize the supply chain and to reduce transport and transaction costs, thus providing incentives to rural producers. Dedicated **policies** should be developed in this regard. For example, development of feeder roads and localized (community) storage facilities is paramount.

## 4.4 INTERVENTION PLAN

The scale, the relationships and the capabilities of main actors along the value chain need substantial improvement. In order to address the systemic constraints identified in Part 3, and to realize the vision and the strategy detailed in Section 4.3

above, an integrated and concerted effort is needed (through public and private investments with complementary national and regional policies) between the Government and private actors in the wheat value chain.

FIGURE 18: Proposed development model for Central-Eastern Oromia



Source: Authors' elaboration.

### 4.4.1 Public sector and Development Partners

At present, the involvement of the public sector in the wheat sub-sector is massive. The Government directly supports research institutions, producers' organizations and other value chain actors, and is investing heavily in improved grain storage in many parts of the country. Rationalizing the institutional set-up and the utilization of resources from Government initiatives such as the Second Agricultural Growth Program will improve public services delivery.

The role of the Government (federal and regional) should be mainly limited to: (i) oversee extension/advisory services and support capacity development of value chain actors; (ii) conduct technology testing/adaptation and research; and (iii) create a conducive regulatory environment through policies, incentives and standards.

To overcome the existing challenges in Central-Eastern Oromia, the Ministry of Agriculture and Natural Resources and to the Oromia Bureau of Agriculture and Natural Resources should strengthen their capacity to coordinate value chain actors. Non-Governmental Organizations and Development Partners should coordinate with the Government and ensure that synergies are created with existing and upcoming initiatives, in order to align all efforts towards the achievement of the vision set for the wheat sub-sector.

In addition, Government and Development Partners should have a limited role in the governance of the value chain, but can play a vital role in mediating between stakeholders to create relevant and suitable governance mechanisms.

## Government services

In regard to **quality seeds**, the capacity of the Ethiopian Seed Enterprise and the Oromia Seed Enterprise should be strengthened, in terms of facilities as well as human resources, to improve the quality and quantity of bread wheat and *durum*

wheat seeds produced, stored and distributed. In addition, the Government should facilitate private wheat seed multipliers, to complement quality seed production and distribution in Central-Eastern Oromia.

TABLE 6: **Targets for wheat seed production for Central-Eastern Oromia during GTP-2**

	2016	2017	2018	2019	2020
Total improved seeds <sup>A</sup> (tonnes)	7 560	8 673	9 786	10 899	12 012 <sup>B</sup>
Improved bread wheat seeds (tonnes)	4 536	5 204	5 872	6 539	7 207
Improved <i>durum</i> wheat seeds (tonnes)	3 024	3 469	3 914	4 360	4 805

<sup>A</sup> At present, improved seeds constitute only 10 percent of the total wheat seeds used by smallholder producers in Central-Eastern Oromia.

<sup>B</sup> Based on the following: (i) the recommended quantity of seed (broadcasted) per hectare of 150 kilograms; (ii) the projected wheat cultivated area of 540 000 hectares in Central-Eastern Oromia by 2020.

The capacity of The Ministry of Agriculture and Natural Resources and Oromia Bureau of Agriculture and Natural Resources need to expand service coverage and improve the quality of **extension services** by availing a sufficient number of specialized extension workers at *woreda* and *kebele* levels, which will provide the necessary advice and mentoring to wheat producers in Central-Eastern Oromia. In particular, Government extension services should focus on increasing producers' technical knowledge as well as enabling them to access adequate inputs and finance.

The Ministry of Agriculture and Natural Resources should organize Training of Trainers in order to increase the number of qualified extension workers (men and women) through the existing network of 25 Technical Vocational Education and Training schools. In addition, synergies should be created with the on-going Second Agricultural Growth Program that has a strong focus on extension services.

A large-scale **capacity development** program targeting high-potential producers and producers' organizations, as well as input/service providers will be necessary to address, with a gender-sensitive<sup>26</sup> approach, the production and marketing challenges identified and to instil the entrepreneurial and business-oriented attitude necessary to stimulate the development of the wheat sub-sector in Central-Eastern Oromia. The existing network of 1 340 Farmers Training Centres in Central-Eastern Oromia should be used for training.

Youth and young graduates' entrepreneurship should be promoted to encourage the growth of a thriving value chain-allied industry. Study visits to other countries could be organized for different stakeholders (producers' organizations, Government institutions, etc.) for learning and benchmarking purposes.

<sup>26</sup> Government's gender officers should focus in particular on: (i) basic gender concepts and their integration in value chain development, as well as in household methodologies; (ii) implementation of existing gender policies; (iii) business-oriented and gender-sensitive cooperative establishment, management and development; and (iv) primary cooperatives as community development hubs.

Government investments should also be focusing on public infrastructure (i.e. market places near producers) and rural connectivity (e.g. roads, etc.), as well as on enabling the main value chain actors to develop an effective logistics system.

Finally, the government should gradually withdraw from distribution of subsidized imported wheat and substitute it through local wheat purchase, to encourage domestic producers.

TABLE 7: Intervention plan for Government services

Strategic intervention	Responsible institutions	Expected outputs	Estimated cost (ETB)
Enhance public supporting capacity through trainings	MoANR, Oromia BoANR	Wheat-specific curricula developed and training to specialized extension workers delivered	11 017 500 <sup>A</sup>
Enhance capacity of producers and cooperatives through training and mentoring	MoANR (through FTCs), ATA, CPO, etc.	Training of 337 500 wheat producers (through appropriate packages at FTCs) <sup>B</sup> on best production practices and business-orientation/entrepreneurship	3 678 750 000

<sup>A</sup> The estimated cost for a 15-days training course for one extension worker is ETB 7 500. Normally, there is one crop extension worker per kebele, and each extension worker undergoes one refresher course training per year.

<sup>B</sup> Each Farmers Training Centre can accommodate 5-days training rounds conducted by seven trainers for batches of 20 model farmers and 3 extension workers. The estimated cost per round is ETB 218 000, which might be covered partially by farmers through a training fee.



## Research & Development

The research system should generate appropriate technologies (e.g. improved varieties, which are disease-resistant and highly performing in terms of yield) through a demand-based approach with strong links to the extension system.

Federal and regional institutions should partner with national and international research organizations to **identify, test and adapt existing technologies** that are adapted to the specific context of Central-Eastern Oromia, while establishing advanced laboratory and related facilities to **undertake strategic research**.

Research and Development activities need to be strengthened to meet the growing demand of the industry in terms of technologies. For example, research centres need to focus on varieties of bread and *durum* wheat that have great potential for marketing and processing. The Ethiopian Institute of Agricultural Research - and its regional branches in Central-Eastern Oromia - should play a key role in this regard.

TABLE 8: Intervention plan for Research & Development

Strategic intervention	Responsible institutions	Expected outputs
Strengthen linkages between research/ academia and value chain actors	MoANR, ATA, EIAR, OARI/ universities, ESE	<ul style="list-style-type: none"> <li>⊙ Bottlenecks along the wheat value chain identified and addressed</li> <li>⊙ Existing information, studies and available research mapped and divulged from institutions to value chain actors</li> <li>⊙ Improved capacity of the research centres to produce and disseminate improved seeds</li> </ul>
Conduct research and testing of new technologies	EIAR, OARI (KARC, DZRC, SARI, etc.)	Identification, testing and introduction of new disease-resistant and well-performing wheat varieties

### Policies and regulations, standards and incentives

Conducive **policies and regulations** should recognize and reward good achievements and take corrective actions on poor performance and ensure accountability, ultimately enhancing employment creation and improving access to resources and services. The creation of a supportive investment climate and legislation for contracting out agreements with reduced bureaucratic obstacles is paramount, especially towards the establishment of competitive seed and agro-processing industries.

Concerning **standards**, the Ministry of Agriculture and Natural Resources should provide the institutional setup and build

human capacity at regional level for enforcing certification guidelines and procedures for wheat and wheat products. The Quality and Standards Authority of Ethiopia should promote wheat quality and grading standards, in collaboration with other public and private actors. In addition, law enforcement mechanisms for quality control should be improved.

Concerning **incentives**, the Government should promote the expansion of private sector's investments in production, processing and service provision. Youth- and women-led businesses should be promoted as well.

TABLE 9: Intervention plan for the Business Enabling Environment

Strategic intervention	Responsible institutions	Expected outputs
Strengthen the enabling environment through enforcement mechanisms and new policies and regulations	MoANR, Mol	Public-private platform established for stakeholders (e.g. producers and industry associations) and policymakers to strengthen governance of the wheat value chain
Strengthen quality control, standards and certification of products	MoANR, Mol, QSAE, FMHACA	Mandatory standards for products, inputs, machinery and equipment (ISO, <i>Codex Alimentarius</i> , etc.) promoted and enforcement mechanisms (testing, sampling, etc.) strengthened
Encourage participation of the private sector through adequate incentive mechanisms	MoANR, Mol, EIC	<ul style="list-style-type: none"> <li>⊙ Enabling environment for investments from seed producers and commercial wheat processors established</li> <li>⊙ Establishment of private laboratories and testing facilities to ensure quality control and certification encouraged</li> </ul>

Periodic **Monitoring and Evaluation** mechanisms (e.g. sex-disaggregated data collection, recording and analysis, reporting, feedback and follow-up systems) based on specific

indicators developed together with all key stakeholders should be put into place.

TABLE 10: **Monitoring & Evaluation interventions**

Strategic intervention	Responsible institutions	Expected outputs
Improve M&E systems through the use of ICT for data recording and analysis	MoANR, Oromia BoANR	Market information provided in local language through mobile phones (SMS) – up-scaling of ATA's work

#### 4.4.2 Private sector

The capacity of the private sector to mobilize resources and to invest in specific areas should be leveraged by the Government. Numerous actors and institutions have interest in the development of the wheat sub-sector in Central-Eastern Oromia. For example, the private sector could play a key role in ensuring provision of adequate farming inputs and equipment to smallholder wheat producers.

A dynamic **dialogue platform** involving key value chain actors across Central-Eastern Oromia, could be promoted thereby creating opportunities for exposure, exchange, market linkages and overall community development. One example can be found in the approach used by the Scaling-up Pulse

Innovations for Food and Nutrition Security project, which aims at facilitating the adoption and dissemination of innovations and their up scaling in the Southern Nations Nationalities and Peoples region.

#### Producers

In order to reach the production targets set above, rural households should have better access to farming inputs such as certified seeds and agro-chemicals. The overall aim is to transform the rural farming system into an efficient production system, equipped with adequate tools and market-oriented.

TABLE 11: **Investment needed at production node**

Activity	Expected output	Investment required (ETB)	Financing mechanism(s)
Improve availability and utilization of quality farming inputs among wheat producers	Wheat production increased by improving the average productivity of wheat (up to 4.8 t/ha for bread wheat and 4.4 t/ha for <i>durum</i> wheat) through better inputs and farming practices	7 000 ETB/ha*	Wheat producers through financing mechanisms (e.g. vouchers)

\* According to the estimation of the Ministry of Agriculture and Natural Resources.

## Aggregators

Functioning storage facilities located in rural areas of the Agro-Commodities Procurement Zone will offer a steady and reliable access to market through cooperatives for smallholder wheat producers. Additionally, adequate storage facilities will improve the quality of wheat marketed, reduce post-harvest losses and increase the quantity of wheat supplied through the formal channel to processors.

In addition, cooperatives should be encouraged to increase the number of women members and women in management/ leadership positions (ideally 50 percent women and 50 percent men). Women-only groups and cooperatives need special support when established, to avoid failures.

TABLE 12: Investment needed at aggregation node

Activity	Expected output	Investment required (ETB)	Financing mechanism(s)
Improve quality and reduce post-harvest losses at cooperative level	<ul style="list-style-type: none"> <li>Construction/renovation of standard storage facilities (for 361 multi-purpose cooperatives and 45 seed multiplication and storage cooperatives)</li> <li>Purchasing of equipment for post-harvest management and transportation</li> </ul>	1 055 600 000*	Cooperatives through financing mechanisms (e.g. cost-sharing)

\* Based on ATA's Cooperative Storage Project, the average cost of a standard 500 tonnes grain warehouse at primary cooperative level is ETB 2.6 million (approximately USD 96 000), including an office building, a toilet and a guardhouse.

## Input and service providers

Production of certified seeds should be one of the key investment areas for the private sector in order to fill the gap between the current utilization of 7 560 tonnes and the projected requirements of 12 012 tonnes by 2020. In this regard, the private sector can help meeting the needs of wheat producers in terms of quality seed supply<sup>27</sup> (at affordable price) and timely distribution.

Wheat-specific financial services (savings and credit) need to be included in the overall financial system, eventually supported by special credit in-kind schemes. In Central-Eastern Oromia, FAO is piloting a model in the wheat value chain for linking primary cooperatives to Micro-Finance Institutions, in partnership with ICCO-Terrafina Microfinance.

<sup>27</sup> In addition, investment opportunities could be created in the forage seed industry, for example, through the establishment of seed companies that distribute and sell forage seed.





## 4.5 CONCLUSIONS

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The Government of Ethiopia shows great commitment to transforming the agricultural sector during the Second Growth and Transformation Plan and, as a result, to increase production and productivity and strengthen commercialization of wheat and wheat products. However, a lot needs to be done in order to close the gap between demand and available supply of wheat in the domestic market, as well as to advance towards export markets.

This Strategic Analysis and Intervention Plan complements the Feasibility Report for the Agro-Commodities Procurement Zone and the Integrated Agro-Industrial Park with the aim of providing the Government of Ethiopia with a competitiveness

strategy and an intervention plan that should guide interventions and investments in support of the development of the wheat value chain in Central-Eastern Oromia. Despite its potential, the performance of the wheat sub-sector needs to be enhanced and specific challenges need to be addressed.

Quality agricultural inputs such as improved seeds and agro-chemicals are a key area of intervention for increased production and productivity. In this regard, fostering private investments, especially in the seed sub-sector, should be given high priority. Strengthening of input supply at adequate price should be developed through better performances by public and private actors.

The aggregation node is of key importance in the supply chain, especially for rural producers that have limited connectivity with markets. In Central-Eastern Oromia, the chain from producers to processors is usually very long and includes many intermediaries. The current system results in high transaction costs, leading to a lack of price competitiveness of the sub-sector. The development of marketing infrastructure, transportation and marketing centres should lead to increase competition and efficiency - while mitigating costs - in the wheat value chain.

Improving the information flow and communication between producers and other value chain actors will result in a more equal distribution of gains along the value chain, benefiting smallholder producers in particular. Since price is determined by supply and demand, it is important to promote a reliable, up-to-date and consistent market information system, to support investments on marketing and market infrastructure.

Processors face a shortage of quality wheat supply and are often forced to work under capacity. Poor value chain governance and the absence of strong linkages between producers and buyers results in limited access to formal markets and the predominance of the informal market, in which quality of wheat is highly compromised. The formalization of wheat marketing along with the establishment of quality standards will contribute to satisfy local demand and meet processors' requirements.

Market linkages should be strengthened to increase the volume of quality wheat grain available to the industry. In this regard, the establishment of the pilot Integrated Agro-Industrial Park in Central-Eastern Oromia offers opportunities for both rural and commercial producers to create formal business linkages and expand investments and agro-infrastructure in the Agro-Commodity Procurement zone.

Conducive policies and regulations should recognize and reward good achievements and take corrective actions on poor performance and ensure accountability, ultimately enhancing employment creation and improving access to resources and services. Finally, availability of data and information on prices, market trends, on the demand for such products should be increased and facilitated.





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# ANNEX 1

## LIST OF KEY INSTITUTIONS AND INITIATIVES

- Agricultural Growth Program (AGP) - *a multifaceted investment program of MoANR supporting agricultural productivity and commercialization focusing on high agricultural potential areas;*
- Agricultural Offices at city and *woreda* levels;
- Central Statistical Agency (CSA) - *responsible for the statistical data generation related to the socio-economic conditions (including agricultural production) of Ethiopia;*
- Cooperatives Promotion Agency and Cooperative Promotion Offices at *woreda* level;
- Ethiopian Agricultural Professionals Association (EAPA);
- Ethiopian Agricultural Transformation Agency (ATA) - *a government agency created to help accelerating the growth and transformation of Ethiopia's agriculture sector;*
- Ethiopian Chamber and Sectoral Association - *an institutional platform for private sector actors on advocacy, trade, investment promotion and capacity building;*
- Ethiopian Grain Trade Enterprise (EGTE) - *a state-owned enterprise engaged in stabilizing the grain market while earning export revenues;*
- Ethiopian Institute of Agricultural Research (EIAR) - *responsible for research on increased agricultural productivity and nutrition quality, sustainable food security, economic development, and conservation of the integrity of natural resources and the environment;*
- Ethiopian Investment Commission (EIC) - *government institution accountable to Ethiopia's Investment Board, which is chaired by the Prime Minister;*
- Ethiopian Seed Enterprise (ESE) - *a state-owned enterprise engaged in seed production and supply in Ethiopia;*
- Federal Office of Urban Agriculture;
- Food, Medicine and Health Care Administration and Control Authority (FMHACA);
- Micro and Small Enterprise Development Agency;
- Oromia Agricultural Research Institute (OARI) and regional research institutions;
- Oromia regional Bureau of Agriculture and Natural Resources;
- Regional level administrations; zonal level administrations; *woreda* and *kebele* administrations; city administrations and municipalities;
- Standards organizations (Ethiopian Standards Agency, Ethiopian Conformity Assessment Enterprise, National Metrology Institute, National Accreditation Office).

TABLE 13: Activity schedule of the field mission in Central-Eastern Oromia

Date	Activity
16 Oct	Meeting with Mr Gashaw Teye of Prima Macaroni in Dukem (East Shewa)
	Visit to the Kulumsa Research Centre with Mr Abebe Delesa
	Meetings with Mr Adem Bushe of the Arsi zone Agricultural & Cooperative Promotion Office in Asella (Arsi)
17 Oct	Meeting with Mr Adduraman from Galama Union in Bekoji (Arsi) and visit to primary cooperatives members of Galama Union
18 Oct	Visit to the Sinana Agricultural Research Centre (SARC) with Mr Tamena and Mr Amare Biftu (Bale)
	Visit to the Seko Jafera primary cooperative with Mr Yebo Mohammed (Bale)
	Visit to the Dureti Tulu primary cooperative (Bale)
	Meeting with Mr Alemu Lema from the Bale zone Agricultural & Cooperative Promotion Office in Robe (Bale)
	Meeting with Mr Usman from the Agarfa Union in Ali (Bale)
	Visit to the Ali primary cooperative with Mr Tahiro Sano (Bale)
19 Oct	Meeting with Mr Gemeda Hule and Mr Tesfaye of the West Arsi zone Agricultural Office in Shashemane (West Arsi)
	Visit to the Uta Wayyu Union in Shashemane with Mr Muktar Adem (West Arsi)
20 Oct	Visit to the Adami Tulu Agricultural Research Centre (ATARC)

TABLE 14: List of participants to the first technical workshop at Oromia BoANR

	Name	Institution	Title
1	Aliye Hussen	Oromia BoANR	Deputy Head
2	Dejene Hirpa	Oromia BoANR	Director, Crop Directorate
3	Aberra Beyene	Oromia BoANR	Agricultural inputs expert
4	Desta Asgedom	FAO	Senior value chain expert

TABLE 15: List of participants to the second technical workshop at MoANR

	Name	Institution	Title
1	Abdulsemed Abdo	MoANR	Special Advisor
2	Esayas Lemma	MoANR	Senior expert
3	Bezu Yecheneku	MoANR	Senior pulse crops agronomist
4	Desta Asgedom	FAO	Senior value chain expert

# ANNEX 2

## KEY GENDER-BASED CONSTRAINTS IDENTIFIED IN ARSI, BALE, EAST SHEWA AND WEST ARSI ZONES

The matrix below provides a set of actions designed to address the gender based constraints identified at the different nodes of the wheat value chain. It is important to recall that gender-based constraints and relevant causes are often interconnected.

As such, actions designed to address one type of gender-based constraints may eventually affect other situations according to dynamics which may be intended or unintended.

TABLE 16: Key gender-based constraints identified in Central-Eastern Oromia

Node	Activities	Gender-based constraints (GBCs)	Causes	Consequences on value chain	Actions to address GBCs
Production	<b>Land preparation &amp; ploughing</b> (traditionally men dominate but women are increasingly involved)	Limited/ empirical/ indirect information on agricultural practices, technology, inputs, mechanization, markets and prices of inputs;	Social norms impose that membership be reserved to men and women heads of HH and land owners;  Social norms prevent women from owning oxen and operating the oxen plough and mechanised equivalents;	Lower levels of productivity due to low quality/variety of seeds, ineffective fertilizers/pesticides or inappropriate use of same, and scarce knowledge on crops and pest management;	Link private mechanization suppliers to multipurpose cooperatives;  Support multipurpose cooperatives in reaching out to women in both female and male -led HHs, run demonstrations and favour access also through leasing;
	<b>Seeding</b> (decision over variety of seeds to plant is taken by men based on the information men have access to and their access to improved seeds)	Lack of access to technology/ mechanization, deriving workload and mobility limitations;	Women can hardly identify themselves as farmers due to socio-cultural norms and are not inclined to approach agricultural institutions;	Lower levels of profitability due to women's need to outsource labour or rent out land, poor negotiation skills with buyers, poor knowledge about the market and opportunities for diversification and value addition;	Raise community awareness on the economic benefits deriving from more efficient participation of women in crops and strategies towards this end. Reinforce awareness about cooperatives values and empower farmers as proactive members;
	<b>Weeding</b> (traditionally women dominate)	Lack of access to finance for mechanization, technology/inputs;	Women possess through inheritance and manage smaller sizes of land than men; they lack collaterals needed for agricultural loans.	Transaction and production prevailing occurring in the domain of informality;	Review policies in a way to increase women's effective participation and voice in cooperatives and in wheat value chain governance structures;
	<b>Threshing</b> (traditionally women dominate)	Limited decision-making on production processes and choice of seeds variety (women choice connected to nutrition factors and home consumption). Limited access to and participation in cooperatives and other value chain governance structures and limited participation in leadership or management positions of same;	Socio-cultural norms expect women to tend to livestock, homestead farming (including fetching water and firewood) and family chores, preventing engagement in training and other activities. This entails a disproportionate workload between women and men. Women's work burden is also caused by male out migration (e.g. casual labour)	High level of deterioration and waste due to lack of knowledge of and access to appropriate storage facilities and post-harvest management;	Establish a policy stakeholders' platform to review existing strategies and measures addressing specific gender-based constraints, ensure their effective and integrated implementation at the grassroots and monitor the impact;
	<b>Transportation</b> (when horse-drawn or motorized transportation is not available, women perform this task using donkeys if available)	Limited access to and participation in cooperatives and other value chain governance structures and limited participation in leadership or management positions of same;	Women in general possess a lower level of education than men and have limited numeracy and literacy skills;	Inadequate quantity and quality of wheat supplies;	Ensure that gender sensitization programmes at the grassroots be systematized as part of a coordinated effort by involved stakeholders;
	<b>Sieving and crushing</b> (women dominate at micro-small-scale level using basic machinery available at cooperatives)	Access to and control over profits from wheat crops is limited to the head of HH, despite the load of work performed by women.	Socio-cultural norms prevent women's access to and control over profits from wheat; differently they often control those deriving from dairy and animal husbandry	Processors working below capacity in the face of increasing demand;	Upgrade one selected highly potential facility identified at each RTC to operate as a hub promoting business-oriented farming with a gender-sensitive and household focused approach. These hubs should address the literacy and numeracy gap of women, should enable equal access to information on the market demand, prices, location of buyers, availability and prices of inputs and link women and men to technology and knowledge providers. These centres should work in synergy with knowledge resource institutions, such as research centres, extensions, development agents and to the famers' schools. Also, they shall favour/promote/ divulge the work conducted at the grassroots by the health army, the women's groups and other organizations engaged in empowering communities at the grassroots.
	<b>Storage</b> (women dominate)			Wheat heavily subsidized, but subsidies have a negative effect on farmers as it lowers the price of wheat. Profitability is also affected by many transaction costs along the chain.	

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**ANNEX 2**

Key gender-based constraints identified in Arsi, Bale, East Shewa and West Arsi zones

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Node	Activities	Gender-based constraints (GBCs)	Causes	Consequences on value chain	Actions to address GBCs
Collection	Men dominate collection from formal and informal suppliers	Lack of motorized transportation means; Limited of access to finance; Lack of mobility; Lack of enterprising attitude in a domain highly gendered	Lack of collaterals; Social norms discourage women to engage in activities entailing mobility and interaction with the public	Waste, deterioration and lack of timeliness may happen in the absence of appropriate transportation systems; Small scale producer may rely on informal collectors thereby missing opportunities to be part of a formalized and more secured marketing system;	The above business promotion hubs could facilitate the creation of transportation facilities serving specifically women small scale producers and could facilitate their link to formal value chain structures
Milling and processing (medium and large scale)	Women and men participate in medium and large-scale milling facilities although with different functions and responsibilities	Lack of women participation in leadership and decision- making positions Gendered division of tasks at processing based on physical workload and responsibility involved Women's limited access to finance and incentives for small scale investments in processing	Traditional norms see women more involved in relatively light activities with low responsibility levels, such as cleaning, sorting, light packaging and therefore lower paid than quality control or other operational tasks generally reserved to male workers	At village level the establishment of micro/ small scale processing businesses would help securing a local market locally to women producers	Promoting product diversification and innovation to carve out market niches for higher added value Promote women-to-women business linkages for contract farming which is more responsive to women's challenges and needs
Marketing and Distribution	Women are involved in retailing mainly at urban level as much as men either as owner of small supermarket and as salespersons	Limited access to finance to open retail stores Limited access to business management training to better run their businesses	Limited entrepreneurial attitude of women in rural areas Business development facilities for women not widely present; Lack of collaterals; Socio-cultural norms prevent women from interacting with male clients and suppliers Lack of incentives for women to start up new businesses	The presence of formal retail businesses at village level would secure a local market for women processors and producers who don't sell through cooperatives	Promote at rural level a culture of entrepreneurship to favour commercialization of wheat products and formalization of relevant transactions

TABLE 17: Policy documents (with relevant commitments/actions) addressing identified gender-based constraints

Policies, strategies, plans	Gender-based constraints addressed
<b>Overarching documents</b>	
<ul style="list-style-type: none"> <li>Constitution of the Federal Democratic Republic of Ethiopia, 1995</li> </ul>	Women's decision making, voice and participation
<b>Economic Development</b>	
<ul style="list-style-type: none"> <li>Growth and Transformation Plan (GTPII) (2016-2020)</li> </ul>	Inequalities in participation and access to resources
<b>Gender</b>	
<ul style="list-style-type: none"> <li>National Policy on Ethiopian Women, 1993</li> <li>National Action Plan for Gender Equality (Nap-Ge) 2006-2010</li> </ul>	Access and control over to productive resources and inputs, power and agency
<b>Agriculture, Rural Development and Natural Resource Management</b>	
<ul style="list-style-type: none"> <li>Rural Development Policy and Strategies (RDPS) (2003)</li> <li>Agricultural Policy Investment Framework (PIF) (2011-2020)</li> <li>Environmental Policy of Ethiopia (1997)</li> <li>Water sector Policy (2001) and Water Sector Development Programme (2002-2016)</li> <li>National Policy and Strategy on Disaster Risk Management (2013)</li> <li>The Agriculture Growth Program (AGP) 2010-2015</li> </ul>	Lack of access to productive inputs and resources (water, land, technology); Lack of mobility; Lack of women's participation
<b>Social Protection</b>	
<ul style="list-style-type: none"> <li>National Social Protection Policy of Ethiopia (2012)</li> </ul>	Inequalities in benefiting from social protection programs, paying attention to social norms, health, education
<b>Climate Change</b>	
<ul style="list-style-type: none"> <li>National Strategy and Action Plan for the Implementation of the Great Green Wall Initiative in Ethiopia, 2012</li> <li>Ethiopia's Climate-Resilient Green Economy, Green economy strategy</li> </ul>	Access to productive inputs and resources with a focus to technologies and rural energy
<b>Food security and nutrition</b>	
<ul style="list-style-type: none"> <li>Food Security Strategy (1996)</li> <li>Food Security Programme (2010-2014)</li> <li>National Nutrition Program (2013-2015)</li> <li>National Nutrition Programme (2016-2020)</li> </ul>	Unequal access to and control over resources, unequal decision making. Unequal access to information and education on nutrition; social norms discriminating on women and girls; unequal nutritional status of women and men
<b>Education and Vocational Training</b>	
<ul style="list-style-type: none"> <li>Education and Training Policy, 1994</li> <li>Technical and Vocational Education and Training (TVET) Proclamation No. 391/2004</li> <li>Girls' Education and Gender Equality Strategy for the Education and Training Sector, Ministry of Education, 2014</li> </ul>	Women's limited participation in productive activities requiring technical competences; Limited provision of inclusive advisory services by female technicians /extensionists
<b>Cooperatives and governance structures</b>	
<ul style="list-style-type: none"> <li>Agricultural Cooperatives Sector Development Strategy 2012-2016</li> <li>Cooperatives, societies proclamation N. 895/2016</li> </ul>	Limited participation of women in cooperatives, as members, in management and decision-making positions; Limited access to productive inputs.

# ANNEX 3

## RAW DATA COLLECTED FROM GOVERNMENT OFFICES

TABLE 18: Number of woredas and kebeles in Central-Eastern Oromia (CSA, 2016)

Zone	No. of woredas	No. of kebeles
Arsi	25	498
Bale	20	349
East Shewa	12	298
West Arsi	12	324

TABLE 19: MoANR's targets (gender disaggregated) for the GTP-2 period

Input Utilization (seed and fertilizer)	
1	Increase total improved seed utilized from 1 874 000 qt to 3 560 000 qt
2	Increase male-headed household beneficiaries of improved seeds from 2 015 000 to 2 741 000
3	Increase female-headed household beneficiaries of improved seeds from 602 000 to 819 000
4	Increase total amount of fertilizer utilized from 1 025 231 tonnes to 2 062 106 tonnes
5	Increase male-headed household beneficiaries of fertilizer from 789 428 tonnes to 1 587 821 tonnes
6	Increase female-headed household beneficiaries of fertilizer from 235 803 tonnes to 474 284 tonnes
Agricultural Mechanization	
1	Increase land preparation tools from 77 000 to 708 960
2	Increase seed planters from 2 000 to 42 560
3	Increase plant protection tools from 600 to 32 710
4	Increase mowing and threshing machineries from 1 800 to 57 516
5	Increase grain warehouse technologies from 30 310 to 14 250
6	Increase value adding tools from 100 to 111 100
Extension Services Coverage	
1	Increase extension services coverage from 15 200 000 to 18 237 000
2	Increase total extension services beneficiaries from 14 014 000 to 16 776 000
3	Increase extension services for male-headed household beneficiaries from 8 343 000 to 9 674 000
4	Increase extension services for female-headed household beneficiaries from 4 253 000 to 5 325 000
5	Increase extension services for youth beneficiaries from 1 418 000 to 1 777 000
6	Increase extension services for women (non-head of household) beneficiaries from 4 171 000 to 4 837 000
Cooperatives Development	
1	Increase primary cooperatives from 65 341 to 70 341
2	Increase unions from 330 to 340
3	Increase cooperative members from 10 225 423 to 10 454 637

TABLE 20: Cooperatives type and number in Central-Eastern Oromia (with gender-disaggregated membership data)

Type of cooperatives	Number of Cooperatives	Members		
		Male	Female	Total
Agricultural Multi-purpose cooperatives	361	71 441	11 277	82 718
Seed Multiplication and Storage cooperatives	45	4 607	1 332	5 939
Irrigation cooperatives	32	5 903	1 254	7 157
Rangeland Management cooperatives	4	1 221	129	1 350
Coffee cooperatives	14	637	38	675
Forestry cooperatives	66	22 735	3 370	26 105
Honey cooperatives	3	71	48	119
Dairy cooperatives	31	2 827	1 409	4 236
<b>Sub-total</b>	<b>556</b>	<b>109 442</b>	<b>18 857</b>	<b>128 299</b>
Saving and credit cooperatives	470	10 453	59 235	69 688
<b>TOTAL</b>	<b>1 026</b>	<b>119 895</b>	<b>78 092</b>	<b>197 987</b>
Elected Board Members		3 995	1 599	5 594

TABLE 21: Agricultural cooperatives in East Shewa (Cooperatives Promotion Agency, 2017)

No	Woreda	PA	Name	Type	Year (E.C.)	Total members			Assets (ETB)		
						M	F	Total	Current	Fixed	Total
1	Bora	Eellan	M/Odaa	Irrigation	1998	27	28	55	120 000	17 835	137 835
2	Bora	Eellan	M/Qilxuu	Irrigation	1999	28	0	28	15 300	11 800	27 100
3	Bora	Eellan	Abdii Boruu	Irrigation	1999	22	0	22	15 300	2 400	17 700
4	Bora	Eellan	Burqaa Eelan	Irrigation	1999	36	27	63	94 766	38 226	132 992
5	Bora	Goralaman	Abdii Guddina	Irrigation	1999	15	0	15	16 000	4 500	20 500
6	Bora	Eellan	M/horaa	Irrigation	1999	14	1	15	1 700	15 300	17 000
7	Bora	Eellan	M/waaqayo	Irrigation	1999	20	4	24	25 084	1 400	26 484
8	Bora	Eellan	Malka Hidaa	Irrigation	1999	21	3	24	25 084	1 400	26 484
9	Bora	Eellan	O/Lamaan	Irrigation	1997	15	0	15	15 300	13 250	28 550
10	Bora	Malimabari	Maalimaa Galee	Irrigation	1999	93	35	128	25 084	1 300	26 384
11	Bora	D/Waddeessaa	Abdaarii Golbaa	Irrigation	1999	95	22	117	15 300	1 020	16 320
12	Bora	D/Waddeessaa	Doodo keentarii	Irrigation	2002	93	27	120	12 542	1 100	13 642
13	Bora	D/Waddeessaa	keenteerii mikii	Irrigation	1995	100	31	131	25 084	10 800	35 884
14	Bora	Goralaman	Melka Gili	Irrigation	2001	12	0	12	18 000	12 000	30 000
15	Bora	Goralaman	Malkagali	Irrigation	-	-	-	-	-	-	-
16	Bora	Eellan	Malka Badhadha	Irrigation	1999	8	7	15	1 700	12 542	14 242
17	Bora	Eellan	Hora Huluqaa	Irrigation	2000	190	10	200	30 600	15 500	46 100
18	Dugda	B/Girrisaa	Odaa Gugasaa	Irrigation	2001	41	4	45	23 206	56 000	79 206
19	Dugda	A/Gabrel	Odaa Bilbilaa	Irrigation	1994	11	7	18	2 000	50 000	52 000
20	Dugda	A/Gabrel	M/Araraa	Irrigation	1999	8	5	13	15 000	13 200	28 200
21	Dugda	A/Gabrel	M/Kombolchaa	Irrigation	2002	9	6	15	9 300	52 000	61 300
22	Dugda	B/Girrisaa	M/Danbaloo	Irrigation	2002	13	2	15	3 400	25 090	28 490
23	Dugda	B/Girrisaa	Dambii Irressaa	Irrigation	2003	13	2	15	3 000	31 300	34 300
24	Dugda	B/Girrisaa	Biqiltuu Qoffee	Irrigation	2003	11	3	14	2 500	25 600	28 100
25	Dugda	B/Girrisaa	Qoffee Danbal	Irrigation	2007	67	3	70	15 000	300 000	315 000
26	Dugda	D/Dalacha	W/Dararaa	Irrigation	2000	3	15	18	3 500	50 000	53 500
27	Dugda	D/Dalacha	Abdii Danbal	Irrigation	2007	12	3	15	1 500	68 000	69 500
28	Dugda	D/Dalacha	Malka gootuu	Irrigation	2006	10	4	14	2 100	68 000	70 100

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## ANNEX 3

Raw data collected from Government offices

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No	Woreda	PA	Name	Type	Year (E.C.)	Total members			Assets (ETB)		
						M	F	Total	Current	Fixed	Total
29	Dugda	D/Danbal	D/Danbal	Irrigation	1989	21	0	21	2 600	50 000	52 600
30	Dugda	D/Danbal	Clalaqii Danbal	Irrigation	1990	23	4	27	2 000	50 000	52 000
31	Dugda	D/Danbal	Odaa Cuphaa	Irrigation	1999	28	14	42	10 000	167 000	177 000
32	Dugda	D/Danbal	D/Baatu	Irrigation	1989	7	5	12	5 000	18 000	23 000
33	Dugda	G/Q/Adii	Odaa Qalloo	Irrigation	1999	24	6	30	1 200	68 000	69 200
34	Dugda	G/Q/Adii	A/Qoffee	Irrigation	2003	23	1	24	1 600	103 500	105 100
35	Dugda	G/Q/Adii	M/Qoffee	Irrigation	2003	5	7	12	1 200	1 000	2 200
36	Dugda	G/Q/Adii	Malkaa Re'ee	Irrigation	1999	12	0	12	-	-	-
37	Dugda	H/2	Odaa Ceekaa	Irrigation	2002	21	1	22	2 000	12 000	14 000
38	Dugda	Maqii 01	Jiituu Dandal	Irrigation	2000	9	2	11	1 100	40 000	41 100
39	Dugda	Maqii 02	Somboo Shanaan	Irrigation	2000	8	3	11	1 100	35 600	36 700
40	Dugda	Maqii 02	Danbal Gannat	Irrigation	2000	13	15	28	3 360	62 000	65 360
41	Dugda	Maqii 02	laga maqii	Irrigation	2001	13	0	13	1 300	41 000	42 300
42	Dugda	O/Boqotaa	O/Boqotaa	Irrigation	1999	0	24	24	-	-	-
43	Dugda	Sh/Gamoo	Somboo Alaltuu	Irrigation	1998	11	10	21	4 462	8 500	12 962
44	Dugda	Sh/Gamoo	Somboo Ganat	Irrigation	1999	17	4	21	2 899	8 500	11 399
45	Dugda	Sh/Gamoo	Utuubaa jireenyaa	Irrigation	2006	8	4	12	3 750	8 500	12 250
46	Dugda	Sh/Gamoo	Somboo Dhumuga	Irrigation	2007	9	6	15	1 500	68 500	70 000
47	Dugda	Sh/Gamoo	Akuruu	Irrigation	1999	8	4	12	1 200	8 500	9 700
48	Dugda	T/Danbal	T/Danbal	Irrigation	1991	19	4	23	3 000	67 000	70 000
49	Dugda	T/Danbal	Badagosaa	Irrigation	1997	17	4	21	3 500	143 000	146 500
50	Dugda	T/Danbal	Malkaa guddaa	Irrigation	2002	20	8	28	1 550	18 900	20 450
51	Dugda	T/Danbal	Gobbaa Danbal	Irrigation	2006	8	6	14	2 100	16 200	18 300
52	Dugda	W/Gabrel	Wayyoo Gabre'el	Irrigation	1994	40	7	47	3 700	135 870	139 570
53	Dugda	W/Gabrel	Haroo Jaatoo	Irrigation	1999	31	3	34	3 400	56 000	59 400
54	Dugda	W/Gabrel	Wayyoo Sarritti	Irrigation	1994	41	11	52	65 500	58 554	124 054
55	Dugda	W/Maqdallaa	G/Asheeta	Irrigation	2003	17	3	20	3 050	18 000	21 050
56	Dugda	W/Qallinaa	Malka Kormaa	Irrigation	1994	15	3	18	26 000	80 000	106 000

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No	Woreda	PA	Name	Type	Year (E.C.)	Total members			Assets (ETB)		
						M	F	Total	Current	Fixed	Total
57	Dugda	W/Qallinaa	Mudaa Misooma	Irrigation	2003	8	5	13	1 200	51 975	53 175
58	Dugda	W/Qallinaa	keenyyaa	Irrigation	2000	17	2	19	40 000	60 000	100 000
59	Dugda	W/Qallinaa	Gabbinaa	Irrigation	2003	12	0	12	1 200	51 975	53 175
60	Dugda	X/Coroqe	X/140	Irrigation	1994	27	18	45	5 700	52 000	57 700
61	Dugda	X/Coroqe	Odaa Kichaa	Irrigation	2003	14	0	14	1 400	35 000	36 400
62	Dugda	X/Coroqe	Odaa Jidhaa	Irrigation	2000	6	5	11	5 995	207 500	213 495
63	Baatu Dagaagaa	B/Dag	B/Dag	Irrigation	1992	80	22	102	125 843	419 794	545 637
64	Irechaa	B/Boraa	B/Boraa	Irrigation	1998	46	22	68	46 891	44 000	90 891
65	Bora Gorichaa	B/Garm	B/Garm	Irrigation	2000	59	21	80	111 301	47 461	158 762
66	Iddigat Bahulaachiin	W/Kur	W/Kur	Irrigation	2001	58	30	88	58 379	17 690	76 069
67	Waaqee Mi'aa	W/Miya	W/Miya	Irrigation	1999	88	1	89	47 783	9 982	57 765
68	Ada'a	Dandii Guddinaa	i Guddinaa	Milk	2000	57	57	114	208 202	208 316	416 518
69	Ada'a	Aannan Godino	Godino	Milk	1999	49	48	97	30 200	30 297	60 497
70	Ada'a	Aannan FFE Hiddii	Hidii	Milk	2002		20	20	224 199	224 219	448 419
71	Ada'a	Abdi booru	Adi	Milk	2000	70	70	140	-	50 000	50 000
72	Ada'a	Dhankaakaa	Dhankaka	Milk	1999	37	36	73	204 509	204 582	409 092
73	Ada'a	Qallittii Botaroo	Qaliti	Milk	1999	35	33	68	-	12 900	12 900
74	Lome	Bu'aa Aannan Lume	laga maqii	Milk	1995	84	20	104	204 794	204 898	409 692
75	Lome	Malka Jiituu	Malka	Milk	2001	5	2 006	2 011	17 000	19 011	36 011
76	Lome	Xaddee	Tade	Milk	2001	10	2 011	2 021	-	2 021	2 021
<b>TOTAL</b>						<b>2 217</b>	<b>4 835</b>	<b>7 052</b>	<b>2 030 018</b>	<b>2 037 070</b>	<b>40 670 876</b>

TABLE 22: Summary of the required budget for one Farmers Training Centre (MoANR)

	Description	Cost (ETB)
1	Material purchase and supplies and construction of shed	748 585
2	Training	218 000
3	Seed production & development	66000
<b>TOTAL</b>		<b>1 032 585</b>

TABLE 23: Number of Farmers Training Centres in Central-Eastern Oromia (Oromia MoANR)

	Zone	Farmers Training Centres
1	Arsi	262
2	West Arsi	498
3	East Shewa	287
4	Bale	293
TOTAL		1 340

TABLE 24: Large-scale wheat processors in Central-Eastern Oromia (Oromia BoANR)

	Name	Location	Milling capacity (tons/day)	Supply received by EGTE (tons/month)
1	Meraro Food Complex	Adama	40	189.9
2	Kia milling factory	Adama	124	118.3
3	Hafiza milling factory	Asella	42	73.3
4	Abrar Sabir milling factory	Adaba	72	202.9
5	Langano milling factory	Shashemane	104	168.3
6	TM Food Complex	Adama	42	315.6
7	Awash milling factory	Bishoftu	45	154.2
8	Fana milling factory	Adama	42	236.6
9	Redeit milling factory	Adama	82	90
10	Lume Adama union	Mojo	-	223.2
11	Sophia milling factory	Adama	42	118.3
12	Bollo milling factory	Adama	52	146.5
13	Arsi Katar milling factory	Asella	104	118.3
14	Edighet Industry milling factory	Asella	182	281.8
15	Haji Worku Awel milling factory	Asella	60	169.1
16	Adate Food Complex	Shashemane	82	180
17	Shamil & Family milling factory	Eteya	36	143.5
18	Shey-Si Hu milling factory	Adama	36	101.4
19	Ada'a Food Complex Sh.Co.	Bishoftu	120	252.8
20	Zenebe Berhe milling factory	Asella	42	112.7
21	Chilalo Food Complex	Asella	180	225.4
22	Web milling factory	Adama	120	365.5
23	Jindi Kumo milling factory	Shashemane	82	180
24	Awfat milling factory	Adama	195	298.7
25	Enwahad milling factory	Adama	36	320.6

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	Name	Location	Milling capacity (tons/day)	Supply received by EGTE (tons/month)
26	Gonde Arsi milling factory	Asella	78	143.5
27	Mohammed Abubeker milling factory	Adama	112	320.6
28	Aynaghe milling factory	Adama	72	367.9
29	Nuredin Ahmed Kore milling factory	Adama	42	118.3
30	Meti Teshome milling factory	Shashemane	62	97.7
31	Amift milling factory	Shashemane	36	97.6
32	Muzemil Mussa milling factory	Adama	60	101.4
33	Haj Mustefa & Family milling factory	Shashemane	42	138.8
34	Africa milling factory	Adama	80	320.6
35	Rami milling factory	Asella	42	120
36	Sagure Plc.	Sagure	42	143.5
37	Mati Hanan milling factory	Shashemane	42	180.1
38	Arsi Family milling factory	Bekoji	50	143.5
39	Mesfin Aghizew milling factory	Asella	60	143.5
40	Mule & Rata Trade & Industry Plc.	Tiyo	62	54.8
41	DM Food Complex	Adama	80	109.6
42	Hailu Mekonnen milling factory	Shashemane	42	82.2
43	H. Jee Plc.	Sagure	62	40
44	Senete milling factory	Shashemane	62	44.8
45	Tewekel milling factory	Shashemane	62	44.8
46	Fikir milling factory	Adama	62	54.8
47	Hawi milling factory	Asella	72	38.6
48	D.E.M.A. Food Complex	Adama	52	30
49	Ghemechu Ghuta Food Complex	Adama	52	62.3
50	Yeniye Plc.	Adama	42	30
51	Uta Wayyu union	Shashemane	59	80
52	Rayya Wakena union	Dodola	-	106.9
TOTAL			3 491	8 104.1

TABLE 25: Wheat surplus zones in Ethiopia (CSA, 2014)

	Region	Zone	Population	Production (tonnes)	Consumption (tonnes)	Net surplus (tonnes)
1	Oromia	Bale	1 708 817	439 384	124 267	291 117
2	Oromia	Arsi	3 202 689	582 393	321 694	260 699
3	Oromia	West Arsi	2 394 210	380 523	212 773	167 750
4	Amhara	East Gojjam	2 485 673	252 799	100 084	152 715
5	Amhara	North Gondar	3 441 885	167 931	102 902	65 028
6	SNNPR	Silt'e	877 251	65 880	4 755	61 125
7	Amhara	North Shewa	2 131 857	184 195	128 997	55 198
8	Oromia	South West Shewa	1 341 702	181 624	142 015	39 609
9	Tigray	Eastern	867 193	47 375	9 242	38 134
10	SNNPR	Hadiya	1 478 305	79 286	41 982	37 304
11	Oromia	Horo Guduru Welega	691 871	52 765	25 736	27 029
12	Amhara	Agew Awi	1 143 639	34 556	14 625	19 932
13	Oromia	East Shewa	1 993 991	198 400	185 085	13 315
14	Amhara	West Gojjam	2 735 711	75 015	62 191	12 824
15	SNNPR	Yem (special <i>woreda</i> )	96 356	9 660	1 576	8 083
16	Amhara	South Wollo	2 925 559	190 590	185 115	5 475
17	SNNPR	Alaba (special <i>woreda</i> )	280 018	10 284	8 556	1 728
18	Oromia	East Welega	1 477 953	17 932	16 532	1 400
19	SNNPR	Konta (special <i>woreda</i> )	107 993	1 244	479	765
TOTAL			31 382 673	2 971 836	1 712 609	1 259 227



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Strategic analysis and intervention plan  
for **wheat and wheat products**  
in the Agro-Commodities  
Procurement Zone of the pilot  
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This study is part of a series of publications prepared through project UNJP/ETH/092/UID "Technical Support for the Implementation of an Integrated Agro-Industrial Park in Ethiopia". It provides a detailed analysis of the prioritized value chains in the Agro-Commodities Procurement Zone (ACPZ) of the pilot Integrated Agro-Industrial Park (IAIP) in Central-Eastern Oromia, Ethiopia. It relies on a review of specialized background documentation, complemented by evidence gathered through key informants and fieldwork. With a detailed development strategy and intervention plan, the study provides commodity-specific recommendations that will lead to the inclusive and sustainable development of the wheat value chain.

**FAO Representation in Ethiopia**  
CMC Road, Bole sub-city, Kebele 12/13  
P.O. Box 5536, Addis Ababa, Ethiopia  
FAO-ET@fao.org

**Food and Agriculture Organization of the United Nations**  
Viale delle Terme di Caracalla  
00153 Rome, Italy



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