

# SELECT ETHIOPIA VALUE CHAINS SUMMARY

## Mercy Corps AgriFin

### AgriFin Digital Farmer (ADF) Program

*This presentation is based on research funded by the **Bill & Melinda Gates Foundation**. The findings and conclusions contained within are those of the authors and do not necessarily reflect positions or policies of the Foundation*

# EXECUTIVE SUMMARY

## BACKGROUND

- Globally, **more than 1 billion people are employed in agriculture**. Most are small-scale farmers in developing countries.
- Smallholders face complex that include **lack of access to markets and quality services**, competition over land, over-reliance on rain-fed agriculture, lack of water for irrigation, massive urban migration, and shocks caused by climate change, including floods and drought.

## AGRIFIN PROGRAM APPROACH

- AgriFin is **leveraging the power, convenience, and prevalence of mobile phones** to help smallholder farmers boost their harvests and incomes
- AgriFin employs a **market facilitation model** to drive scalable, commercial innovations for smallholders with **agricultural ecosystem** partners who include mobile network operators, financial institutions, service providers, farmer networks, technology innovators, agriculture value chain players, policy makers and other stakeholders.
- The core problem we seek to address is the **inclusion gap for smallholder farmers (SHF)** who lack access to affordable, accessible, demand-driven financial products and services that drive higher productivity and income for their households.

# EXECUTIVE SUMMARY

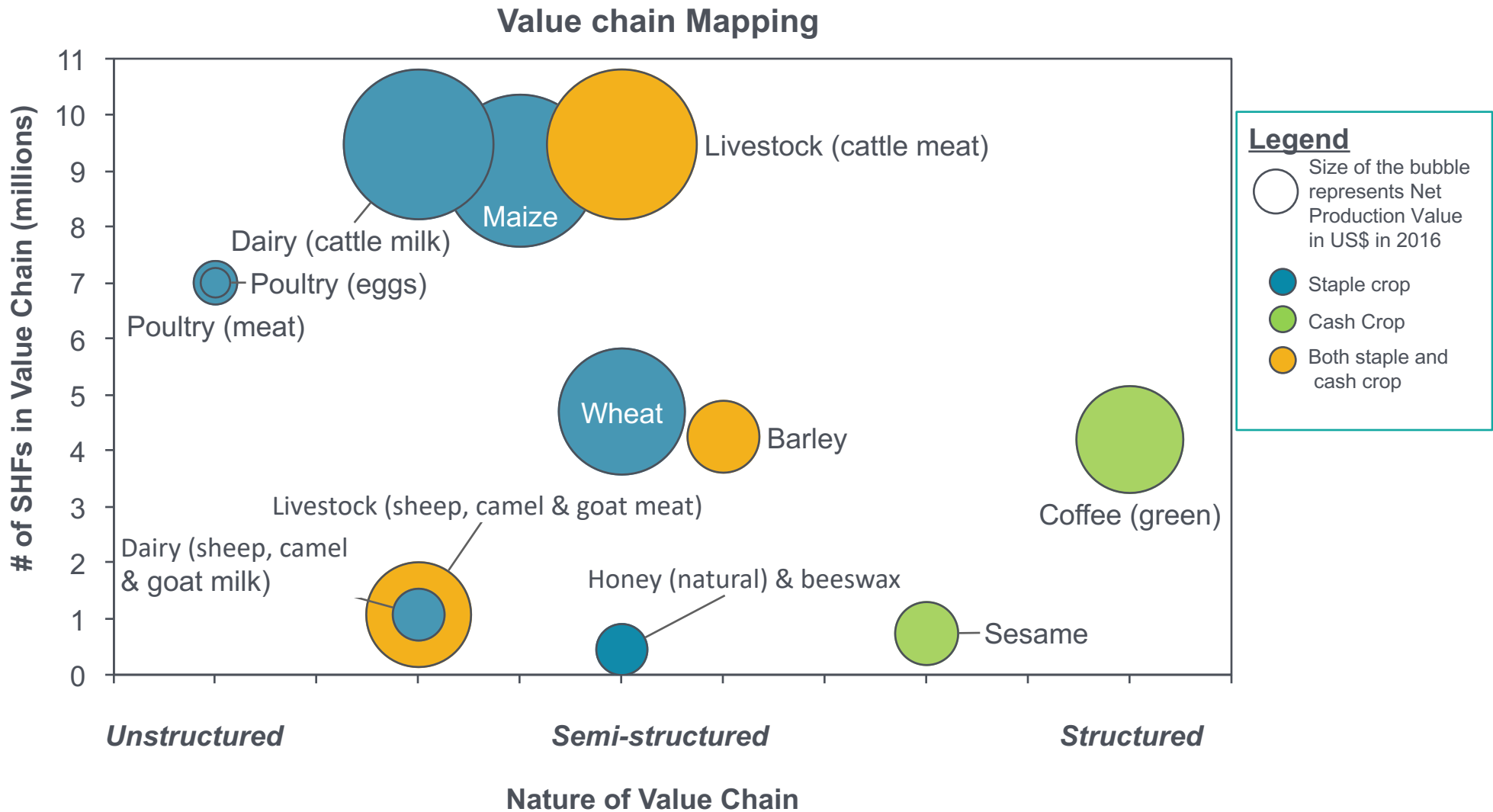
## RESEARCH APPROACH

- The research is based on desk review (90%) and interviews (10%) from experts at Ethiopia Agricultural Transformation Agency (ATA), Mercy Corps Ethiopia, Fair & Sustainable Ethiopia, and local agricultural consultants.
- Figures on **production volumes and production values are all based on (FAOSTAT 2016).**
- The research focuses on **a few pre-selected select value chains**, that Mercy Corps AgriFin may focus on with future engagements. This analysis does not cover all value chains in Ethiopia.
- Pre-selection of VC's for analysis was driven by the **potential for digital financial and digital information interventions.**
- All production values are **net** (national production gross value minus seed/fertilizer).

## KEY FINDINGS

- Deficits between domestic demand and production in multiple value chains (i.e wheat, barley, etc.) **indicate good investment potential driven by domestic demand.**
- Cattle beef and dairy, poultry, maize and wheat are large value chains, representing large production volumes and values (indicating strong finance potential), however termed as unstructured - semi-structured, due to weak market linkages, weak to non-functional farmer unions among others.
- Cash crops such as sesame and coffee are more structured, whereas staple crops are less structured (in line with other country ecosystem studies).
- **Good digitization/finance potential to address pain points in** semi-structured value chains, complimenting ongoing voucher, e-extension and information services.

# Agriculture value chains are influenced by different characteristics, such as size and level of structure



**Note:** The goat, sheep, and camel value chains have 322,468, 355,861 and 395,000 SHF respectively.

**Source:** FAOSTAT 2016 <http://www.fao.org/faostat/en/#data/QV>

# Maize: A staple crop grown by around 8.7M SHF's and a source of food security.

8.7 M

*Smallholder Farmers*

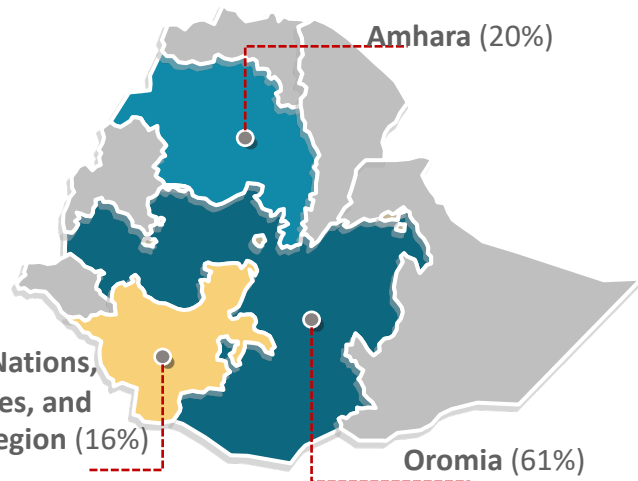
7.85M

*Annual production (MT)*

\$1B

*Production value (USD)*

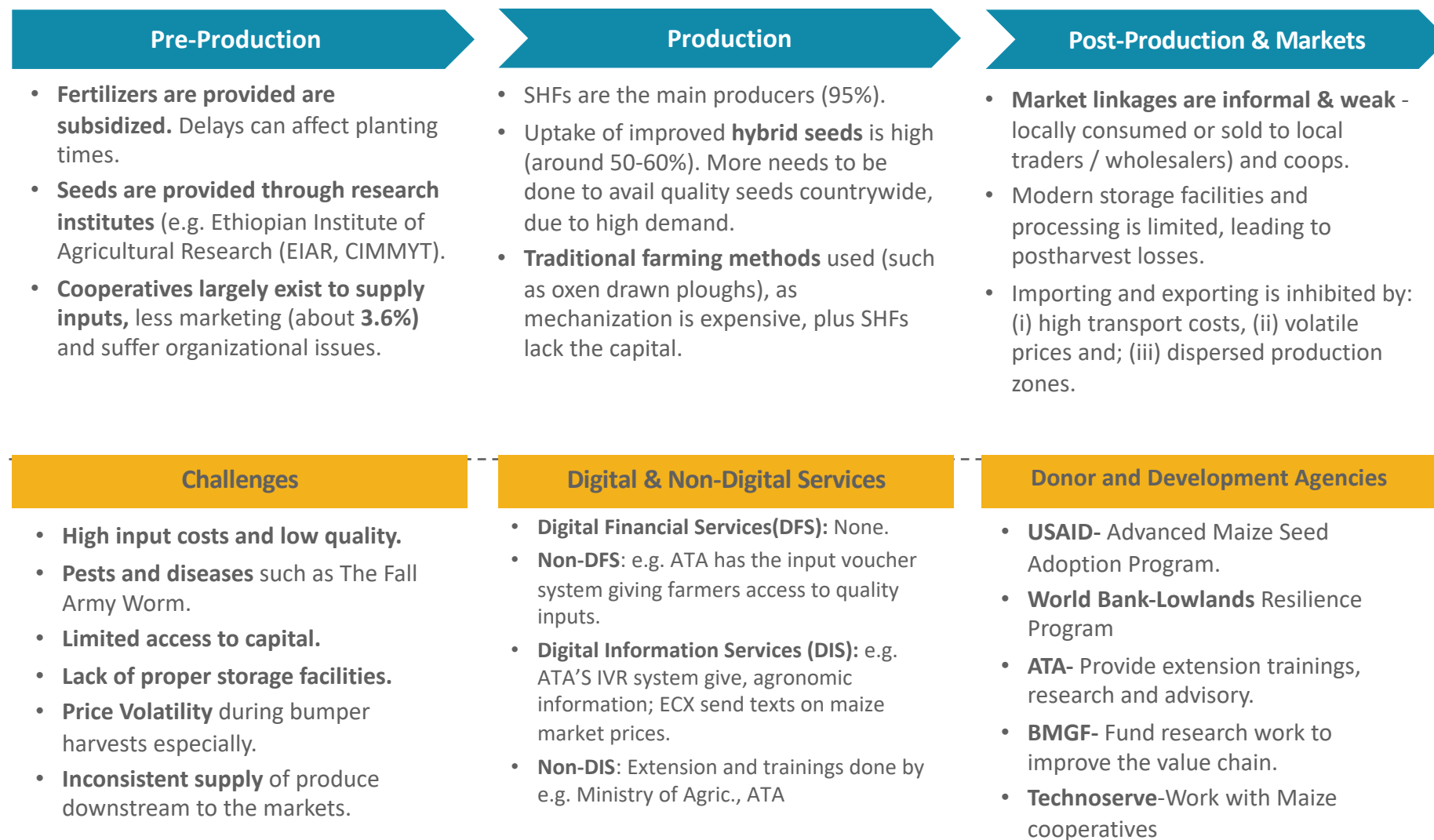
## Main Production Zones



## Why look at the maize sector?

- **Maize is one of Ethiopia's staple crops** - of the 16M hectares(ha) under farming, 2.2M ha is Maize. FAO (2018) states approximately 80% is consumed on farm, with the balance sold, used as feed or seed.
- Approximately **95%** of the marketed quantity comes from smallholders, and the rest from state/ commercial farms.
- Maize features in Ethiopia's **Growth Transformation Plan GTP I (2010-2015) & GTP II (2014-2020) and considered as food security**. The plan projects an average productivity increase on stalk cereals to 42.64 quintals/ha (4.3 tons/ha) by end 2020 from 29 quintals/ha (2.9tons/ha) in 2014.
- Maize is also traded on the Ethiopian Commodity Exchange (ECX) platform.
- Maize value chain has a **high** involvement of women and youth, in the production, harvesting and storage stages.

# The Maize value chain is semi-structured with informal market linkages, but has high women & youth participation



# Wheat: A staple crop, grown by about 4.7M SHFs, with domestic demand higher than supply

4.7 M

*Smallholder Farmers*

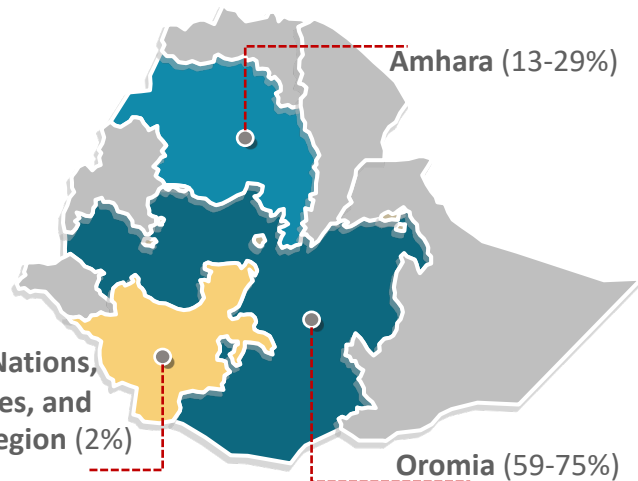
4.5M

*Annual production (MT )*

\$700M

*Production value (USD)*

## Main Production Zones

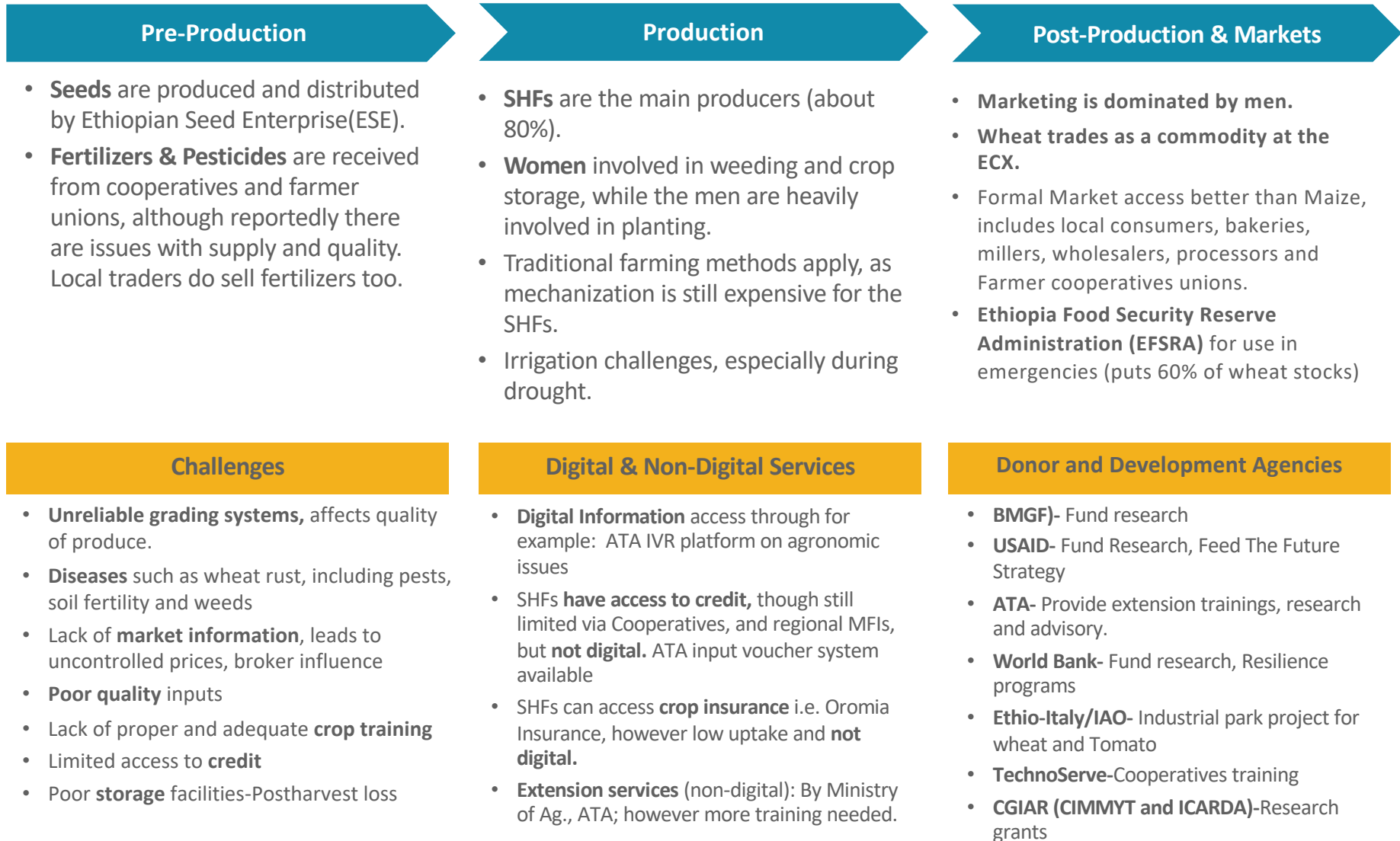


## Why look at the Wheat Sector?

- Wheat is a **staple crop**; Ethiopia is the **largest wheat producer in the Sub-Saharan Africa**, after South Africa. Most humanitarian food aid takes the form of wheat.
- The major types of wheat grown in Ethiopia consist of: Bread wheat, Durum wheat and Emmer wheat.
- Despite the national yield having doubled in two decades, there is still a **deficit of ~20%** which is met through imports. Ethiopia imports most of its wheat from **Russia (42%), USA (26%), and Italy (11%)**.
- Subsidized imported wheat affects local market prices.
- Wheat features in Ethiopia's **Growth Transformation Plan GTP I (2010-2015) & GTP II (2014-2020)** and considered as **food security**. Average productivity for non-stalk cereals projected from 21.1 quintals/ha (2.1 tonne/ha) in 2014/15 to 31 quintals/ha (3.1 tonne/ha) in 2019/20.



# The Wheat value chain is semi-structured, involves approximately 4.7 M SHFs with better access to formal markets





# Barley: A dual purpose crop, both staple and cash, a growing value chain with approximately 4.5M SHFs.

4.5 M

Smallholder Farmers

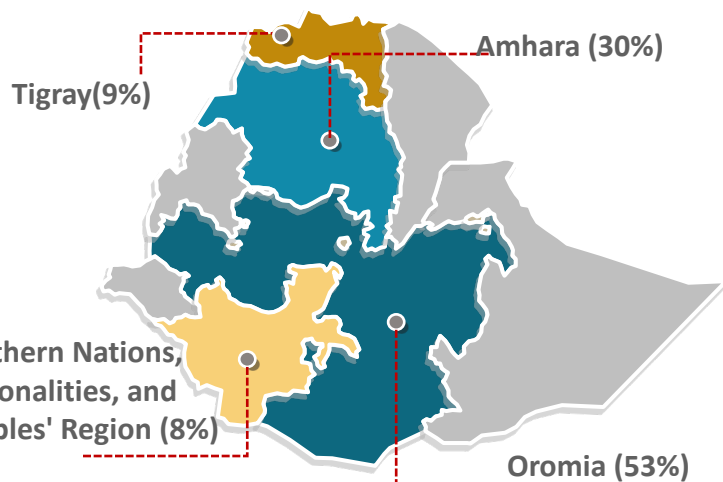
2.02M

Annual production (MT)

\$250M

Production value (USD)

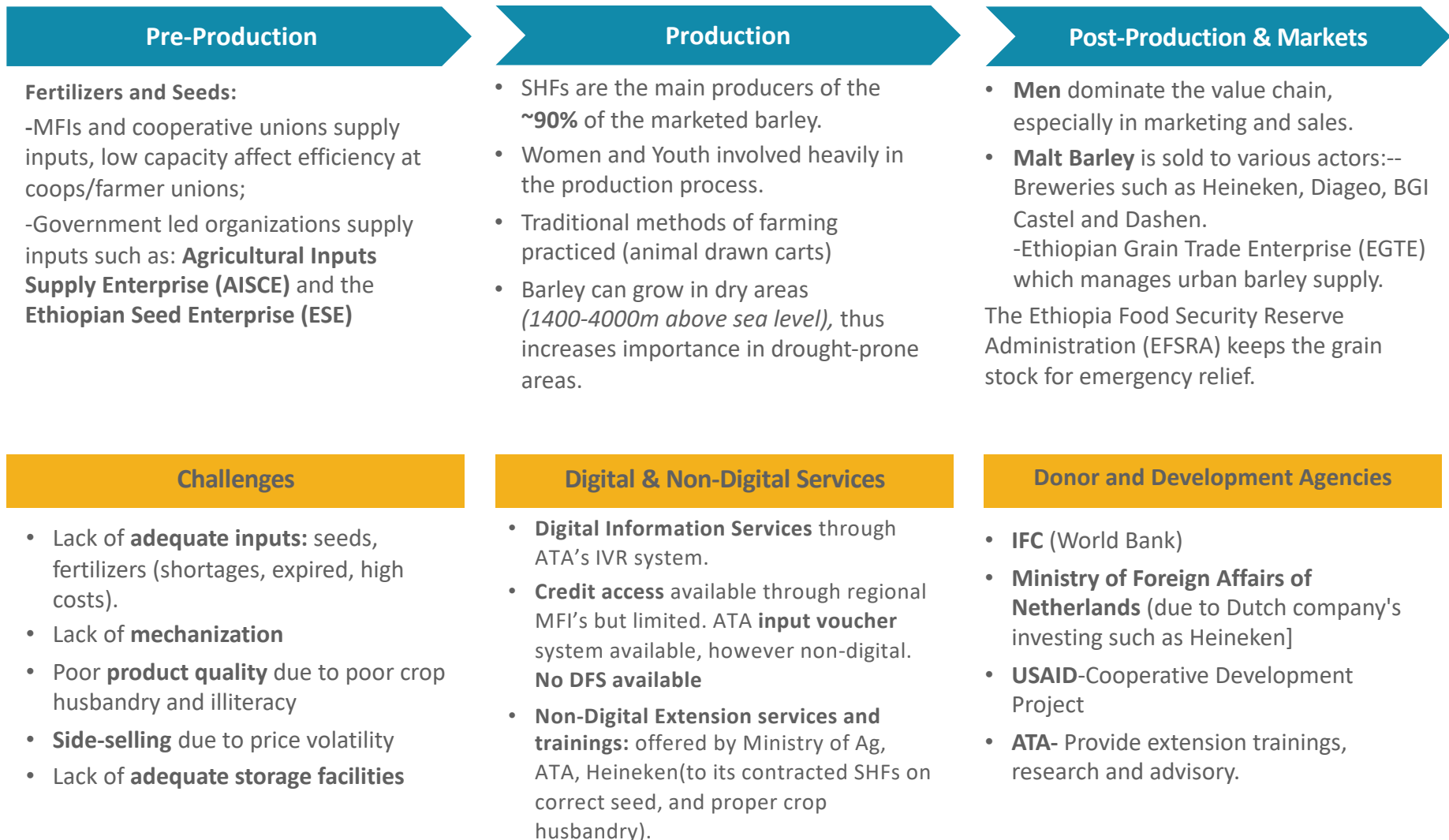
## Main Production Zones



## Why look at the Barley Sector?

- Ethiopia produces two varieties: **Food Barley (Staple Crop)** and **Malt Barley (Cash Crop)**
- Ethiopia is the 2nd largest Barley producer in Africa, after Morocco, contributing about 25% of the continent's barley production.
- Food Barley is consumed locally by SHFs (above 60%) while Malt Barley is fully dependent on the evolving growing brewery sector and demand for beer.
- Barley deficits fulfilled with imports
- It is reportedly a male dominated value chain, however women and youth heavily involved in production.
- Barley features in Ethiopia's **Growth Transformation Plan GTP I (2010-2015) & GTP II (2014-2020)**, that will contribute to an average productivity for non-stalk cereals projected increment from **21.1 quintals/ha (2.1 tonne/ha) in 2014/15 to 31 quintals/ha (3.1 tonne/ha) in 2019/20**

# The Barley value chain is semi-structured, with most marketing reportedly dominated by men.



# Sesame: Major cash crop, which is mainly produced as an export crop, and a growing value chain.

1M

Smallholder Farmers

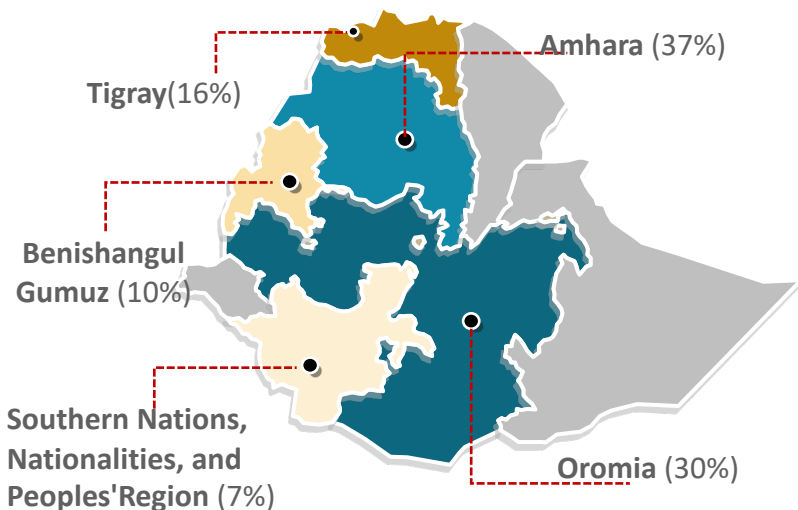
0.3M

Annual production (MT)

\$250M

Production value (USD)

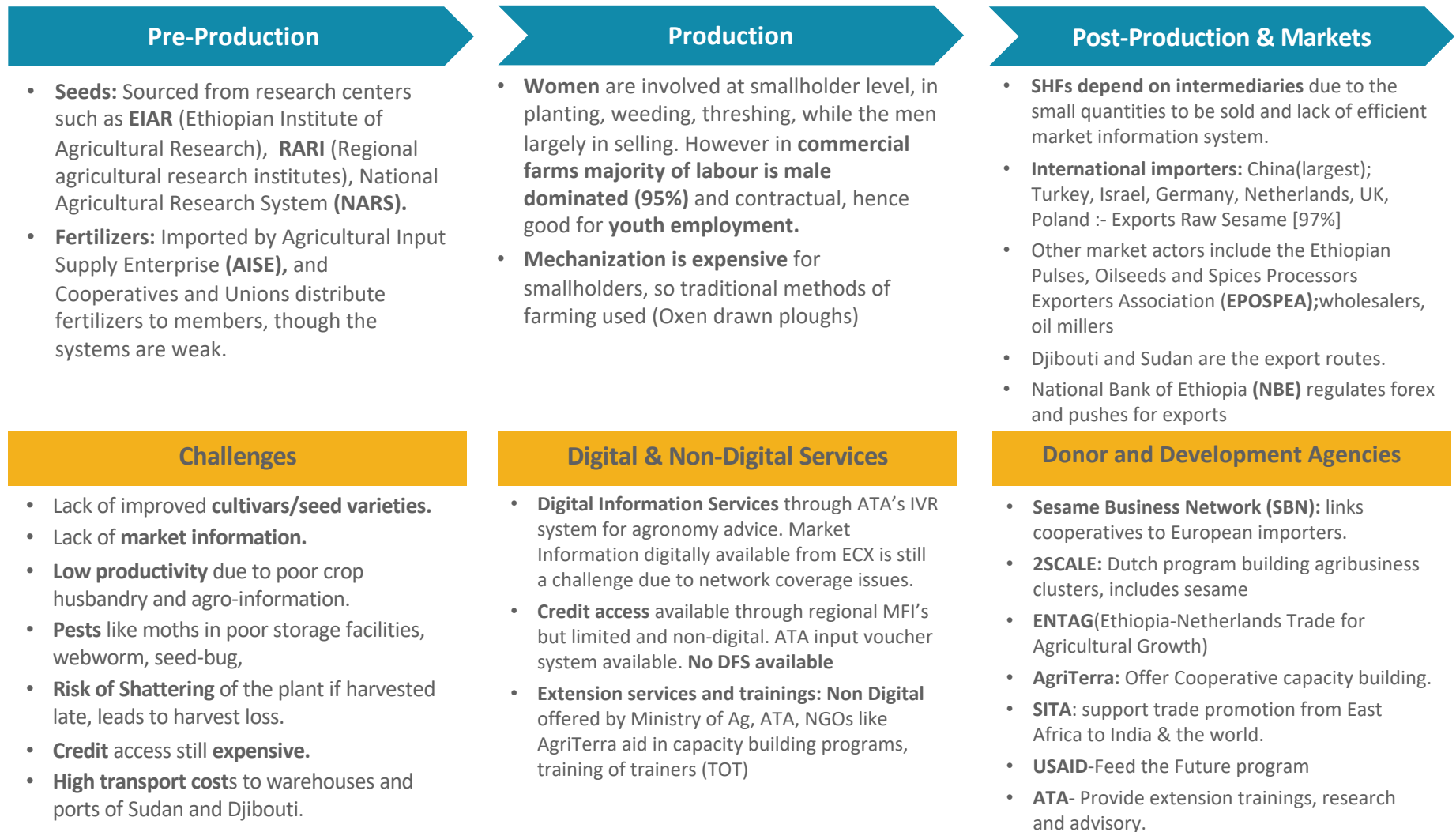
## Main Production Zones



## Why look at the Sesame Sector?

- Next to coffee, sesame seed is the **second largest** agricultural export earner for Ethiopia.
- Sesame is traded as a commodity at the Ethiopian Commodity Exchange(ECX).
- The **Humera, Gondor and Wollega** sesame seed type are well known in the world markets, with Humera and Gondor used in bakeries, confectionaries; and Wollega used in edible oil making.
- As a **growing value chain**, the sesame sector has the potential to involve more smallholders under its production, hence one way of empowering them is linking them to domestic and international markets.
- Sesame features in the GTP I & II of Ethiopia's growth strategy, under the non-stalk cereals, which projects average production to grow by 2020 from **21.1 quintals/ha (2.1 tonne/ha) in 2014/15 to 31 quintals/ha (3.1 tonne/ha) in 2019/20**

# The Sesame value chain is structured, however has long and traditional marketing channels and poor market infrastructure



Source: 1. Ethiopian Institute of Agricultural Research (EIAR) - Crop Research-Barley (2019) 2. Rashid, Shahidur & Abate, Gashaw & Lemma, Solomon & Warner, James & Kasa, Leulseged & Minot, Nicholas. (2015). The Barley Value Chain in Ethiopia. 3. Bekele B, Alemayehu F, Lakew B. In: Food Barley: Importance, Uses, and Local Knowledge. Grando S, Macpherson HG, editor. ICARDA, Aleppo, Syria; 2005. Food Barley in Ethiopia; pp. 53–82.

# Coffee: Accounts for 34% of the country's commodity exports(2017/18), Africa's leading producer of Arabica

4.2 M

*Smallholder Farmers*

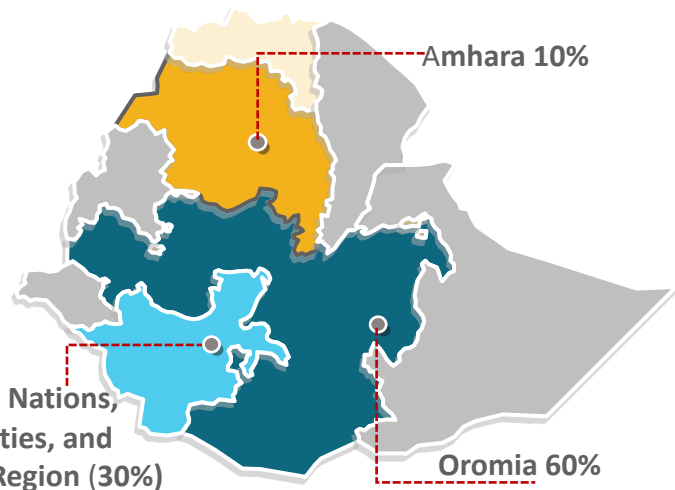
0.5M

*Annual production (MT)*

\$530M

*Production value (USD)*

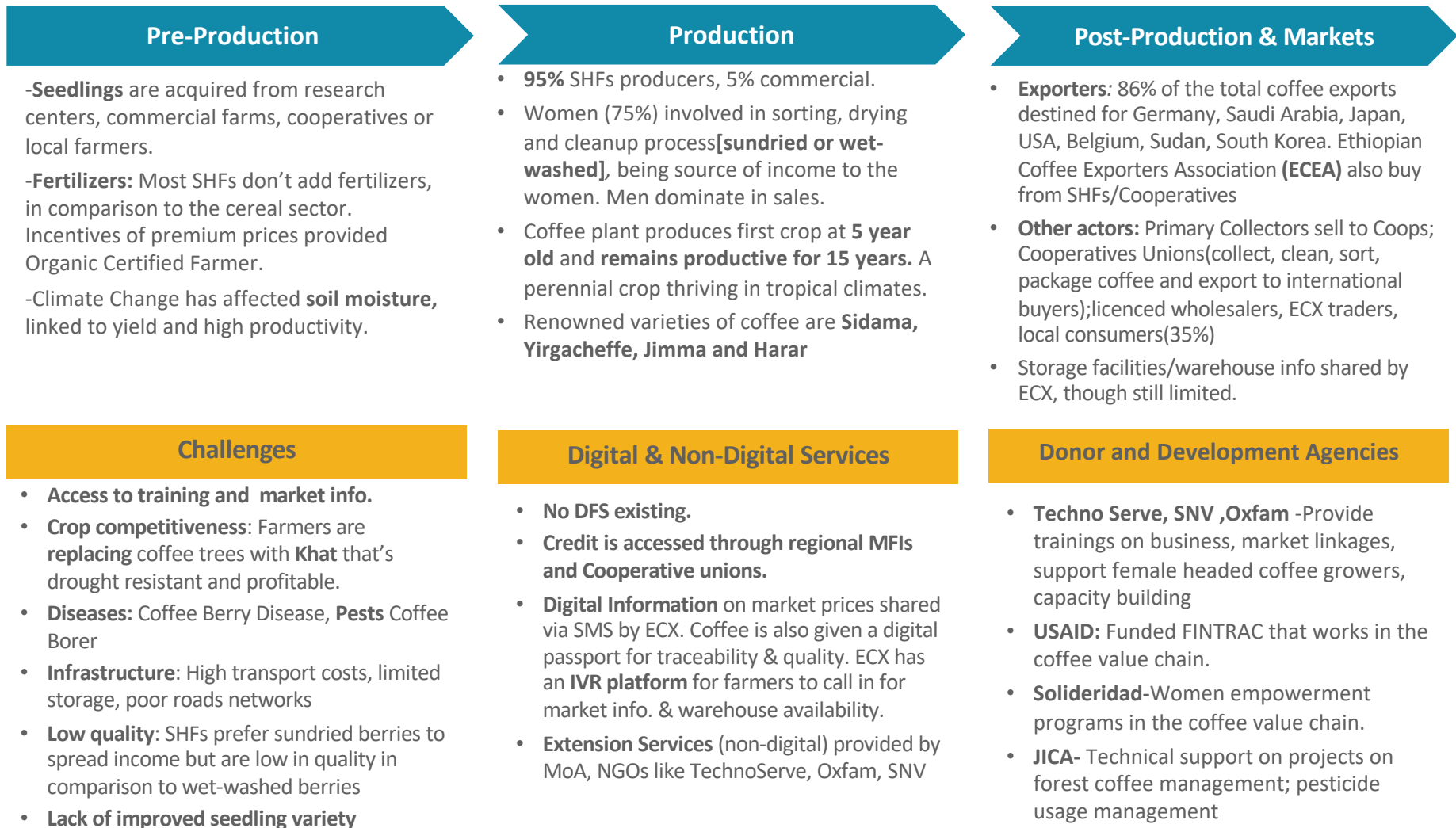
## Major Production Zones



## Why look at the Coffee Sector?

- Ethiopia is **Africa's leading producer and exporter of Arabica coffee (34% of country's commodity exports)** & in 2018/19 ranked 10th in the world's largest exporter contributing about 4.2% of total world coffee production.
- 4 ways of coffee production, grown mostly by SHFs:
  - Forest Coffee** [basically free growing wild trees (**covers 10%**)]
  - Semi-Forest Coffee** [claimed trees but cared for (**covers 35%**)]
  - Garden Coffee** –[grown in backyards, use organic fertilizers (**covers 45%**)]
  - Plantation Coffee** –[grown on commercial farms (**covers 10%**)]
- Ethiopia has a system of **traceability** of coffee traded at the, Ethiopian Commodity Exchange(ECX)by providing a digital passport to the coffee (ensuring quality& transparency on origins).
- **Certifications** of Ethiopian coffee include Fairtrade, Organic coffee, Bird –friendly, UTZ and Global Forest Alliance
- Coffee features under the GTP II of Ethiopia's growth transformation plan with **total production is projected to increase from 420 thousand tons in 2014/15 to 1045.05 thousand tons by 2019/20.**

# The Coffee value chain is highly-structured, with strong market linkages and structured cooperative unions



# Honey: A staple crop in Ethiopia, with about 6.5 M beehives, but low production and largely informal.

1M

Smallholder Farmers

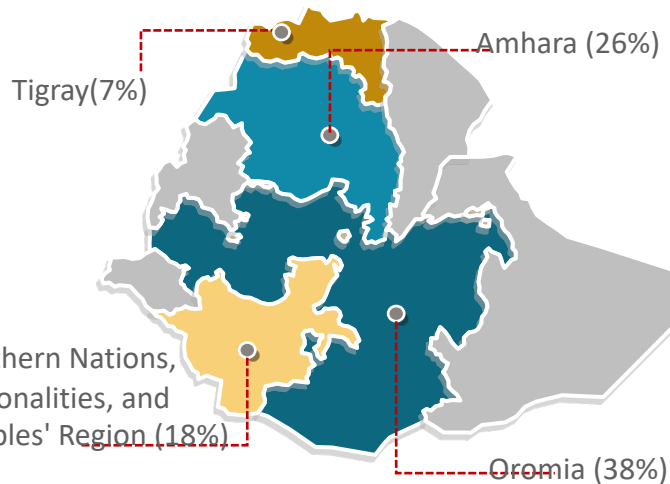
48K

Annual production (MT)

\$120M

Production value (USD)

## Main Production Zones

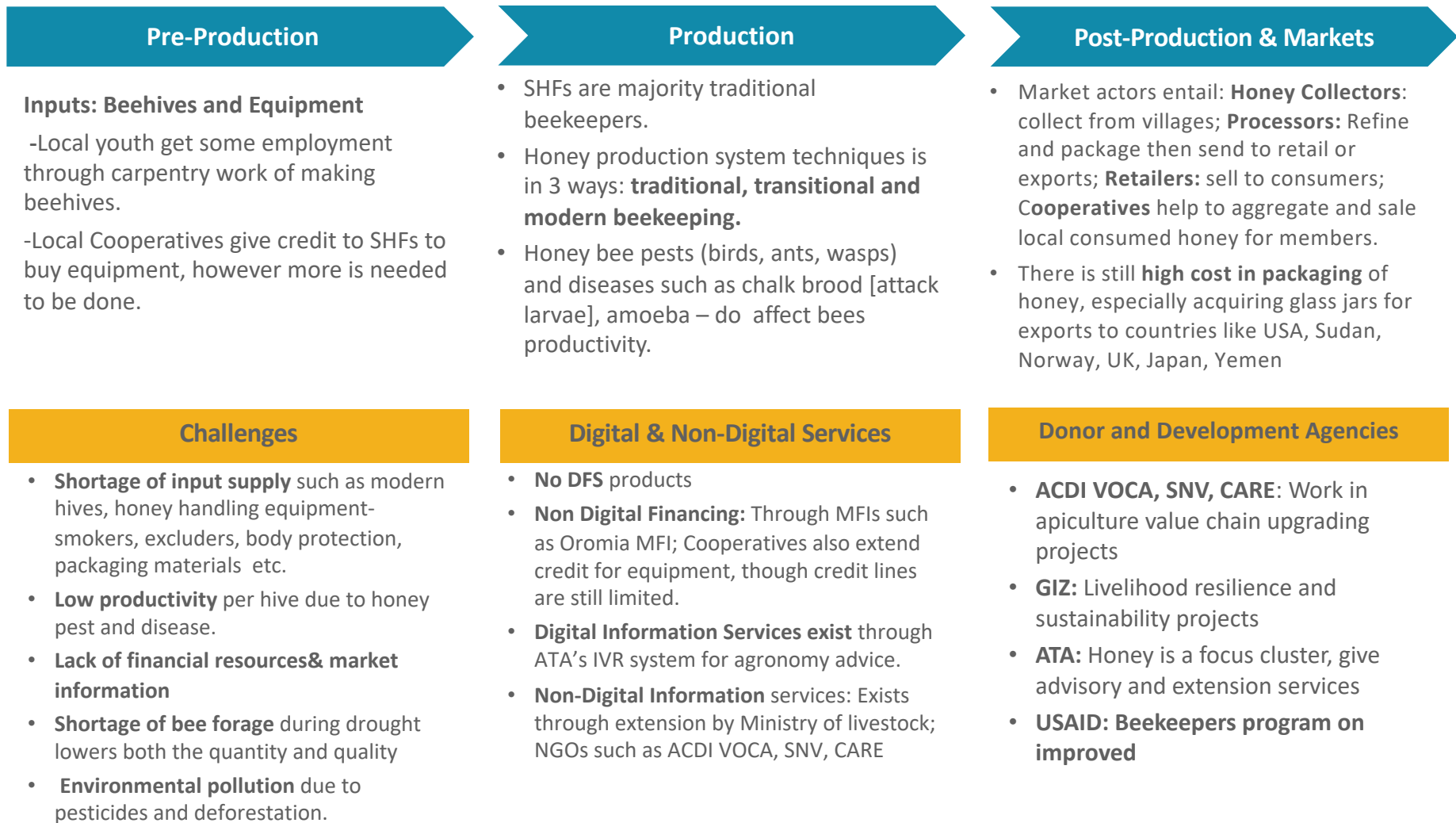


## Why look at the Honey Sector?

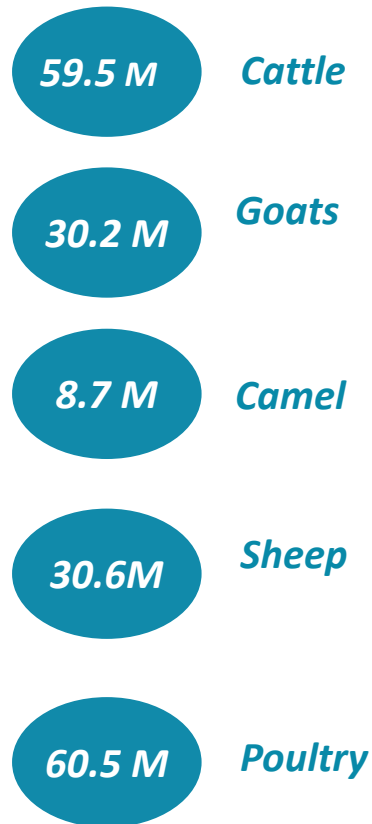
- Honey is a **staple crop**, that requires low investment in cash and time.
- It is **growing value chain and potentially of high value/income to smallholders**. For example: In Southwest Ethiopia, production from honey can reach 100-200 kg per year with a price per kg of 8-10 Birr. Thus, the potential annual income from honey can reach 800-2000 Birr.
- Contributes to environmental conservation and sustainability through forest management and bees pollination.
- SHFs have an average of 12 hives per household
- There has been a short supply of honey and honey products in Ethiopia and global market, due to poor apiculture practices, pests and diseases.
- Honey and Beeswax production features in the **GTP II (2014-2020)**, with **honey** projected to increase from **60.7 tons to 123.9 thousand tons**; and **beeswax** projected to increase from **5.7 thousand tons to 8.6 thousand tons** by 2020)



# The Honey value chain is highly-structured, with strong market linkages and structured cooperative unions



# Livestock Sector: Set to transform the economy, Cattle is a priority sector due to scale and production value



## Why look at the livestock sector?

- The Livestock sector is large and set to transform Ethiopia's economy, with its contribution of about **45 percent to agricultural GDP (cattle being the most important generator, hence a priority)**
- Ethiopia **Livestock Master Plan (LMP)** was undertaken by the newly established **Livestock Resources Development Sector (LRDS) or Livestock State Ministry (LSM)**, and **Ministry of Agriculture (MoA)**, with objectives to contribute to the Growth Transformation Plan GTP II 2015-2020
- During **GTP I (2010-2015)**, reports indicate unsatisfactory progress in the livestock sector, hence **GTP II (2015-2020)** has set targets for:

(i)**Total Meat production(cattle, goat, camel, poultry)** to increase from 1,321 thousand tons to 2,103 thousand tons by 2020

(ii) **Total Milk production (cow, goat, camel)** to increase from **5,304M** litres to **9,418M** litres by 2020.

# Cattle: Beef is both a cash (exports) and staple product, with approximately 13 million smallholder households

13 M

Smallholder Farmers

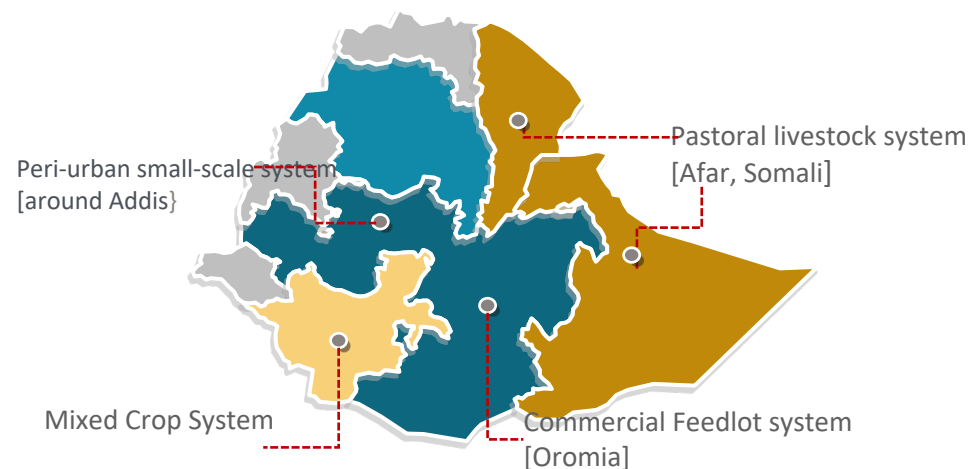
0.4 M

Annual production (MT)  
(cattle beef)

\$980 M

Production value (USD)  
(cattle beef)

## Production Zones



## Why look at the Cattle Beef sector?

- Beef is a dual product (cash) and staple, with indigenous breeds of cattle being the majority.
- No specialized beef production system in Ethiopia, however fattening of cattle and small ruminants are lucrative.
- There are four types of beef production system for cattle in Ethiopia: **the commercial feedlot system; peri-urban small-scale fattening ; backyard fattening in the mixed crop-livestock system; and the pastoral/agro-pastoral livestock production system.**
- **The average carcass weight for cattle is 110 Kg.**
- Live Cattle and beef are also exported through formal set routes, however its reported that majority trade through informal routes/informal trade. Some reasons for this trade: **challenges accessing formal markets.**

Source: 1.CSA Agricultural Sample Survey 2014/15 2.Gebreselassie, N. Review on Beef Cattle Production and Marketing System in Ethiopia 2018

3. FAO. Africa Sustainable Livestock 2050: Livestock production systems spotlight- Ethiopia Cattle Sector 2018 4. Shapiro, B.I. Ethiopia livestock master plan. ILRI Project. 2015 5. RuLIS dataset (FAO), 2014. 6.FAOSTAT 2016

# The Cattle Beef value chain is large, semi-structured, with weak informal market linkages.

## Production

- **Commercial Feedlots:** Av. herd size of 100 animals fattened, mainly **Borana breeds**.
- **Periurban small-scale fattening:** Av. Herd size of 5-8 animals fattened, mainly **Zebu breeds**.
- **Mixed crop-livestock:** Backyard fattening, around 9.6 M farms practice this, average herd size of 1-4 animals fattened at a time, mainly **Zebu breeds**.
- **Pastoral/agro-pastoral:** Av. herd of 10-20 or >200 in large scale, animals fattened in a rangeland system, mainly **indigenous breeds**.

## Commercialization

- **Market actors:** In the beef & live animal value chain include Producers, Brokers, Collectors, Feedlot operators, Abattoirs, Importers, & Exporters.
- **Informal exports** are a channel to sell live animals (75-80%), happens cross-border unregulated, while formal exports use a designed strict route with slaughterhouses in Addis Ababa.
- **Major importer** of Ethiopian beef is the Middle East Countries.

## Challenges

- **High transport costs**
- **Price fluctuations**
- **Informal routes** and trade brings unfair competition to those who trade in the formal routes.
- **Animal health:** Limited access to vaccines; Veterinaries.
- **Animal Genetics:** Crossbreeding is encouraged to get hybrids, more extension needed.
- **Insufficient animal feed/grazing land**

## Digital & Non-Digital Services

- Extension and trainings: offered by **ILRI, ATA Livestock Unit, Ministry of Livestock, Vet. Officers**
- **Digital Info. Services (DIS):** ATA has the IVR system for SHFs to call in for agro-info.
- **Credit access** is limited. PRIME project has introduced sharia micro-finance in Somali region, (more to be done).
- **Index-based livestock insurance (IBLI)** exists., e.g In Borana region in 2017 farmers got compensated due to drought.

## Donor and Development Agencies

- **BMGF-Funded Livestock Master Plan**
- **USAID & Mercy Corps Ethiopia: (PRIME project)**
- **CIDA:** Markets access program
- **World Bank-** Pastoral Development Program
- **ATA:** Advisory and extension
- **ACDI/VOCA-** The Feed Enhancement for Ethiopian Development (FEED) project
- **IFAD:** Pro-poor sheep& goat program

# Dairy: Cattle is the largest contributor for total national annual milk output in Ethiopia.

13 M

*Smallholder Farmers*

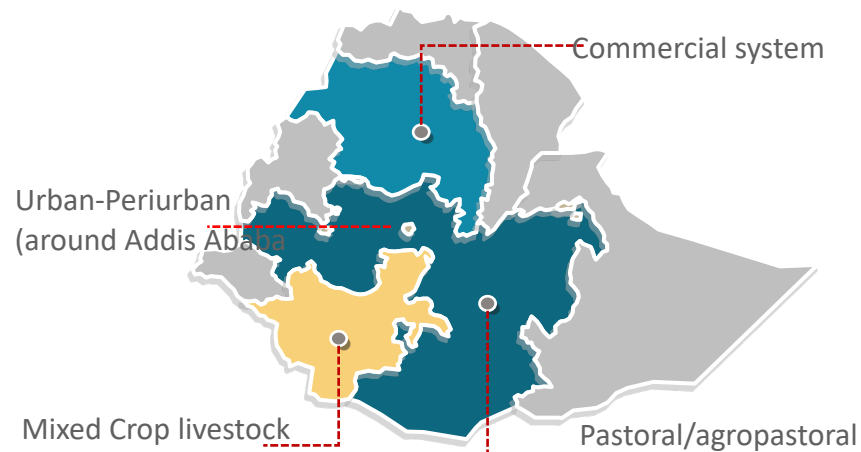
3.1M

*Annual production (MT)  
(cattle milk)*

\$980M

*Production value (USD)  
(cattle milk)*

## Production Zones



## Why look at the Livestock Dairy sector?

- Dairy is a staple product in Ethiopia, mainly depends on indigenous livestock resources, **cattle contributing the largest of the total national annual milk output at (81.2%)**, followed by goats (7.9%), camels (6.3%) and sheep (4.6%).
- Women involvement is high in the dairy value chain, from the production, milk processing which is carried out at home-level, to marketing, which is key in providing economic empowerment.
- Out of the 59M cattle (about 6.7- 7M are dairy cattle)
- There are 4 major dairy production systems:  
**-Commercial; -urban/peri-urban; -mixed crop-livestock; and -pastoral/agro-pastoral.**
- The mixed crop livestock system is key in dairy production, with about 65% of the total milking cows, and produce about 72% percent of the national annual milk output.

# The Dairy value chain is fragmented in supply, but has high women involvement with a high growth potential.

## Production

- **Main inputs:** Feeds, artificial insemination & animal health products (vaccines, de-wormers, pesticides)
- **(i) Commercial dairy:** large scale >100 cows, medium 30-50 cows, small scale <30 cows, mainly crossbred breed, yield 15-20 Litres;
- **(ii) Peri-urban dairy:** Av. herd size 1-5 cows, crossbred breeds, yield 10-15 Litres;
- **(iii) Mixed Crop:** Largest system with SHFs, Av. herd size 4 cows; mainly indigenous breed; yield 1.9 Liters;
- **(iv) Pastoral:** Av. Herd size 10-20 cows, large herds >200 cows, yield 1.5 Litres, mainly indigenous breeds.

## Commercialization

- Key actors in the dairy value chain include Producers, Traders, Cooperatives, Dairies, and Retailers.
- **Women are highly involved in the value chain (Production, processing to sales).**
- Large processors operate at 50% capacity due to **fragmented milk supply.**
- Raw milk (50%) is sold directly by producers in the neighborhood and to dealers at farm gates, pasteurized milk (71%) sold through retail shops and about 15% through super-markets.

## Challenges

- **Weak extension services**
- **Limited access to Vets, Vaccines**
- **Limited animal feed and water**
- **Climate Change:** Droughts **Diseases:** e.g East Coast Fever
- **Milk Quality:** lack of good storage facilities (cold chain)
- **High transport costs**
- **Poor road networks**
- **Animal genetics**

## Digital & Non-Digital Services

- No Digital Financial Services available. ATA IVR system, provides digital information service
- **Extension and training services:** Offered by Community based workers, ILRI, ATA, NGOs: SNV, Mercy Corps Ethiopia (however more to be done)
- **Credit access** is limited. Oromia MFI gives credit, but limited
- **Index-based livestock insurance (IBLI),** but low uptake and limited.

## Donor and Development Agencies

- **Mercy Corps Ethiopia:** PRIME project in the lowlands
- **ATA:** Supports training, provides advisory and extension services
- **World Bank:** Livelihoods resilience program & major donor
- **BMGF:** Funds research and donor
- **DFID:** Donor, goat dairy program, Private enterprise program
- **SNV:** EDGET program-focus on dairy sector growth

# Poultry: Large value chain with low production due to high poultry mortality rates.

7M

Smallholder Households

54,400

Annual production (MT) (Eggs)

13,200

Annual production (MT) (Poultry Meat)

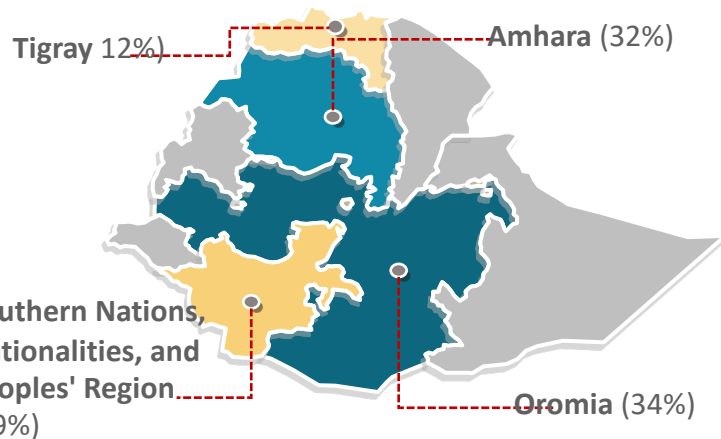
\$43M

Production value (USD) (Eggs)

\$88M

Production value (USD) (Poultry Meat)

## Production Zones



## Why look at the Poultry sector?

- Poultry keeping is common in rural households due its **low input requirements, and fast income generator, good source of nutrition and asset-building capital.**
- Its estimated out of every ten (10) households, six (6) keep poultry. Majority of households keep poultry, mostly of indigenous breed. Poultry sector has shown to economically empower women and youth.
- Poultry farming is also a risky business. Most households have as many as 40 chickens at the beginning of the year, but may end up with only **10 adult chickens** due to **high rates of mortality.**
- Poultry features in the GTP II: 'total meat production (cattle, goat, camel and poultry) is projected to increase from 1,321 thousand tons in 2014/15 to 2,103 thousand tons by the end of the plan period'.



# The Poultry value chain however unstructured, is empowering women & youth as an easy income generator.

## Production

- SHFs practice backyard poultry rearing.
- **Inputs of production:** Feed (commercial, scavenging residues); Day-old chicks, hatching eggs, improved cockerels and pullets, water & feed equipment, vaccines and drugs.
- **Vaccines:** The National Veterinary Institute of Ethiopia.
- **Suppliers:** e.g. Ethiochicken (day old chicks) Alema farms (poultry feed, day old chicks)

## Commercialization

- Key actors involve producers, suppliers (feed, chicks), retailers, traders (hotels, supermarkets), bakeries, local consumers.
- Women and youth involved in poultry husbandry to the sales. Most sold at the farm gate and in the neighbourhood.
- Indigenous meat and eggs highly preferred by locals.

## Challenges

- **Feed:** Improved feeds are expensive
- **Vaccines:** Limited and uptake is low
- **Diseases:** Newcastle disease (ND) is a major cause of mortality in village poultry
- **Weak extension services,** poultry husbandry training is insufficient.
- **Bird genetics:** Local breeds still dominate the improved breeds.

## Digital & Non-Digital Services

- No Digital Financial or Information Services(DFS /DIS) available.
- Credit access is limited. Women borrow in their small groups.
- Extension; Provided by Development agents (DA) in the Peasant association (PA) groups; Vet. Officers, Farmer Training Centres.
- No insurance available for poultry.

## Donor and Development Agencies

- **FINTRAC-** Poultry value chain development
- **USAID-**Funds NGOs in poultry sector
- **World Bank:** Supports public sector engagement in Poultry



# *Thank You!*



**MERCY  
CORPS**

**AGRIFIN**

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*This presentation is based on research funded by the **Bill & Melinda Gates Foundation**. The findings and conclusions contained within are those of the authors and do not necessarily reflect positions or policies of the Foundation*