19. Exports and Imports of Commodities and Value Chains

19.1 Overview

Ethiopia's economy largely depends on agricultural commodities for its foreign exchange earnings and the export cargo volume partly reflects this. Of the top ten major export items by volume, eight are from the agricultural sector, being, in order of importance, pulses, coffee, oilseeds, fruits and vegetables, flowers, chat, live animals, meat products and spices, while the two most important mining products are tantalum and gold.

The export value of flowers, chat and fruit and vegetables have been increasing while the export values of oilseeds, pulses and live animals has been decreasing. Exports of meat, spices, tantalum, and gold are stable but are not major export earners for Ethiopia.

The total export cargo volume of the top ten exported items was 1.2 million metric tons in 2021 and are estimated to grow to 1.37 million metric tons by 2030, which would be almost a return to the volumes exported in 2016, which were 1.39 million metric tons, as shown in **Figure 19.1**.

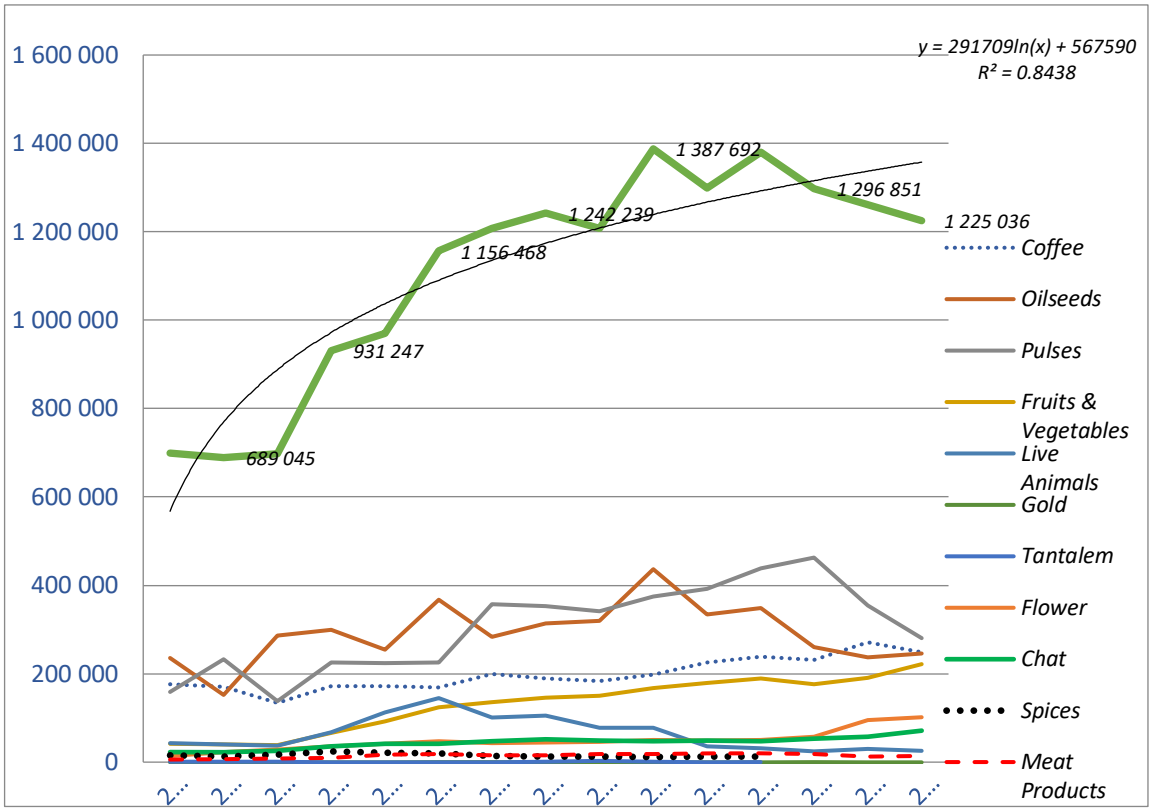
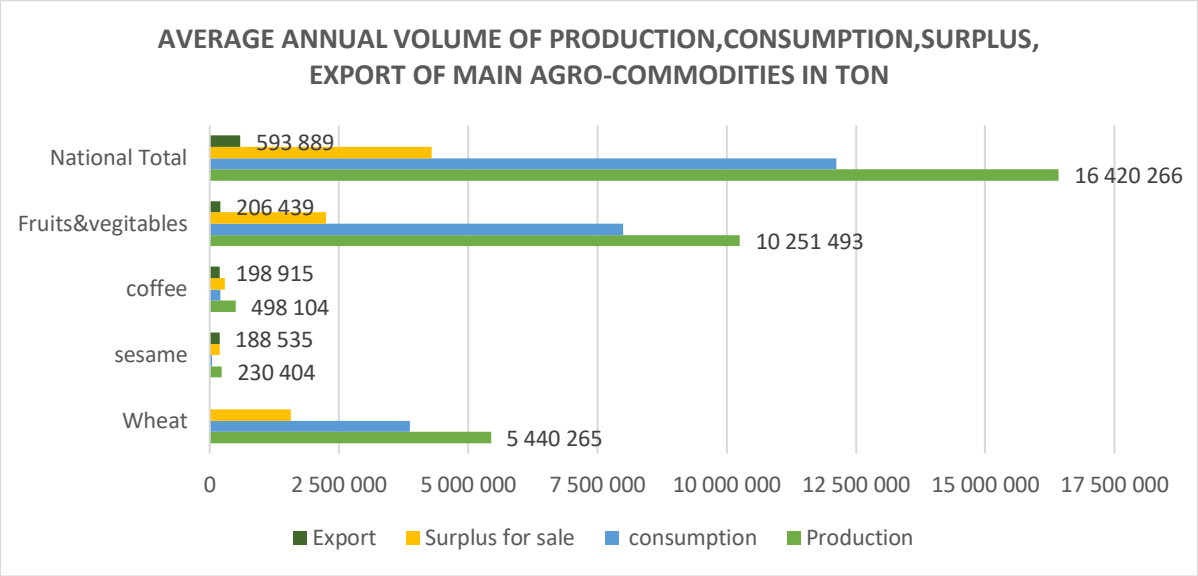


Figure 19.1: Trend of Ethiopia's top ten export items by volume 2007-2021

Ethiopia exported about 594,000 tons of coffee, sesame and fruits and vegetables per year, on average, from 2020 to 2022, according to Ethiopian Central Statistical Agency.

In the same period the total average production for these commodities, plus wheat, was 16.4 million tons, with wheat contributing 5.4 million tons. About 4.3 million tons was consumed within the production areas, with about 11.5 million tons consumed domestically within Ethiopia and about 0.6 million tons was exported. This is shown in **Figure 19.2**.

Figure 19.2: Average annual production and export volume of main agricultural commodities



19.2 Containerised Cargo

Containerised imports account for about 50 per cent of Ethiopia's total imports. As shown in **Figure 19.3**, containerised cargo imports increased during the 2015-2017 period at an average CAGR of 4.3 per cent but have been declining since 2017 at an average CAGR of 8.2 per cent.

Figure 19. 3: Containerised Cargo Imports by Year in Million Tons

Source: UN Comtrade

This decline can be partly attributed to the general economic decline experienced by Ethiopia in this period, and the subsequent lack of access to foreign exchange which means that the population has not been able to import as much, but could also be because of an import substitution effect in that more is being produced locally and, partly the lack of access to foreign currency, means that Ethiopians have less choice and they are "buying local".

Most of the containerised products imported into Ethiopia and exported from Ethiopia pass through the Port of Djibouti, mainly at the Doraleh Container Terminal (operated by SGTD) but also at the Doraleh Multipurpose Terminal (operated by DMP). All goods are subject to customs clearance procedures at the port. Customs officials inspect the goods, verify the accompanying documentation, and assess applicable duties and taxes.

Figure 19.4 shown the business processes that are followed for containerised imports entering Ethiopia from Djibouti through the borders of Galafi or Dewele, destined to Modjo Dry Port.

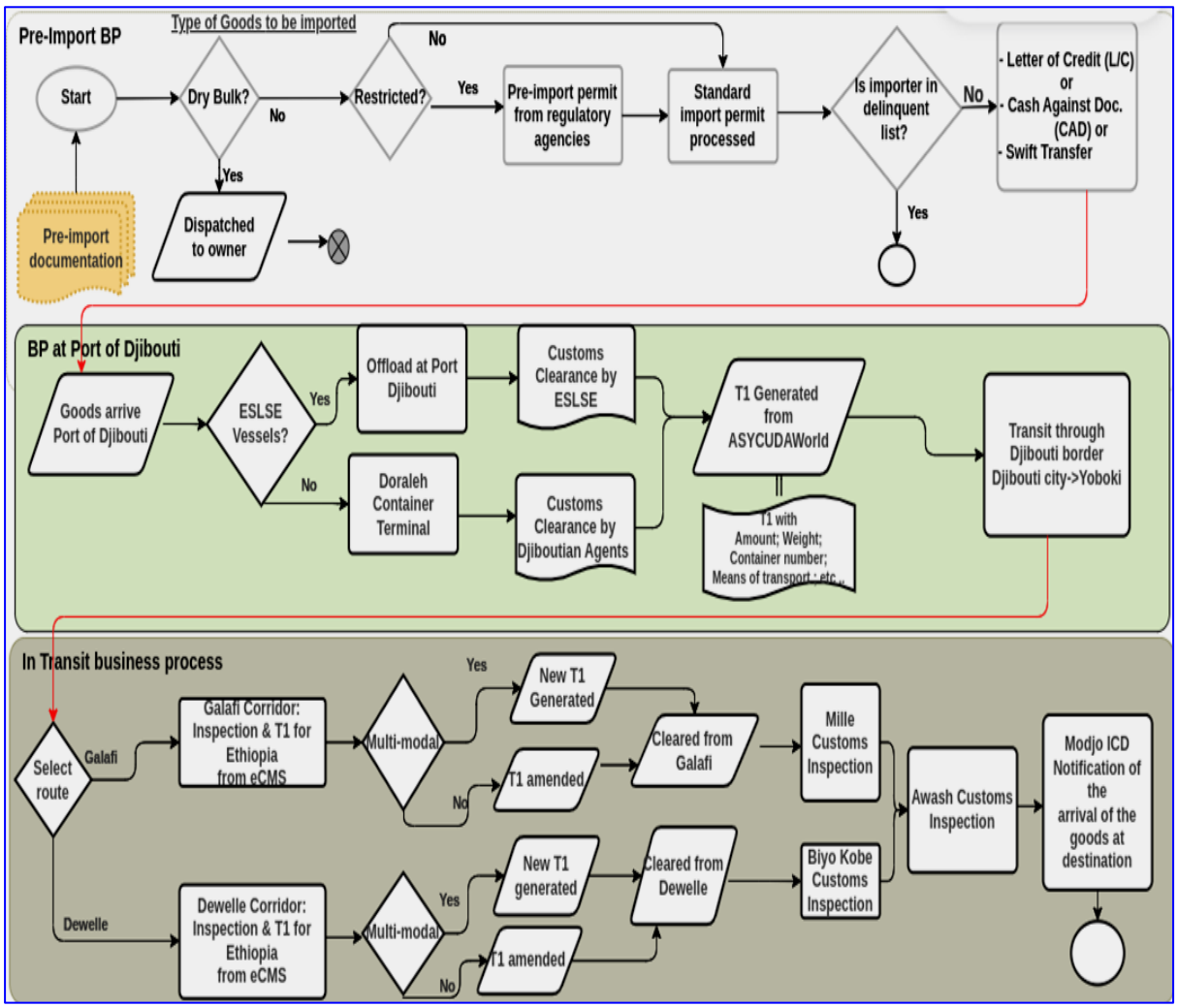
The BPA revolves around three core processes, these being:

i) Pre-import, which starts with preparation of documentation and ends with issuance of international payment options. Getting a pre-import permit is considered to be the main bottleneck for restricted goods, while issuance of a letter of credit is a bottleneck for both restricted and unrestricted commodities, regardless of whether the importer is from the private or public sector.

ii) The Djibouti port service process starts with goods arrival, to transit, to the border crossing. Both offloading and customs clearance are considered the main practical bottlenecks.

iii) The in-transit process starts from the Dewele or Galafi border posts to Modjo dry port for container cargo and fertiliser and final destination for dry bulk cargo. Here, the main bottlenecks are considered at customs check points of Awash, Mille, and Biyo Kobe.

Figure 19.4: Business Process Diagram for imports by road through Djibouti port and through Dewele or Galafi border post to Modjo ICD and to selected destinations in Ethiopia



As the Ethio-Djibouti Railway, linking the port(s) of Djibouti to Addis Ababa, has become operational, increasing volumes of cargo are moving from road to rail so that, currently, more containerised cargo

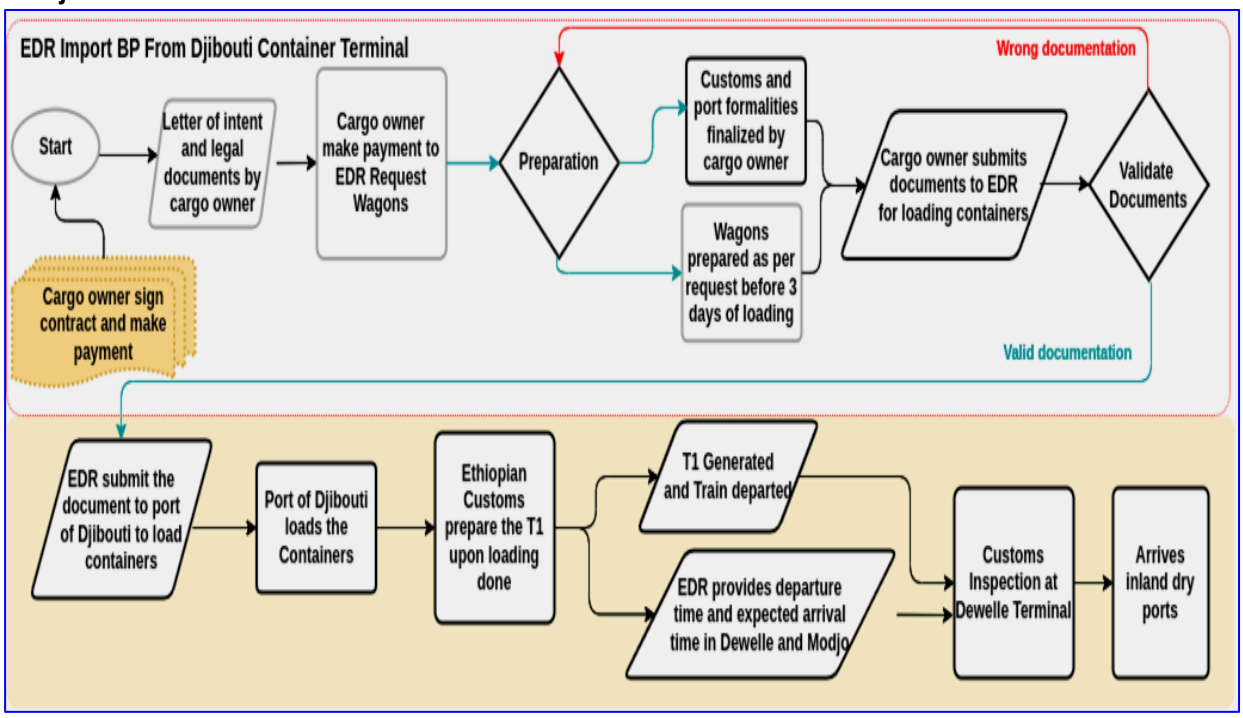
imports from Djibouti are now moving to Addis Ababa and Modjo Dry Port by rail rather than by road.

Figure 19.5 is the Business Process Diagram that shows the process flow for cargo moving by train from Djibouti Port and Modjo Dry Port.

The Business Process for import via rail transport for international container cargo covers two core processes:

- Document validation, which is done by the owner and EDR, starting from contract to document validation. Passing through customs formalities is considered the main bottleneck of this process for cargo owners.
- The issuance of order occurs between EDR and Djibouti port. Here, loading at Djibouti port is considered a major bottleneck.

Figure 19.5: BPA Diagram for imports by rail through Djibouti ports and Dewele border post to Modjo ICD for containers



19.3 Coffee

Ethiopia is Africa's largest coffee producer and the world's fifth largest exporter of Arabica coffee and coffee is one of Ethiopia's main sources of export revenue, generating, on average, about 30 to 35 per cent of the country's total export earnings.

According to the USDA Foreign Agricultural Service, in 2020-21 coffee was cultivated on about 540,000 hectares in Ethiopia and more than 15 million smallholder farmers participate in the coffee value chain, with about 25 per cent of the population directly or indirectly dependent on the coffee value chain.

The major export destinations for Ethiopian coffee are Saudi Arabia, Japan, Germany, China, Switzerland, France, Italy and South Korea. **Table 19.1** shows the average annual production of

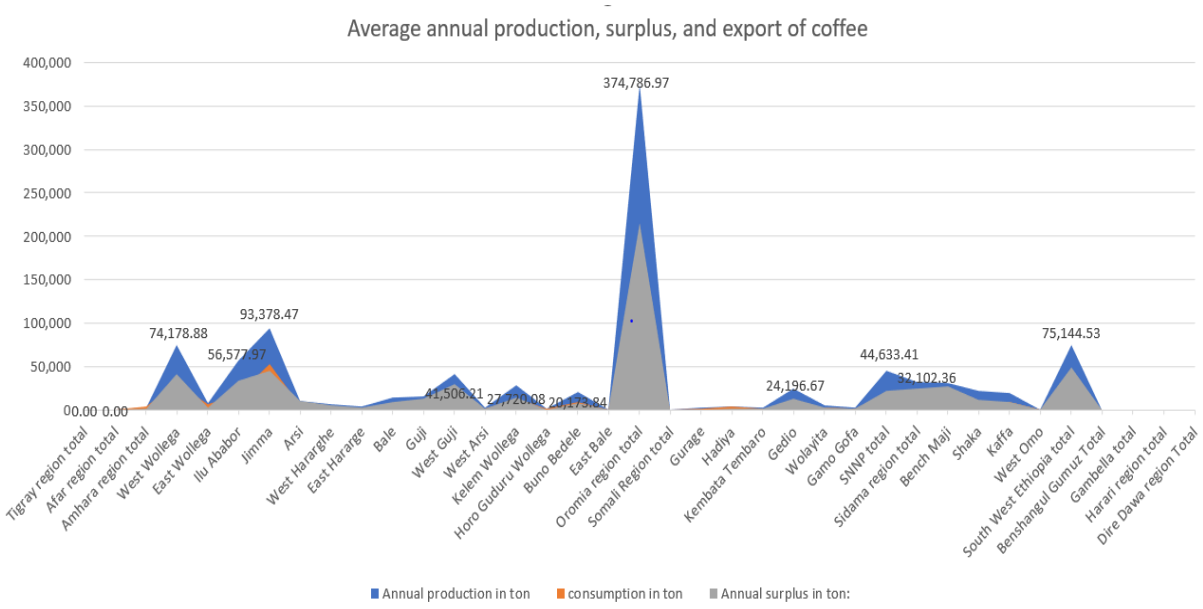
coffee from 2020 to 2022, as per CSA data, of 498,104 tons of which 206,446 tons are consumed within the producing zone, so a surplus of 287,895 tons, of which 198,915 tons are exported.

Table 19.1: Annual Production and Domestic Consumption of Coffee

Region	Annual production (tons)	Consumption (tons)	Annual surplus (tons)	Export
Ethiopia	498,103.93	206,445.79	287,894.88	198,914.84

As shown in **Figure 19.6**, most of Ethiopia's coffee is produced in the Oromia region. In the 2020 to 2022 period about 375,000 tons of the total annual average production of 498,104 tons, or about 75 per cent, was produced in the Oromia region.

Figure 19.6:Annual Production and Domestic Consumption of Coffee



19.3.1 Coffee Value Chain

The coffee value chain is shown in **Figure 19.7**

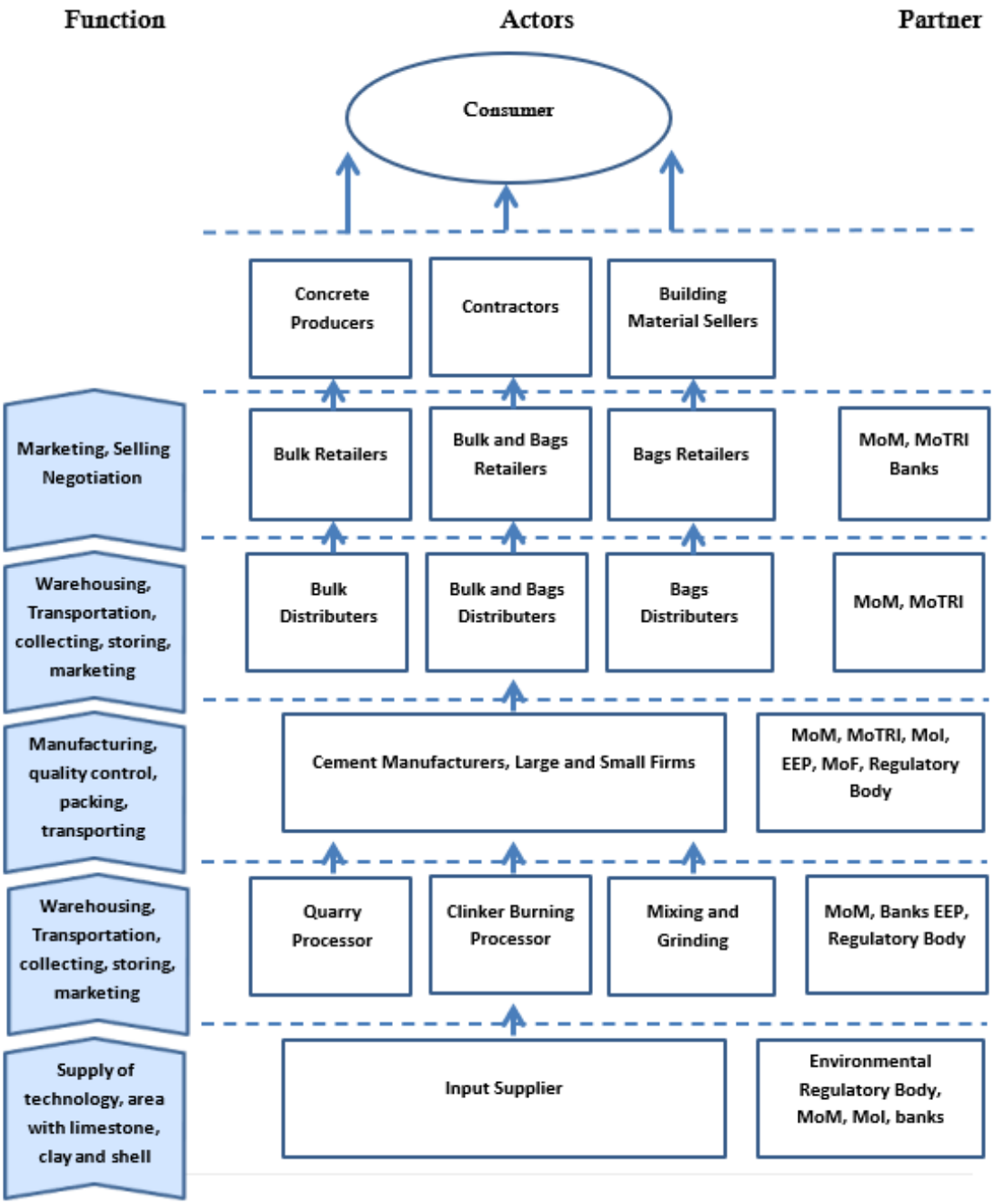
The coffee value chain is reliant on suppliers who provide inputs such as coffee seedlings, new seed varieties, pesticides, fertiliser, farming equipment, cultivating machines, pruning equipment, etc. These inputs are supplied by district offices of agriculture, rural development cooperative promotion and the Agricultural Research Institute.

Coffee producers, both small-scale and large-scale farmers, may be involved in procedures other than growing coffee, such as washing, pulping and sorting.

The large-scale farmers sell their coffee to wholesalers who aggregate and deliver to ECX warehouses for inspection of quality and grading. ECX provides the framework in which coffee is bought and sold in that it has certified grades and standards and offers a membership-based trading environment with enforcement of standardised terms and conditions for contracts.

ECX stores coffee in its 25 warehouses and 60 sheds across the country until laboratory checks are done and the coffee is graded. Once the coffee is graded it is sold through registered agents either for domestic consumption or export.

Figure 19.7: Coffee Value Chain



The main challenges in coffee value chain are:

- Large number of brokers in the value chain;
- Lack of adequate market information at the farmer level;
- Climate change resulting in unpredictable rain, without the option to irrigate the crop;

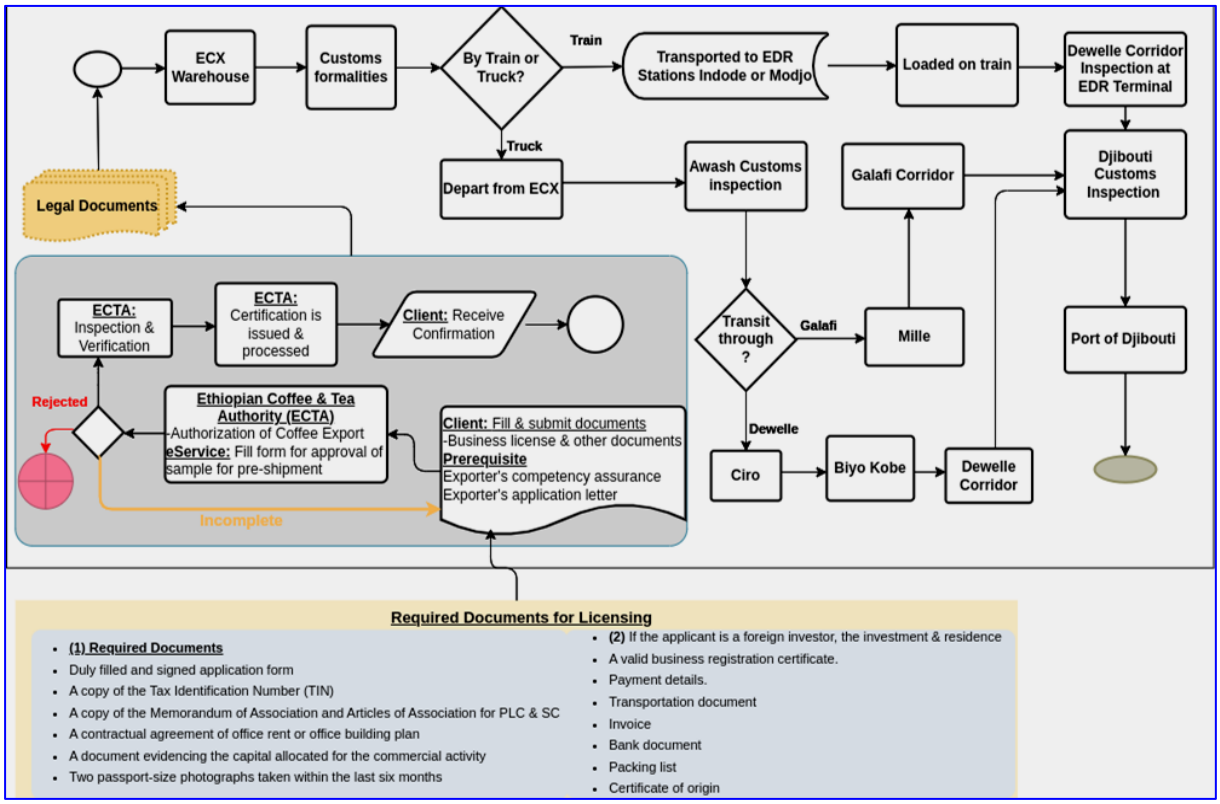
- Disease and pest infestations and associated risks;
- Price fluctuations; and
- Access to transport to get the coffee to market.

Very low-quality control, the deficiency of a strong coffee seed supply system, lack of credit to the coffee producers and a lack of clear national direction are considered the major support related challenges. Limited use of enhanced technology, land degradation and population pressure, limited access to inputs such as fertiliser, seeds, credit and irrigation; and high costs of quality coffee production and processing are also among the challenges identified by the Ethiopian Ministry of Agriculture.

19.3.2 Business Process for Export of Coffee

Figure 19.8 shows the Business Process for Export of Coffee.

Figure 19.8: Business Process for Export of Coffee from Ethiopia



19.4 Sesame

Ethiopia's three main oilseed crops (sesame, soybean, and Niger seed) account for about 20 per cent of the country's total agricultural export profits. The oilseed sector is one of the fastest growing sectors in the country and is the second largest source of foreign exchange earnings after coffee. Sesame is the main oilseed crop in terms of production value. **Figure 19:9** shows the amount of Sesame produced by year.

Ethiopia is one of the world's top six sesame producers and accounts for 14 per cent of total global exports. It is a crop that is cultivated and grows wild in Ethiopia, with a wide range of cultivated

sesame varieties. Sesame is grown in Amhara, Tigray, Oromia, Benishangul-Gumuz, and the Southern Nations, Nationalities, and People's Region (SNNPR) but the major production areas are in Ethiopia's northern and northwestern regions, bordering Sudan and Eritrea.

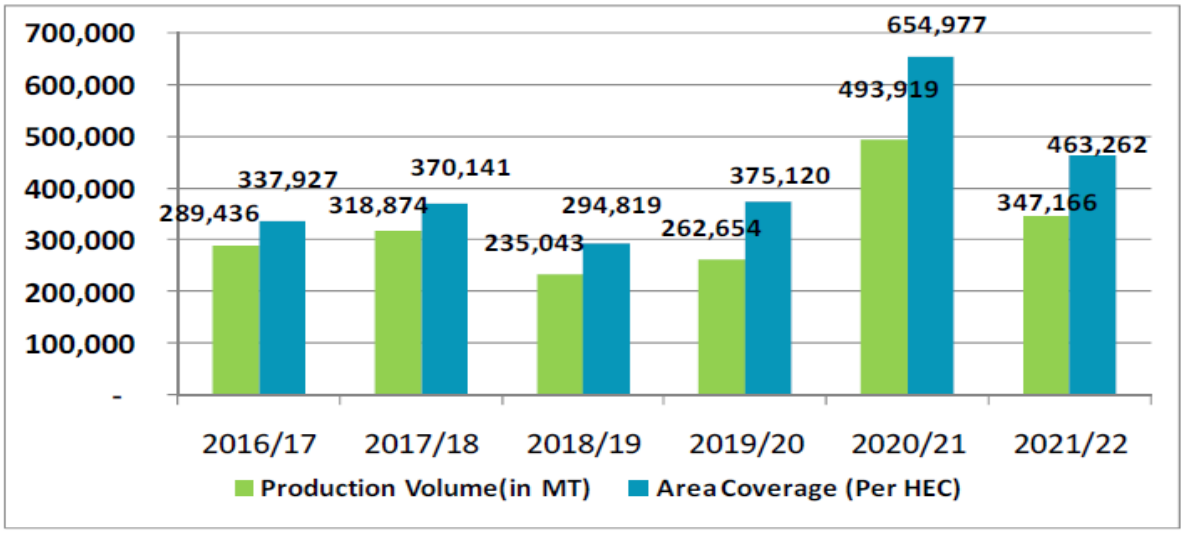
Locally produced oilseeds are an important component of the domestic economy as they are used to produce cooking oil and so save on foreign exchange as an import substitution crop.

The 2020-2022 average annual production of Sesame is 230,404 tons, of which about 41,204 tons are consumed within the producing zone. About 99 per cent, or 188,535 tons, of the surplus of 189,200 tons is exported.

Figure **19.10** shows the average annual production of Sesame seed and the average annual exports by year and **Figure 19.11** shows the trend in exports, in terms of metric tons, of Sesame from Ethiopia from the 2017/18 to 2021/22 seasons.

The major export destinations for Ethiopian Sesame exports are Israel, United Arab Emirates, China, Singapore, Viet Nam, Japan, Turkey, Jordan, Saudi Arabia, Yemen.

Figure 19.9: Ethiopian Sesame Seeds Production and Area Coverage (Source: CSA)



Source: Central Statistical Agency

Figure 19.10: Average Annual Production of Sesame

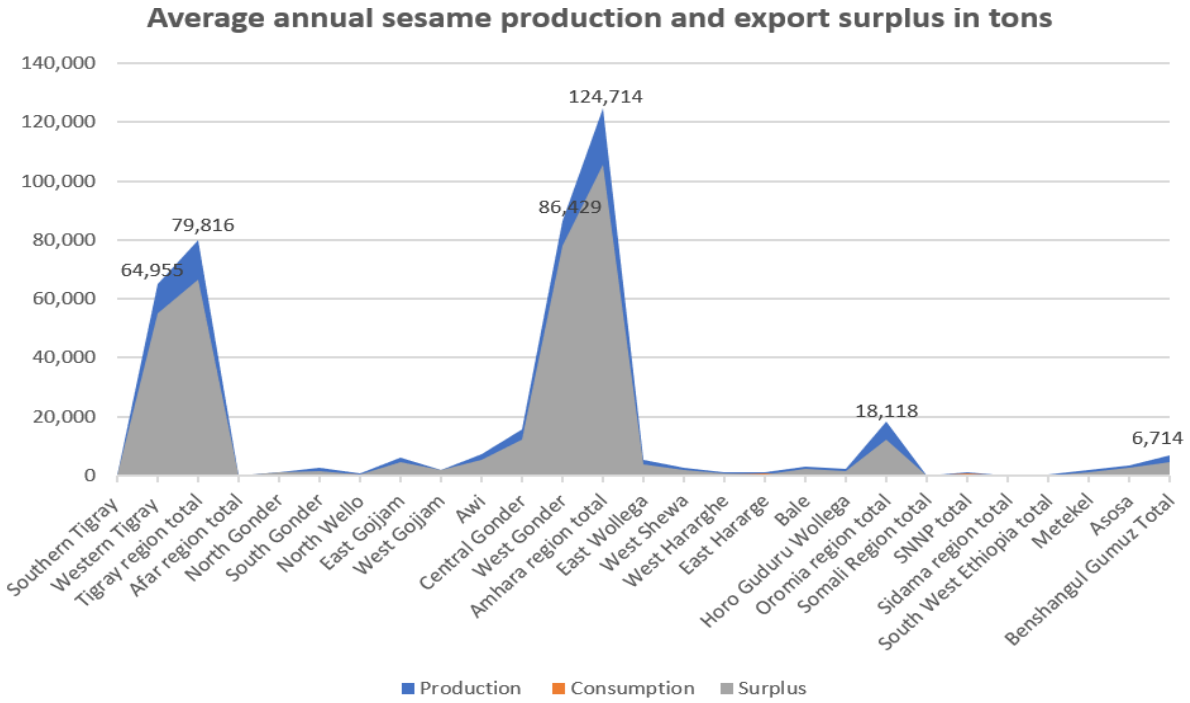
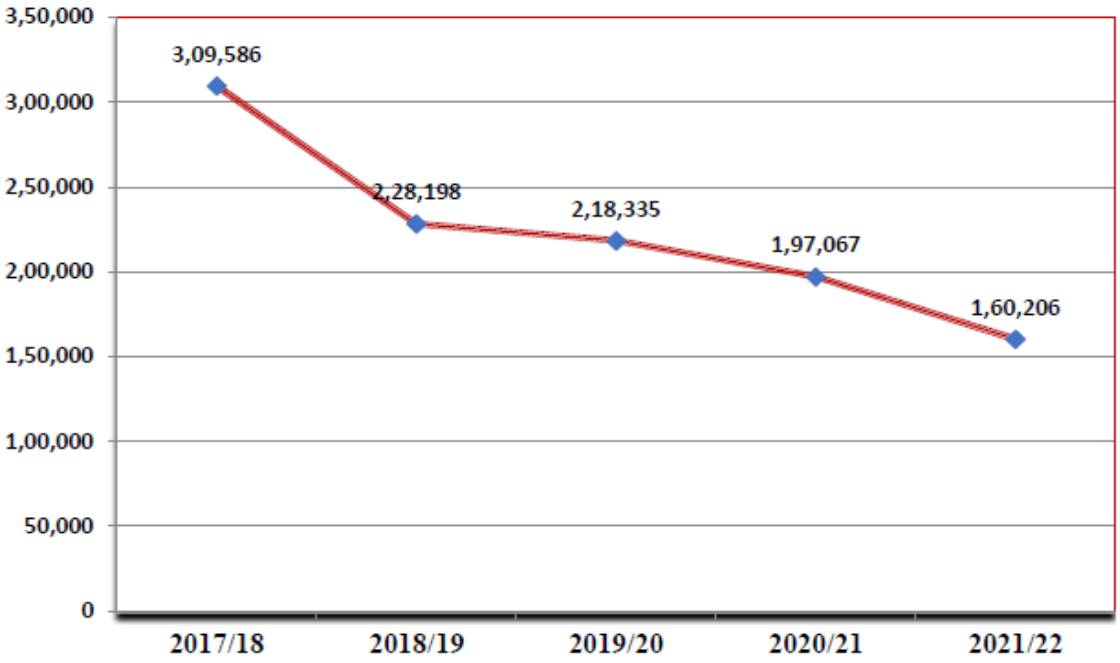


Figure 19.11: Sesame Export trend in Ethiopia from 2017/18 to 2021/2022 in Metric Tons



(Source: Ministry of Trade and Regional Integration)

19.4.1 Sesame Value Chain

Figure 19.12 shows the Sesame Value Chain

The Sesame value chain starts with supplies of inputs such as fertilisers, seeds, pesticides, and farming equipment by Ministry of Agriculture and regional and rural district agriculture bureaux.

After production and harvest, the cooperative union and the wholesaler deliver to the Ethiopian Commodity Exchange (ECX) where laboratory tests take place before the Sesame enters the international market.

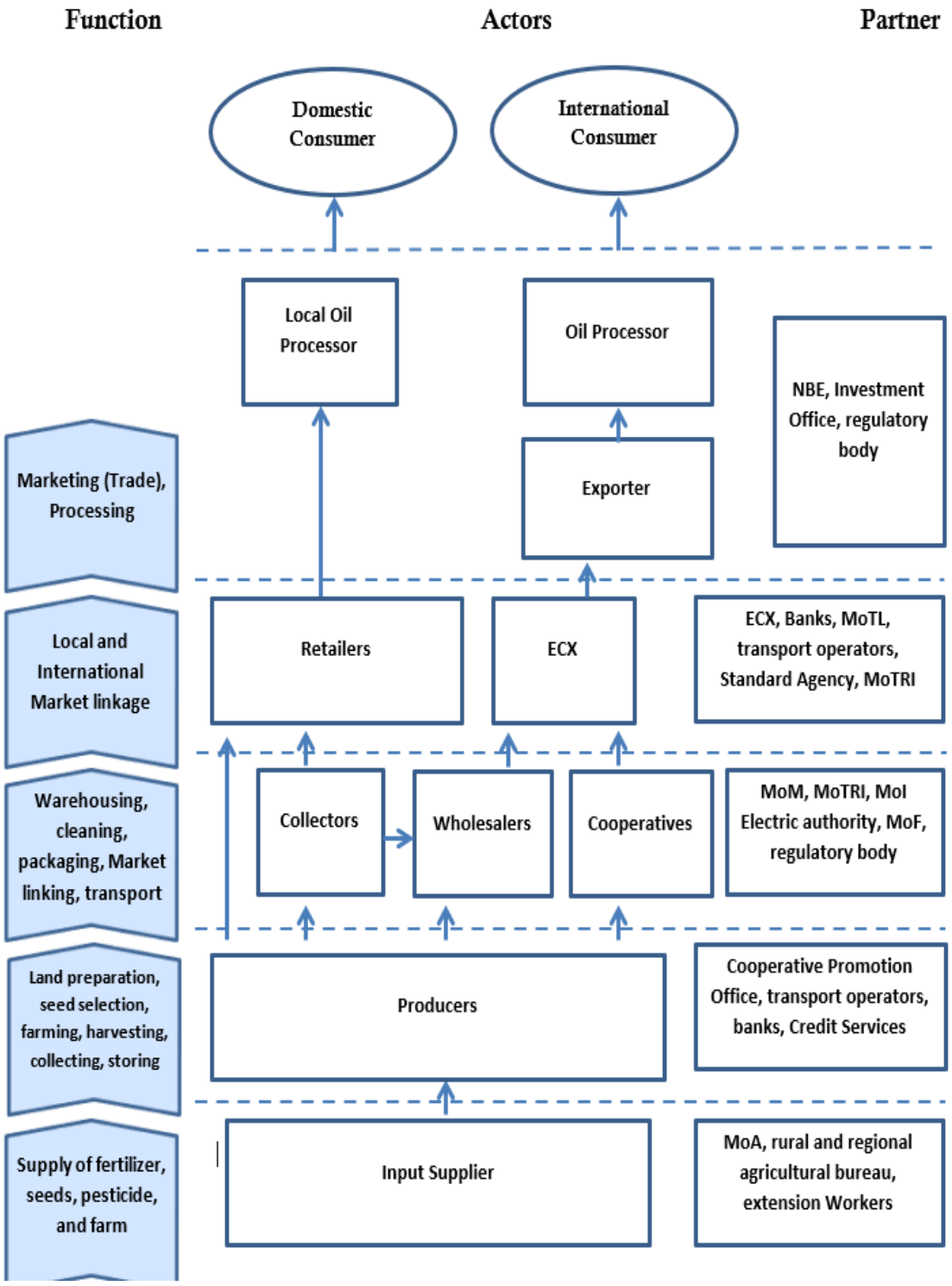
The Sesame seed that is not for export is collected for the local market and pressed so that edible oil is extracted.

The actors in sesame value chain are input suppliers, small- and large-scale producers, collectors, wholesalers, cooperative union, ECX, exporters, importers, retailers and local oil processors.

The main challenges in the sesame value chain are:

- Low productivity and quality;
- Poor marketing linkage and information;
- Price fluctuation;
- Low productivity because of erratic rainfall;
- Large number of brokers in the supply chain; and
- Uninformed or misinformed decision on stock levels resulted a wrong speculation of price.

Figure 19.12: Sesame Value Chain



19.5 Wheat

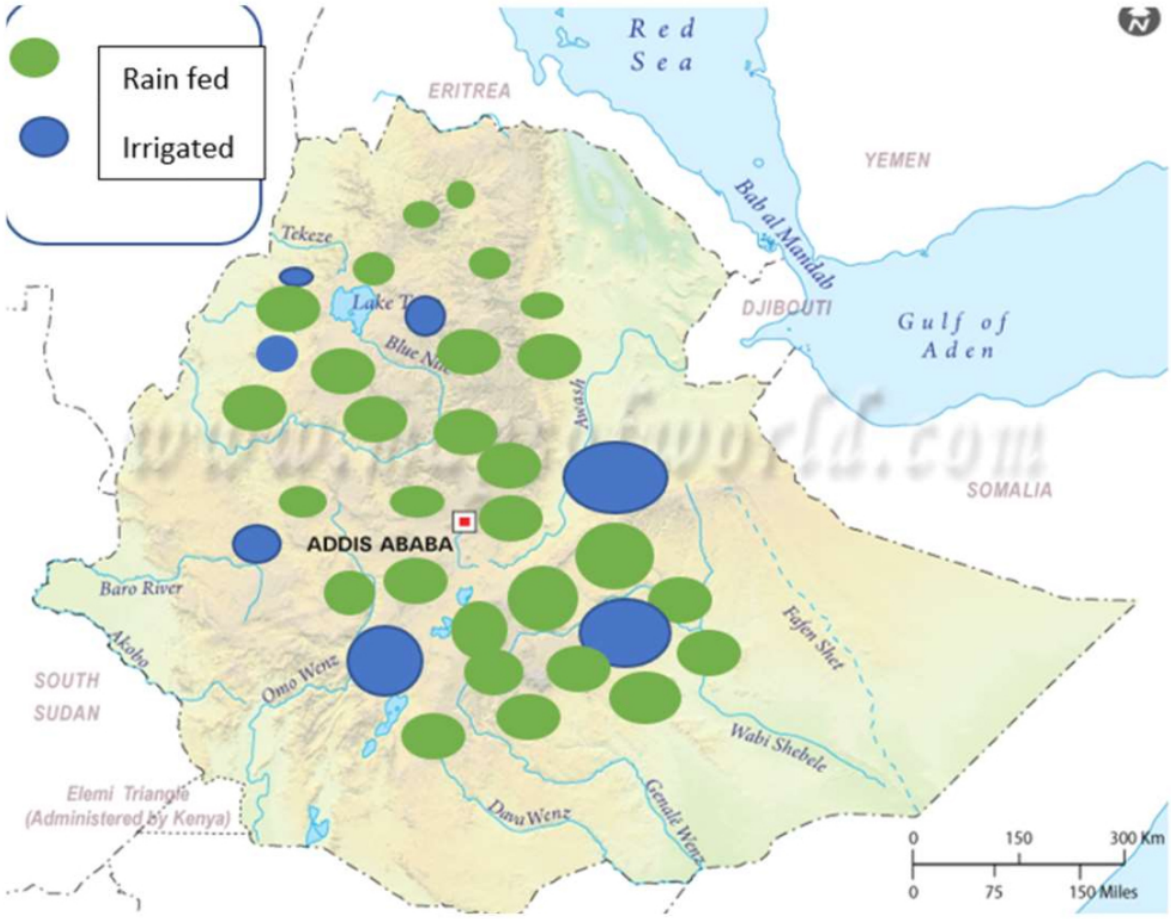
Wheat, one of the most important food security crops in Ethiopia, is cultivated on a total area of 2.1 million hectares, with 1.7 million hectares rain-fed and 0.4 million hectares irrigated. Annual total production in 2020-21 was about 5.52 million tons and about 7.5 million tons in 2021-22.

Wheat is mainly produced by smallholders with landholdings of less than one hectare. About 5 to 10 per cent of Ethiopia's wheat is produced on large-scale farms in the Arsi-Bale wheat belt.

Wheat is the third most important cereal crop in Ethiopia, after teff and maize, accounting for 17 per cent of the country's grain production. Ethiopia is the second largest wheat-producer in Africa, after South Africa.

Rain-fed wheat is grown during the main rainy season in Ethiopia between June and October mainly in the highlands of Amhara and Oromia, where about 85 per cent of Ethiopia's wheat is grown and as shown in **Figure 19.13**. Irrigated wheat is grown between November and April mainly in the lowlands and the Awash, Wabe Shebelle, and Omo Rivers.

Figure 19.13: Map showing Main Areas where Irrigated and Rain-Fed Wheat are Grown.



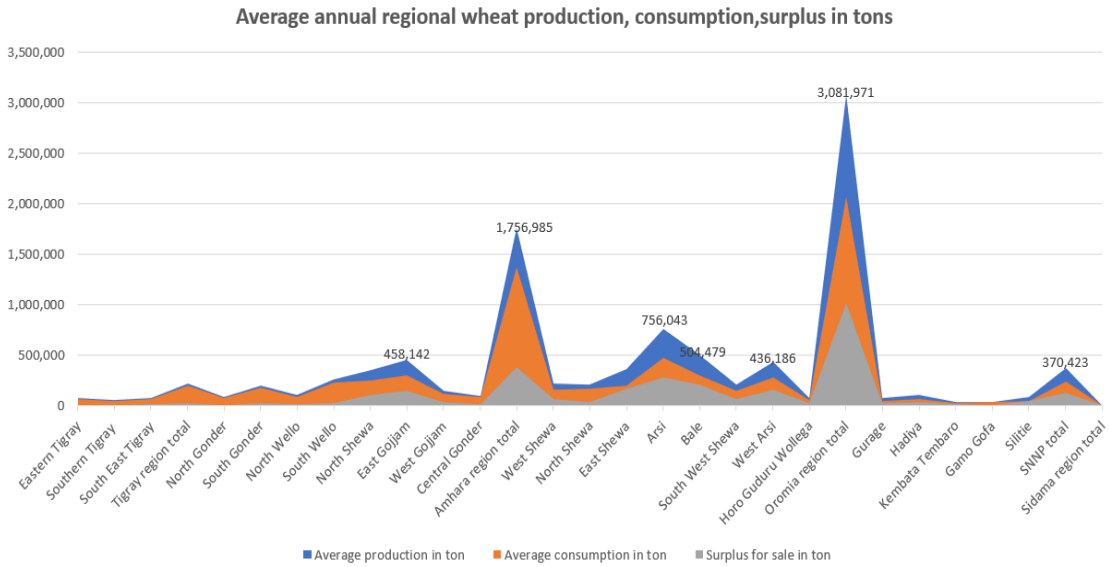
Source: Wheat Production and Breeding in Ethiopia: Retrospect and Prospects[38]

The grain produced in Ethiopia is aggregated by farmers at cooperative societies, local markets, and other designated locations. The quality of wheat is assessed through various tests, and afterwards it is packed in sacks or bags. It is then transported and stored in warehouses because Ethiopia does not have public sector silos which can be used to store wheat.

Figure 19.14 shows the average annual wheat production, consumption and surplus.

38 https://cbgg.hapres.com/htmls/CBGG_1490_Detail.html#:~:text=It%20is%20cultivated%20on%20a,2021%2F22%20%5B1%5D

Figure 19.14: Average Annual Wheat Production, Consumption and Surplus



In 2021 Ethiopia met about 70 per cent of its wheat demand through domestic production and so needed to import the remaining 30 per cent.

Once the domestic supply of wheat is known (or estimated) and total demand is forecasted, government agencies, including the Ethiopian Trading Businesses Corporation (ETBC) and the National Disaster Risk Management Commission (NDRMC), working together and often with external agencies such as the World Food Programme (WFP) will estimate the amount of wheat that needs to be imported. Recently Government determined that the only agency authorised to import wheat was the Ethiopian Trading Business Corporation (ETBC).

Wheat consumption in Ethiopia has increased at a faster pace than production has, as shown in **Figure 19.16**, because of the population increase, change in food habits and rapid urbanisation, which has caused a gap between local wheat production and demand, which means that the country now needs to import significant amounts of wheat to meet this demand.

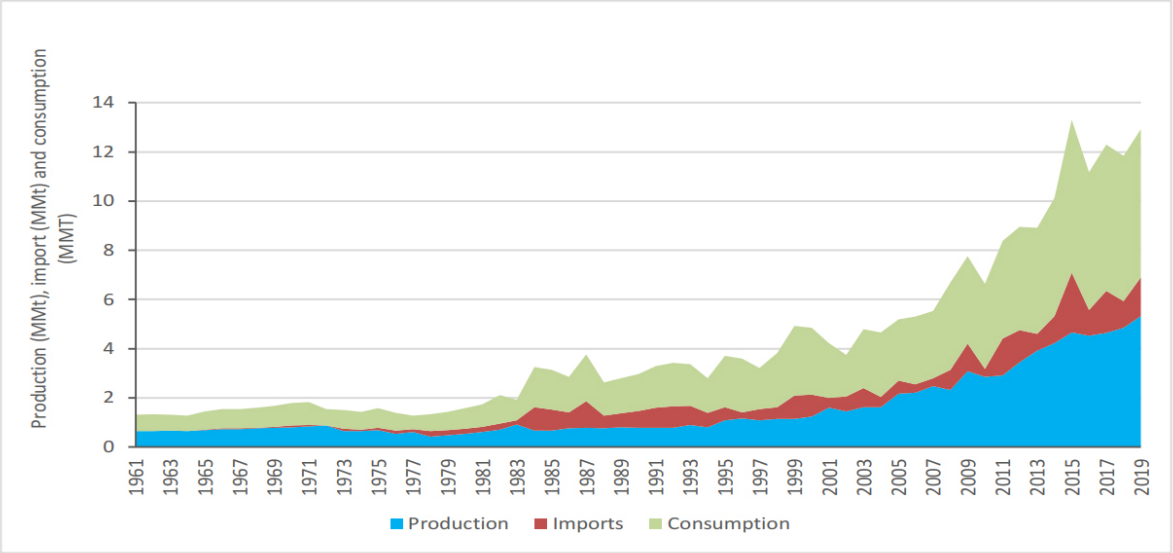
Wheat was the most imported product in Ethiopia in 2021; the third most imported product in 2020 after mineral fuels and fertilisers; and the third most imported product in 2019 after mineral fuels and iron and steel as shown in **Figure 19.17**.

The volumes of grain that are imported vary considerably year-on-year as they depend on domestic crop productivity, natural disasters, civil unrest and other emergencies which lead to reduced production. Wheat imports doubled in 2016 and 2021 compared to the average volumes of other years and stimulated by several factors, including:

- Removal of all the related taxes on imported wheat by the Ethiopian government in 2021, which caused informal wheat imports to become legal (which were not previously counted).
- Civil unrest from November 2020 to November 2022 in the northern part of Ethiopia (Tigray, Amhara and Afar regions), which affected wheat production in the concerned regions and resulted in several million Internally Displaced People (IDP) requiring food aid. Farm tools were destroyed, oxen used to plough farmlands were killed and it was very hard to obtain seed and fertiliser.

- Future price uncertainty because of rising wheat prices (39 per cent increase between 2020 and 2021) and foreign currency shortages (ETB depreciation), which stimulated storage policies.

Figure 19.15: Ethiopia's Wheat Production and Consumption 1961 to 2019



Source: Wheat Production and Breeding in Ethiopia: Retrospect and Prospects

Figure 19.16: Ethiopian Wheat imports evolution in million tons

Source: UN Comtrade

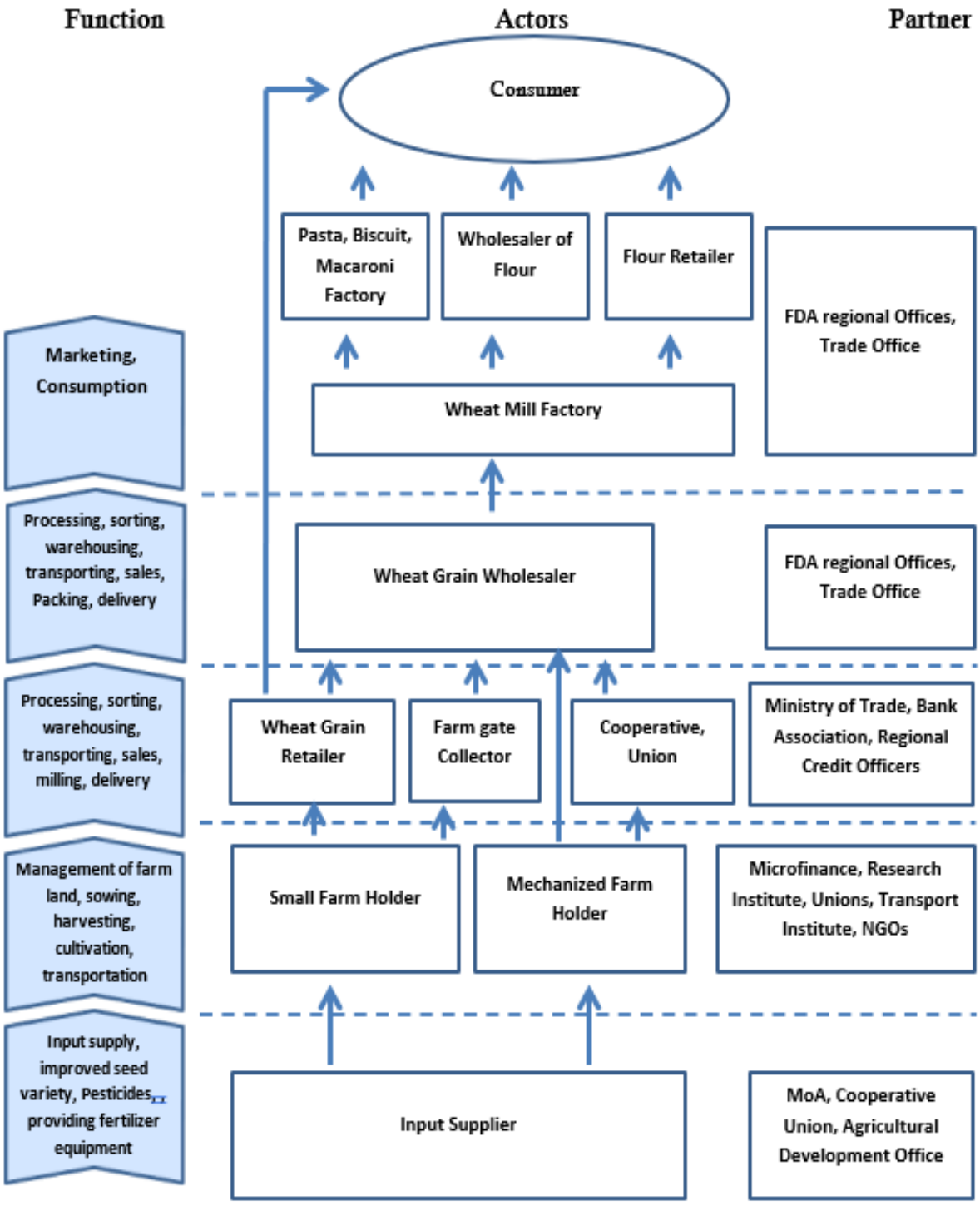
19.5.1 Wheat Value Chain

Figure 19.14 shows the wheat value chain. The main actors in the wheat value chain are smallholder farmers who tend to sell large quantities of their produce during and soon after the main harvest season.

The imported grain arrives mainly through the Port of Djibouti, both at the SDTV Terminal and the Doraleh Multi-purpose Terminal (operated by DMP), but also, to a much lesser extent, and mainly wheat imported through WFP, through the Port of Berbera in Somaliland (operated by DP World). Vessels are unloaded with either suction machines or mechanical grabbers, and the bulk grain is then stored in the port, either in a warehouse (as is the case for SDTV) or in a horizontal silo (as is the case for DMP) or, in the case of WFP, can be transported directly to the WFP silos. Officials inspect the imported grain to verify the quantity, quality, and compliance with regulatory requirements. This

involves examining shipping documents, conducting physical inspections, and collecting samples for laboratory analysis if necessary.

Figure 19.17: Wheat Value Chain



The grain is bagged in 50kg bags at the port facilities before being transported to Ethiopia. The bags are loaded onto the trucks from the bagging area and the trucks then proceed to Ethiopia, usually directly to the warehouse the wheat has been assigned to.

Some wheat off-loaded at DMP is transported by rail. The Ethio-Djibouti Railway railhead in Doraleh is about one kilometre from the port and there is no system (such as a conveyor belt) linking the warehouses or horizontal silos to the Doraleh railhead, so all grain exported by rail is bagged at the quayside, loaded onto a truck, driven to the rail head, and loaded into wagons.

All grain, whether it is transported by road or by rail, is transported bagged and all bags need to be manually loaded, which is time-consuming if not expensive. Once loaded onto a truck the driver and the truck need to navigate roads which are, in sections at least, in very poor condition. The most extreme is the road section between Dikhil and Galafi in Djibouti, where the road has been completely destroyed and trucks carve out new routes. Other challenges to overcome include the number of check points on the road and the border crossing itself.

For cargo loaded onto rail wagons the challenges start with the loading and despatch process. Then the train needs to stop at the border for a physical inspection.

When the train or the truck arrives at its destination there can be long delays incurred at off-loading as the bags need to, again, be manually offloaded and stacked into warehouses.

The distribution of wheat from warehouses to final destinations (retailers, flour mills, food processing companies or refugee camps, among others) is typically carried out by multiple entities, such as wholesalers or NGOs. At the final destinations, the wheat or wheat-based products are made available to end costumers.

There are signs that the wheat sector in Ethiopia is undergoing a significant transformation, and that production is increasing. More and more land is being put under wheat cultivation each year; overall productivity is increasing; new varieties of wheat that are tolerant to heat, drought, salinity; acidity, pre-harvest sprouting, nutrient and water use efficient are being planted; soil acidity is being reduced with the application of lime; and integrated crop management techniques are all being used to increase domestic production. In ECY 2014 (September 2021 to September 2022 in the Gregorian Calendar), wheat production in Ethiopia was 5.66 million tons, harvested from 1.95 million hectares, which represented a 2 per cent increase over the ECY 2013 (5.55 million tons), which in turn represented an 11 per cent increase over the ECY 2012 (4.99 million tons). Wheat production is expected to reach a record level in ECY 2015 (September 2022 to September 2023 in the Gregorian Calendar).

A Federal Government target is for Ethiopia to be self-sufficient in wheat, and to be a net exporter of wheat by 2025-26. To achieve this target, the Federal government has introduced the National Wheat Flagship Programme (NWFP). The objective of the NWFP is to produce an additional 4.2 million tons of irrigated wheat at an average productivity of 4.2 tons/ha. These objectives are supported by the Ethiopia Wheat Value Chain Development Project (EWVCDP) financed by the African Development Bank. The Project is under implementation in four regions of Ethiopia, these being the Amhara, Oromia, Somali, and Afar regions.

19.6 Perishable Products

Ethiopia has the potential to produce and export perishable products such as fruit, vegetables, flowers and meat. But, despite this potential, the horticulture sector has been underdeveloped, compared to food grains and floriculture, partly because of the lack of cold chain logistics infrastructure for sea freight. To tap into this potential, Ethiopia has prioritised horticulture as a key sector for agricultural production and future export growth.

The goal is to enhance horticulture development, contributing to the country's economic and social progress but, currently, a cost-effective cold chain logistic solution is not in place. While successful trial shipments have been made using rail-sea freight combination, airfreight remains the primary mode of accessing global markets, limiting the range of products suitable for export.[39]

Work being done on export by surface transport of perishable products and development of the cool chain is carried out primarily under the National Cool Logistics Network, which is a joint project between the governments of Ethiopia, Djibouti and the Netherlands and involves local businesses and smallholder farmers. The National Cool Chain Logistics Network categorises export cargo flows by primary and secondary flows. The primary flow is the export of fresh produce, which is the priority and catalyst project for the National Cold Chain Logistics Network. Secondary export flows include chilled and frozen meat, as well as refrigerated flowers.

In terms of imports, the following cargo flows are included: perishable medicines, frozen foods, fresh produce, and dry goods.

19.6.1 Export - Fruit and Vegetables

Ethiopia possesses significant potential for horticultural production owing to favourable soil and water conditions, as well as abundant land. The country's main fruit crops include avocados, mangos, bananas, citrus fruits, pineapples, papaya, and strawberries. Fruit production is mainly concentrated in the Rift Valley and southern part of the country. Major vegetable crops grown in Ethiopia include potatoes, tomatoes, onions, cabbage, green beans, carrots, green peppers, and peas.

Currently, Ethiopian exports of fruits and vegetables are limited, with most horticultural crops being exported to neighbouring countries such as Djibouti, Sudan, and Somalia. The lack of a competitive cold chain logistic solution for sea freight exports and high transportation costs contribute to the premature state of overseas exports of fruit and vegetable crops. It is widely believed, especially among horticultural producers and exporters, that addressing this logistical bottleneck is crucial for the growth of the fruit and vegetable industry to take place in Ethiopia.

The horticulture sector is a key focus of Ethiopia's previous consecutive five-year plans, and the more recent 10-year perspective plan (2021-2031). These plans recognise horticulture as a major driver of economic development in Ethiopia, with the aim of increasing income levels, creating employment opportunities, and promoting stability in the farming community. Enhancing foreign currency earnings from the horticulture sector is also a priority, as it will contribute to the country's overall economic and social development.

In terms of horticulture exports, Ethiopia has the opportunity to accommodate overseas markets, particularly in Europe and the Middle East, where there is increasing interest in Ethiopian fruits and vegetables. Ethiopia can take advantage of these export markets during the off-season of other supply countries for specific fruit and vegetable crops. For example, Spain, Chile, and Colombia are

[39] Focus of the Ethiopian government on horticulture | Nieuwsbericht | Agroberichten Buitenlan

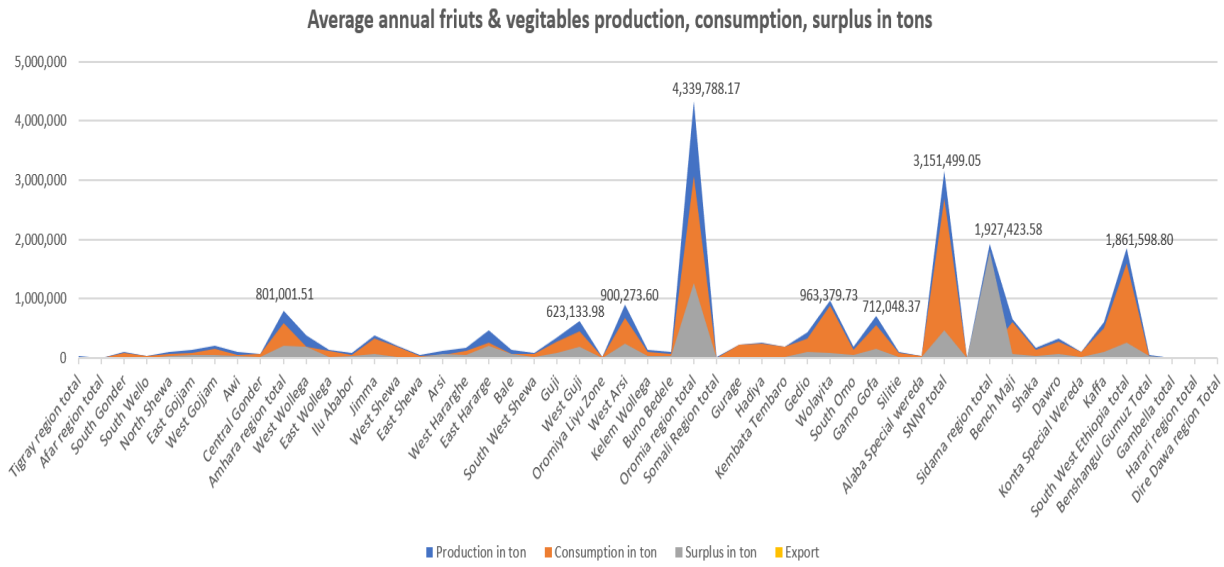
major avocado suppliers to the European market but experience a drop in avocado exports during Ethiopia's prime avocado season from May to October. Ethiopia's geographic proximity provides the opportunity to fill the supply gap for export destinations in Europe and the Middle East during the off-season of other exporting countries.

Ethiopia exports fresh fruits and vegetables, comprising bananas, mangos, avocados, citrus, pineapples, papayas, and strawberries, mainly to the European Union, the Gulf states and the East African region, with the main production areas being East Hararghe, East Shewa, West Shewa, Arsi, Gamo Goffa, Dire Dawa, Harari, Tigray, and Amhara regions and mainly by smallholder farmers in these regions.

Fresh fruits' contribution to Ethiopia's export earnings is fairly small but it is growing quickly. National Bank of Ethiopia data indicates that Ethiopia exported 191.18 million kg of fruit and vegetables in 2019-20; 221.70 million kg in 2020-21; and 222.65 million kg in 2021-22 respectively. Although, in general, imports are growing faster than exports, Ethiopia is a net exporter of fresh fruits.

The export of perishable commodities faces main logistics challenges, and especially in maintaining a cool chain, which requires more refrigerated warehouses, refrigerated trucks and railway wagons and control systems to ensure the cold chain is not broken.

Figure 19.18 Average annual fruits and vegetables production distribution and surplus



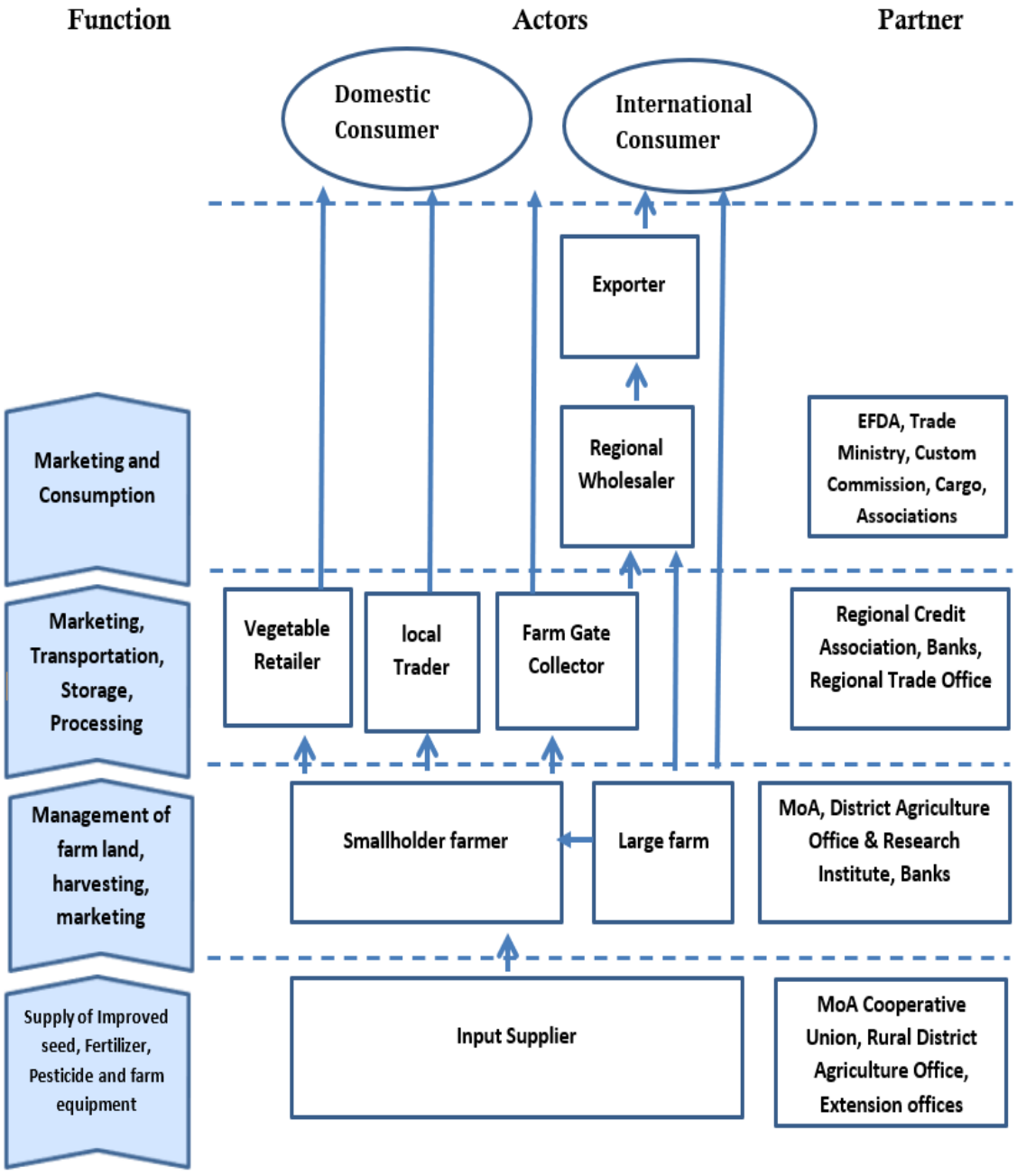
The main functions of the actors are supply of inputs, managing farming land, harvesting, cultivating storage, marketing, transporting, processing, and consumption.

The partners involved in the vegetable value chain include agricultural extension workers. Regional agricultural offices, cooperatives, Unions, credit association, banks, customs, Food and Drug Authority and Ministry of trade and Regional Integration.

19.6.2 Vegetable Value Chain

Figure 19:19 gives the vegetable value chain.

Figure 19.19: Vegetable Value Chain



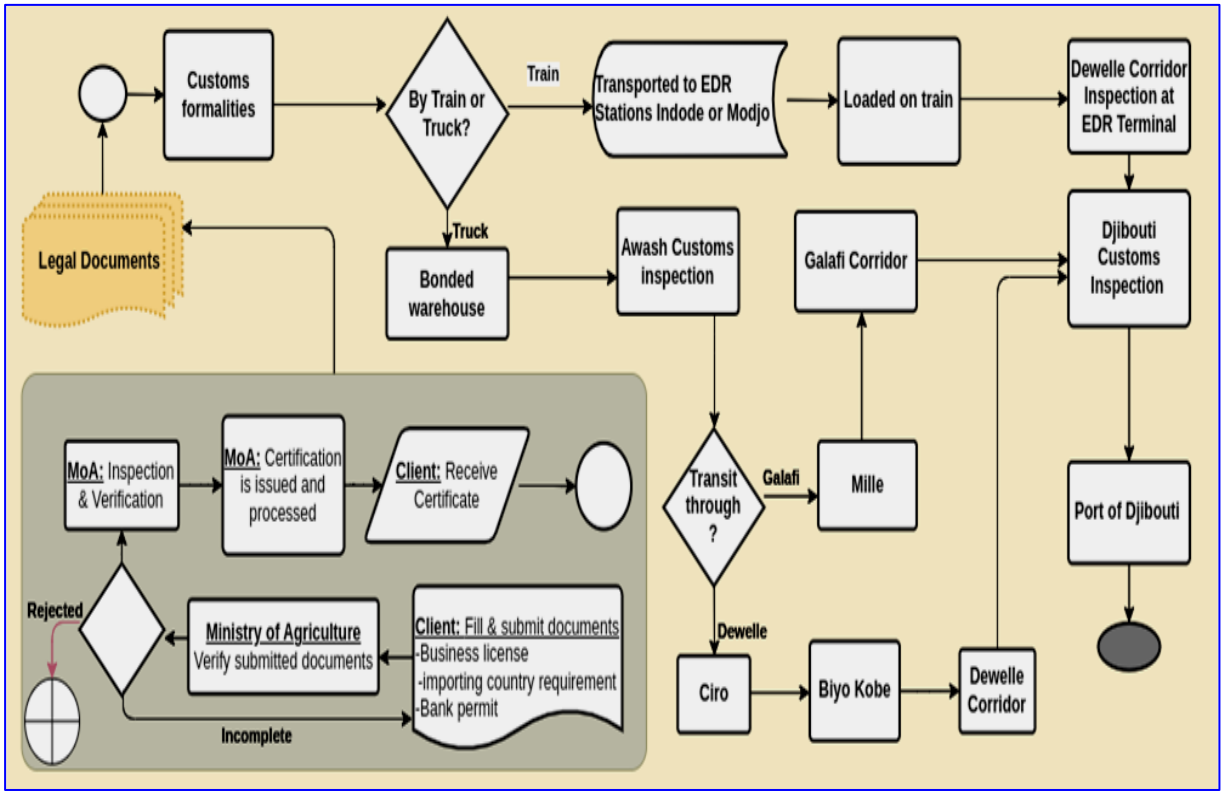
19.6.3 Business Process diagram for Export of Vegetables.

Figure 19.20 shows the business process of exporting fruit and vegetables from Ethiopia through the port of Djibouti.

Although export of fruits and vegetables pass through the two export core processes of documentation and physical transport, it has its unique features. Relatively fewer number of

documents than those for other major export agricultural commodities is required, Ministry of Agriculture is the focal regulator, and customs is the gateway to physical transport process. Here overall lack of cold chain associated with vehicles, warehouses, and related facilities, lack of consolidation centres, and lack of synchronized temperature control technology are often cited as main bottlenecks. The following diagram depicts the details fruits and vegetable export.

Figure 19.20: BPA Diagrams for Export of Fruit and Vegetables from Ethiopia



19.6.4 Export - Flowers

Ethiopia is currently the fifth-largest producer and exporter of flowers in the world. The sector has been growing at a steady pace, with export revenues reaching USD400 million in 2019. However, the flower sector in Ethiopia faces several challenges that could impede its future growth and market potential.

One of the main challenges is the low diversity and volume of exports. Ethiopia's flower exports are heavily reliant on a few key markets, including the Netherlands, the United States, and Japan. This puts the sector at risk of market fluctuations and changes in demand from these countries.

Another challenge is the lack of investment in infrastructure and technology. Ethiopia's flower farms are mostly small-scale and scattered, with limited access to modern equipment and transportation systems. This hinders the sector's ability to scale up production and reach new markets.

A positive outlook for the flower sector in Ethiopia is expected for the years 2027 and 2032, with increased export volumes projected[40].

Currently all flowers are exported from Ethiopia by air freight. Given its flourishing floriculture industry with high export volumes and the relatively close distance of production regions to dry ports, Ethiopia has the potential to transition its flower transportation modes from airfreight to sea freight. This transition would allow the industry to benefit from the cost advantages that sea freight transportation provides. To achieve this, it is important to meet the right logistics performance criteria. In anticipation of the development of cold chain capacity, such as Cool Port Addis, and considering that railway transport is equipped with cold chain and reefer container facilities, it is feasible to include refrigerated flower exports as a secondary export cargo flow.

19.6.5 Export - Meat

The livestock sector plays a significant role in Ethiopia's economy, contributing to its growth and development. However, the sector faces numerous challenges that hinder its commercialisation and growth. In response to this, the Ethiopian government in collaboration with International Livestock Research Institute (ILRI) has developed the Livestock Master Plan (LMP), a five-year investment plan geared towards prioritising livestock production systems and value chains. The LMP aims to improve the sector, focusing on the livelihoods of smallholder farmers, poverty reduction, increased food security, and inclusive economic growth.

Currently, Ethiopia has twelve large meat producing companies, with most abattoirs located in the Modjo region. A significant portion of meat production is targeted for export markets, particularly in the Middle East. However, chilled meat products are the primary products exported, transported via airfreight. The sector envisions a transition from chilled to frozen meat products in the future, which will require the establishment of cold store facilities and the development of experienced handling and transport capacity[41] Cool Port Addis, located in Mojo logistics hub, can serve as a consolidation centre for arranging rail transport and is likely to see an increase in aggregate export volume via sea freight. This shift towards frozen meat products will not only increase the sector's competitiveness but also provide opportunities for smallholder farmers, increase food security, and contribute to the country's economic growth[42].

19.6.6 Import - Medicine

With an estimated population of over 120 million, Ethiopia has a significant rural and underprivileged population that faces challenges accessing basic necessities such as food,

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[40] Study Conducted to Assess the Opportunity of Banks in Financing in Horticulture Sub-Sector in Ethiopia (Study Conducted to Assess the Opportunity of Banks in Financing in Horticulture Sub-Sector in Ethiopia by Moroda Kenea :: SSRN)

Flower production prospects and sustainability challenges in Ethiopia: A systematic review (Frontiers | Flower production prospects and sustainability challenges in Ethiopia: A systematic review (frontiersin.org))

[41] Ethiopia livestock master plan a contribution to the Growth and Transformation Plan II (2015-2020) (https://cgspace.cgiar.org/bitstream/handle/10568/68037/lmp_roadmaps.pdf)

[42] GLOBAL FOOD SECURITY STRATEGY ETHIOPIA COUNTRY PLAN 2019 - 2023 (2017-2020.usaid.gov/sites/default/files/documents/1867/GFSS-Country-Plan-Ethiopia-FINAL-April-2019.pdf)

healthcare, housing, and sanitation. The government is committed to improving the healthcare system and aligning with the United Nations' Sustainable Development Goals (SDGs). Public health sector investments have led to improved health outcomes, but communicable diseases like malaria and HIV remain a challenge. The Ministry of Health (MOH) is taking steps to decentralise management to regional health bureaus, while the Ethiopian Pharmaceutical Fund and Supply Agency (EPFSA) and Ethiopian Food and Drug Administration (EFDA) play crucial roles. EPFSA is in charge of purchasing and supply chain management of pharmaceuticals, medical supplies, and equipment, while EFDA regulates and oversees the registration, importation, and quality of medicines, supplies, and equipment.

Ethiopia relies heavily on imports to meet its domestic healthcare demand, with China and India being the major supplying countries. Together, they account for the majority of medicine, supplies, and equipment imports at the national level. The remaining imports are mainly sourced from European countries such as Germany, France, and the United Kingdom (International Trade Administration, ITA).

Ethiopia imports medicine, including perishable and frozen items, through airfreight. While this mode of transportation is expensive, it is currently used because it allows for well-managed temperature control, and there is no alternative cool chain system available yet.

19.6.7 Import - Fruit and Vegetables

In addition to local horticultural production, Ethiopia also imports fresh produce, particularly fruits, to meet domestic demand. Import volumes of fresh fruits and vegetables have been fluctuating in recent years, with key import crops including apples, grapes, dates, and onions.

As the Ethiopian economy continues to develop, the demand for fresh fruits and vegetables is expected to increase, especially for crops that cannot be cultivated domestically or have low production capacity and self-sufficiency rates. Cold chain facilities are required to serve as a storage and deconsolidation hub for the distribution of imported fresh fruits and vegetables within the country. Additionally, the inward flow of cooled produce ensures the availability of reefer containers for cooled exports, helping to balance the import-export imbalance.

It is important to note that as local production capacity in Ethiopia increases, the import quantity for some products may decline.

19.6.8 Import - Frozen Foods

Frozen foods and frozen consumable products are imported to meet the domestic demand in Ethiopia, particularly in the hotel and retail sectors in the Addis Ababa region. Examples of these consumable products include frozen fruits, vegetables, fries, fish, and ice cream. Currently, a significant portion of these imported consumables are stored in small-scale cold storage facilities of hotels and supermarkets, which are inefficient and require high maintenance. However, the import volume of frozen consumables is expected to grow significantly in the future, as a result of rising income levels and the development of the hotel and retail sectors in Ethiopia.

19.7 Teff

Teff is a dietary staple food crop and the most important cereal in Ethiopia in terms of agricultural land use and total value. It is adapted to a wide range of environments and is presently cultivated under diverse agroclimatic conditions, but mainly in the central and northwestern highlands. The

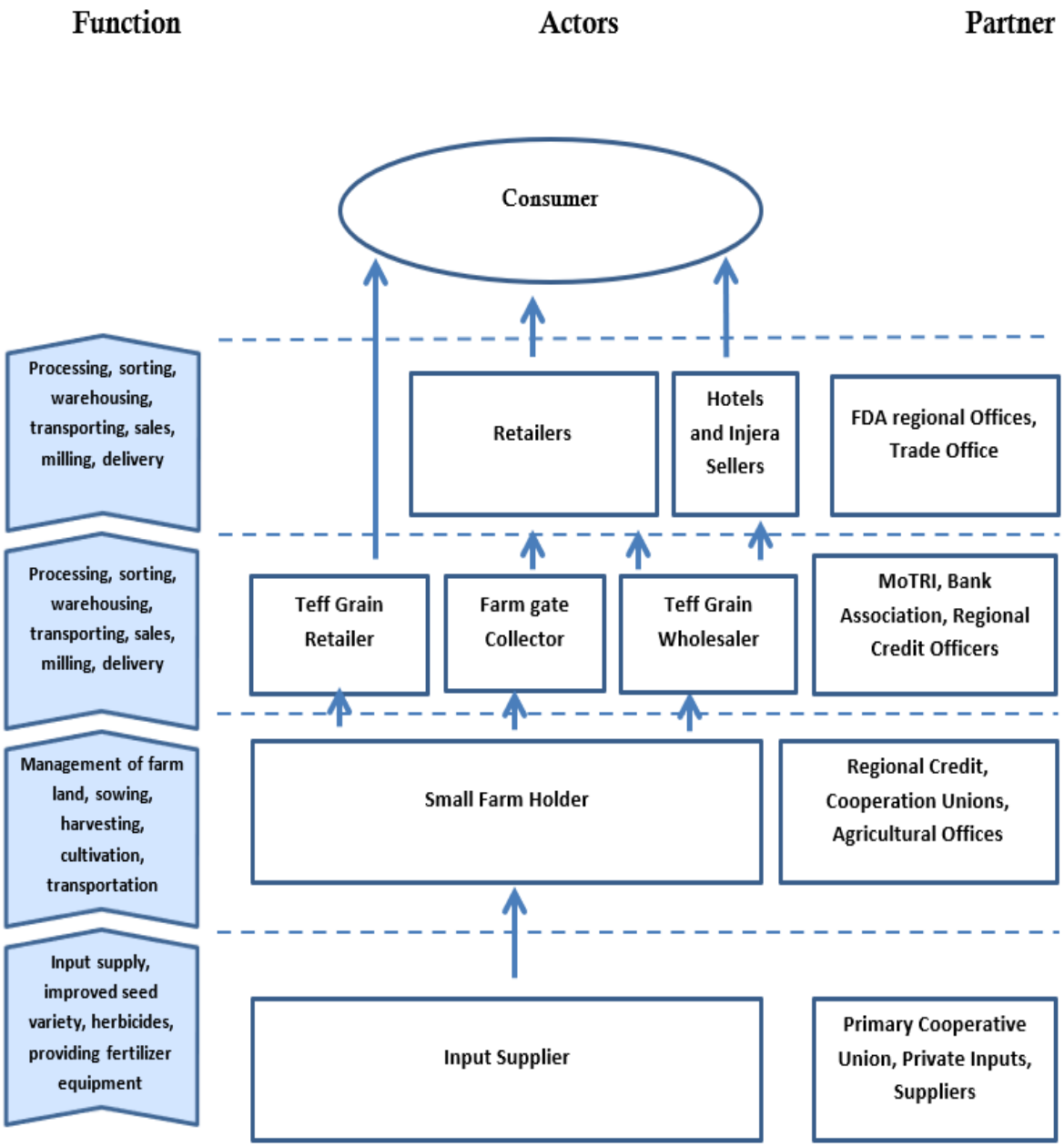
crop is critical for incomes and food and nutrition security and is grown by 6.5 million smallholder farmers who consume 70 to 80 per cent of their production and market the surplus to consumers.

Teff value chains are long and complex. The main actors in the teff value chain involve input suppliers, producers (small holder farmers), retailers, wholesalers, millers and injera processors.

19.7.1 Teff Value Chain

Figure 19.21 shows the Teff value chain from input supplier to consumer.

Figure 19. 21: Teff Value Chain

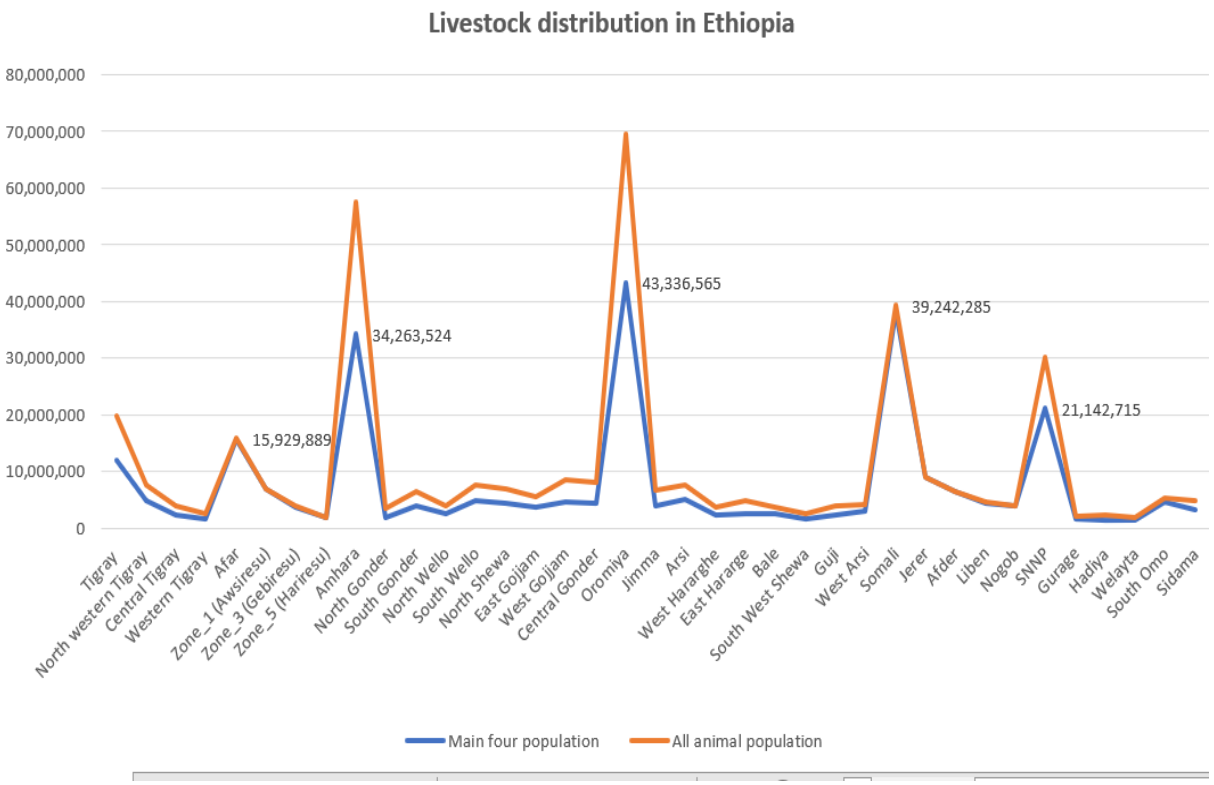


19.8 Livestock

Ethiopia has the largest livestock population of any African Country. According to Ethiopia's Central Statistical Agency (CSA, 2021) there are 70 million head of cattle, 42.9 million sheep, 52 million goats, 2.15 million horses, 10.8 million donkeys, 0.38 million mules, 8.1 million camels, 6.99 million beehives, and about 57 million chickens.

Livestock is a major source of animal protein; used for power for crop cultivation; as a means of transportation; as an export commodity; provides manure for farmland and household energy; provides food security in times of crop failure; and acts as a means of wealth accumulation.

Figure 19.22: Livestock Distribution in Ethiopia



The sector contributed up to 40 per cent of agricultural GDP, nearly 20 per cent of total GDP, and 20 per cent of national foreign exchange earnings in 2017 (World Bank, 2017). The export of live animals from Ethiopia plays a significant role in the country's economy, contributing to foreign exchange earnings and providing employment opportunities.

Ethiopia exports a wide variety of live animals, including cattle, sheep, goats, camels, horses, poultry, and bees. Cattle are one of the most commonly exported animals, with breeds such as Boran, Arsi, and Horro being popular choices. Sheep and goats are also exported in large numbers, with breeds like Afar and Somali being favoured for their adaptability to harsh environments.

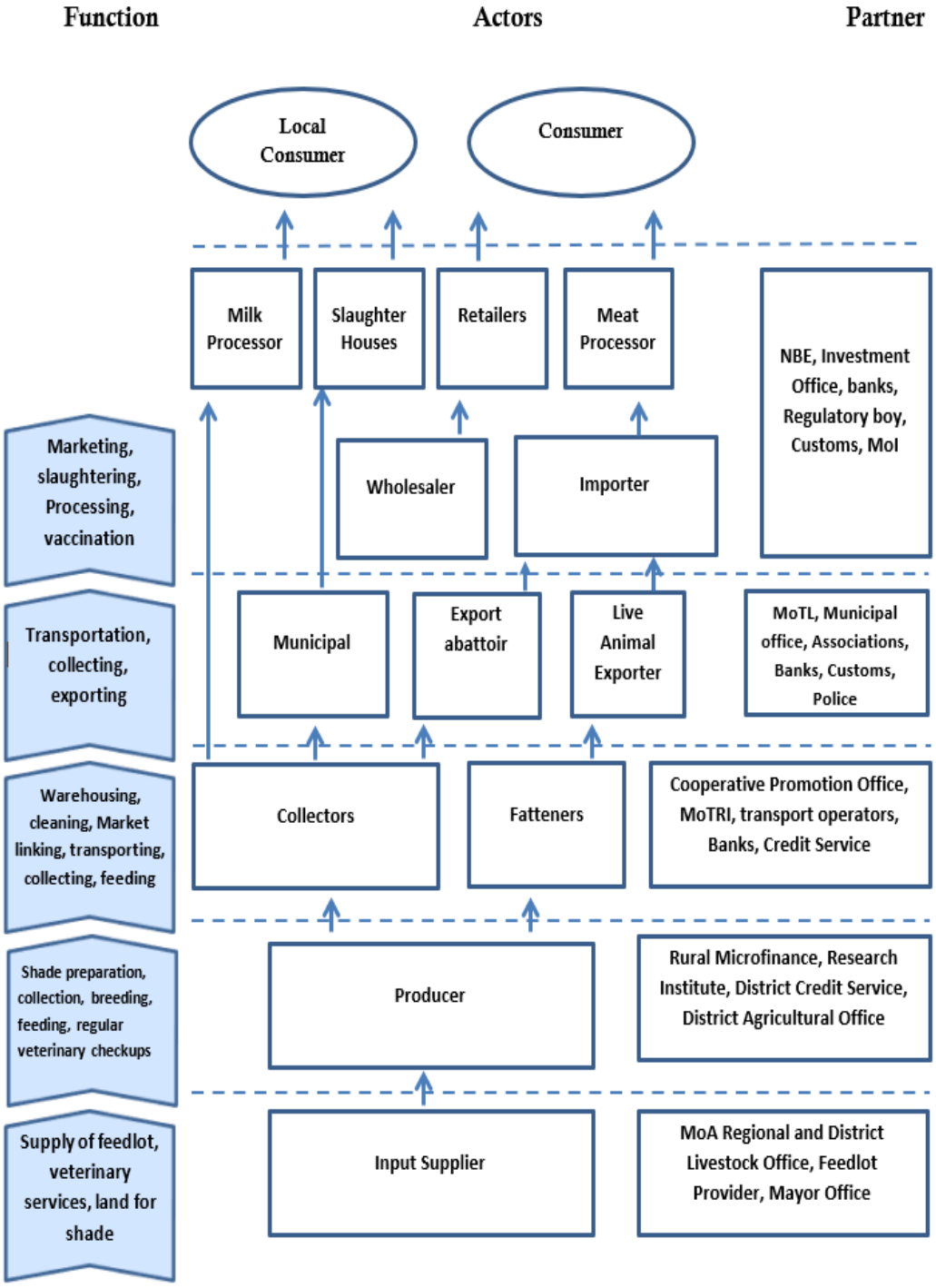
Ethiopia exports live animals to various countries around the world. The Middle East, particularly Saudi Arabia, Yemen, and the United Arab Emirates, is a major market for Ethiopian livestock. These countries have a high demand for meat and rely on imports to meet their domestic needs. Other destination markets for Ethiopian live animals include Qatar, Oman, Vietnam, Hong Kong, Nigeria, and the neighbouring Sudan, Djibouti, Somalia, and Kenya.

The total volume of meat production in the country reached 1.9 million metric tons in 2019/2020, according to CSA data. Cattle are the primary source of meat in Ethiopia although poultry meat production has seen substantial growth, with an annual output of around 70 thousand metric tons.

According to data from the Ethiopian Meat and Dairy Industry Development Institute (EMDIDI), Ethiopia earned approximately USD93 million from meat exports in the fiscal year 2019/2020. In 2018/2019 fiscal year, Ethiopia earned approximately USD360 million from live animal exports.

19.8.1 Livestock Value Chain

Figure 19.23: Livestock Value Chain

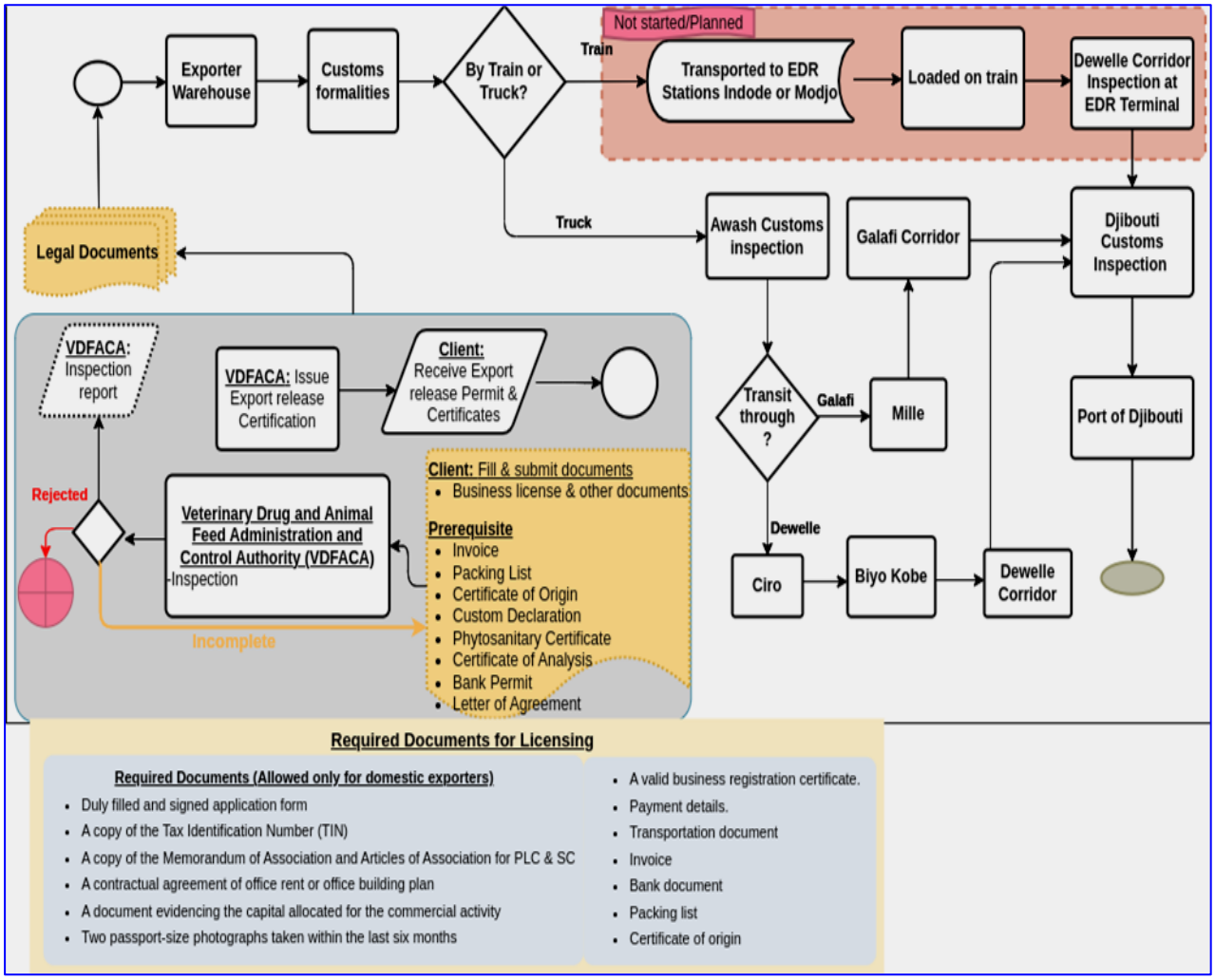


19.8.2 Business Process for the Export of Live Animals

Figure 19.24 shows the

Business Process for the export of live animals from Ethiopia.

Figure 19.24: BPA Diagrams for export of live animals from Ethiopia



19.9 Fertiliser

In the past three years from 2020 to 2022, Ethiopia has distributed on average 1.4 million tons of fertiliser across Oromia (658,000 tons), Amhara (615,000 million tons), and (the previous) SNNP (110 million tons) regions. The country has distributed an annual average of 1.49 million tons of fertiliser in the three years. This is shown in **Figure 19.25** and **Figure 19.26**.

An Agricultural sample survey conducted by Central Statistical Authority (CSA, 2021) revealed that 36.58 per cent of the framers sampled claimed that they did not buy chemical fertiliser whereas the remaining portion has used it. Those who purchased chemical fertiliser got it from government organisations (22.35 per cent), private organisations (1.42 per cent), Merchants (32.83 per cent) and 0.5 per cent from other sources. From this one can understand that government and unions are the dominant suppliers of chemical fertilisers in Ethiopia (See **Table 19.2**).

Figure 19.25: Annual distribution of Fertiliser in 2020, 2021 and 2022

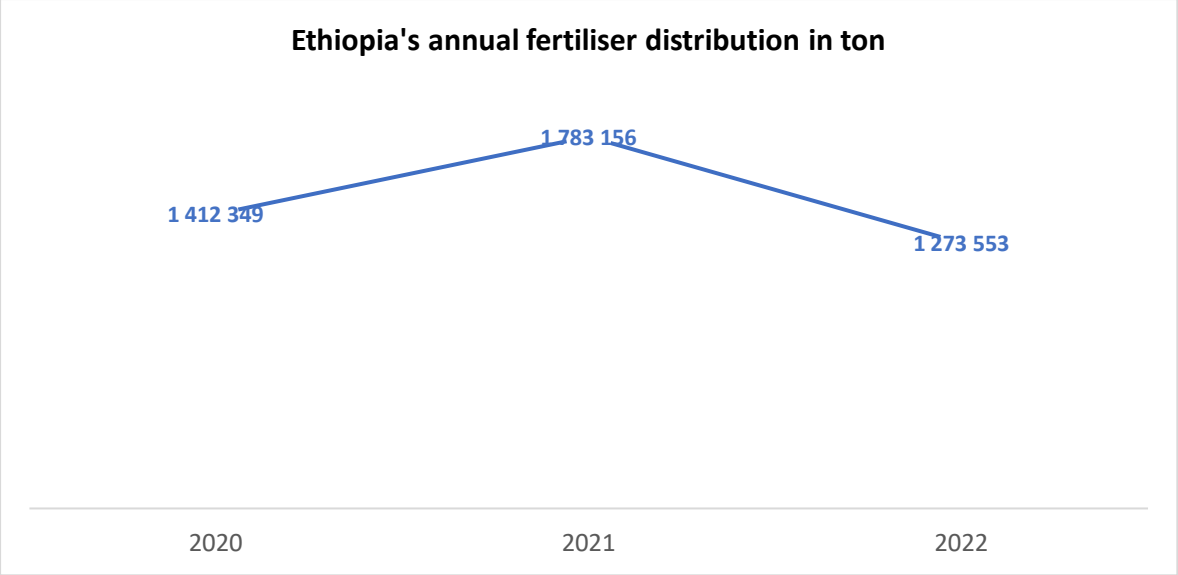


Figure 19.26: Annual distribution of Fertiliser in 2020, 2021 and 2022

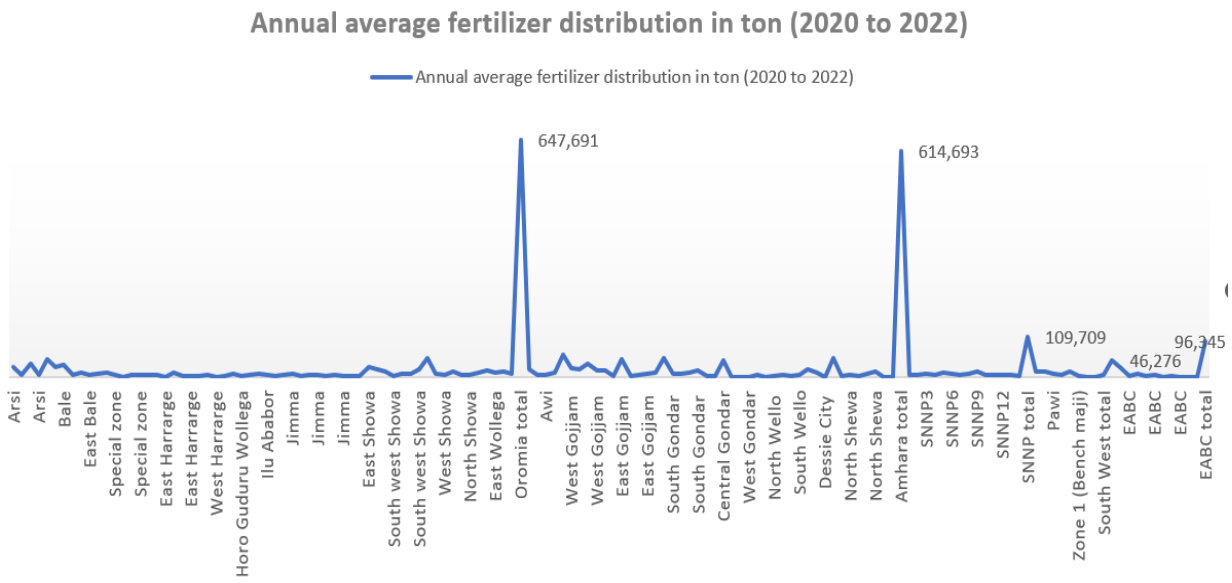


Table 19.2: Sources of Chemical Fertiliser in Ethiopia

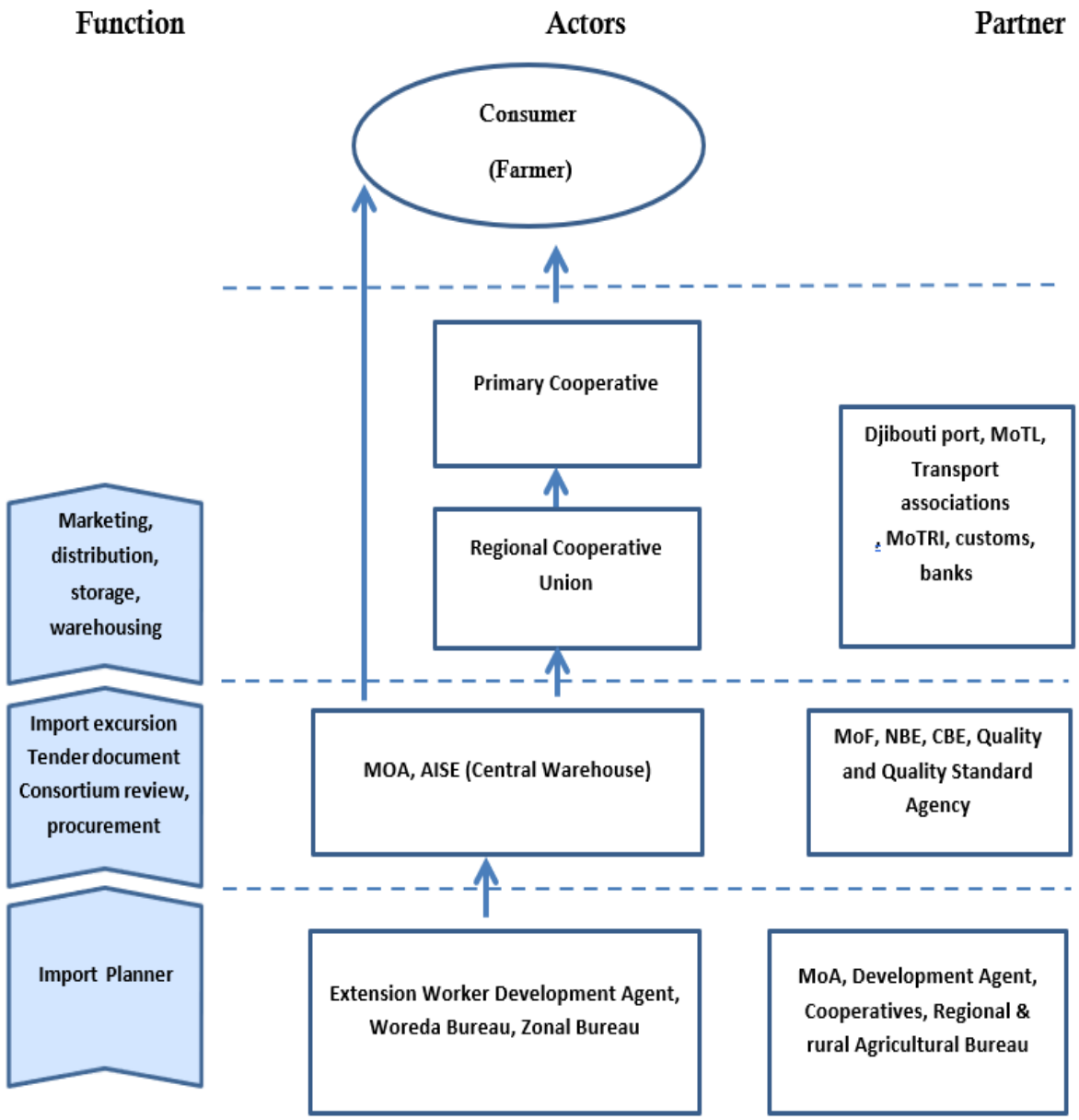
Source of Chemical Fertiliser	No. of respondents	Percentage	Cumulative percentage
Government organisations	4 912 617	22.35%	22.35%
Private organisations	312 942	1.42%	23.78%
Merchants	1 387 507	6.31%	30.09%
Unions	7 214 902	32.83%	62.92%
Others	108 934	0.50%	63.42%
Didn't buy	8 039 359	36.58%	100.00%
Total	21 976 262	100.00%	100.00%

Source: CSA

19.9.1 Fertiliser Value Chain

Figure 19.27 shows the Fertiliser Value Chain

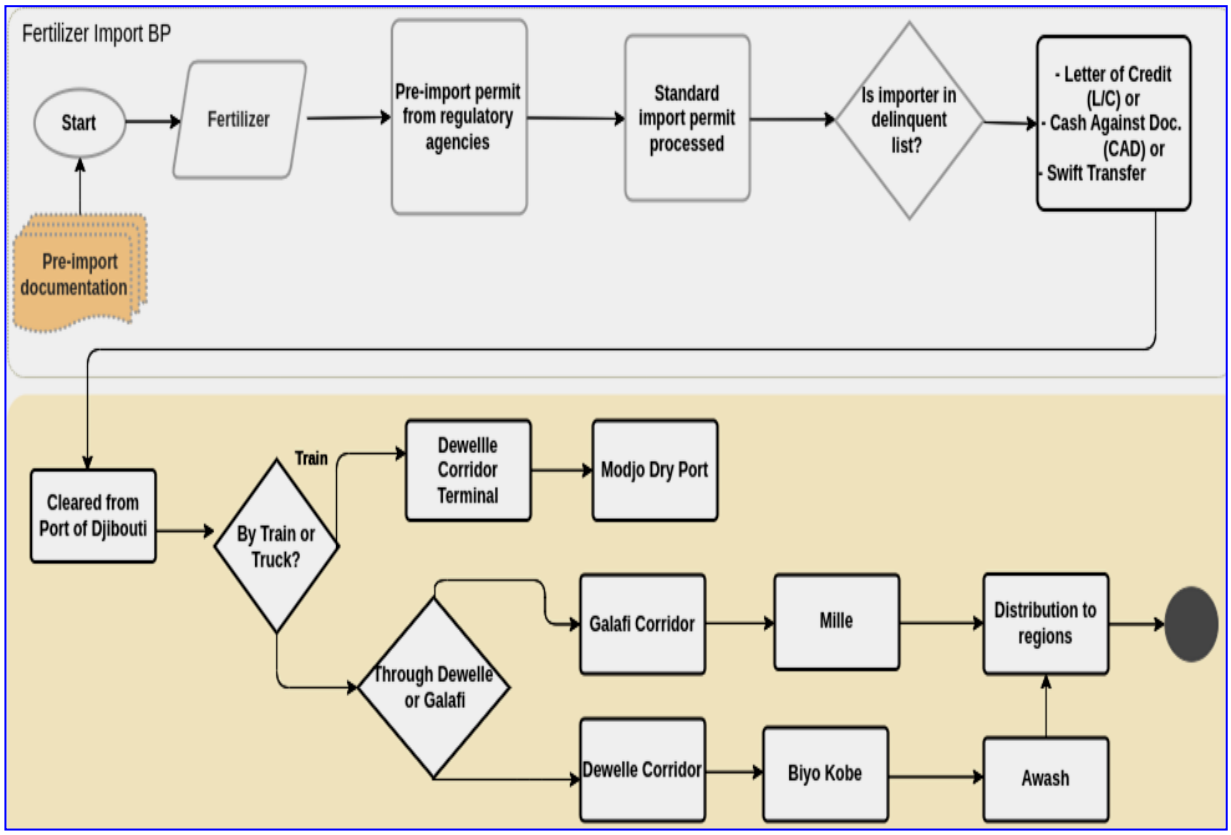
Figure 19.27: Fertiliser Value Chain



19.9.2 Business Process for the Import of Fertiliser

Figure 19.28 shows the Business Process involved in importing fertiliser.

Figure 19.28: Import of Fertiliser Business Process



The fertiliser importation process is as follows:

- Pre-import documentation and physical transport. Pre-import documentation involves obtaining the necessary import permits and licenses, as well as completing the required customs paperwork;
- Physical transport. The physical transport starts from port clearance at Djibouti port to either Modjo dry port for temporary storage or directly to importer warehouses particularity cooperative union warehouses scattered across the country.

The main challenges are securing foreign currency for the first process and a lack of national central warehouses and fleet management for the second process.

As shown in the Figure 4.27, the amount of fertiliser imported, by value, increased in 2020-21 from 2019-20 and then decreased from 2020-21 to 2021-22. Price spikes, the security situation, the bureaucracy involved in the procurement process (which, at the very least, slows the process) and poor awareness of farmers on how to best utilise fertiliser may be the key challenges facing the use of fertiliser in the country. Ethiopia imports Fertilisers primarily from: Egypt, Morocco, United Arab Emirates, Saudi Arabia, and China.

19.10 Minerals, Gemstones and Construction Materials

According to a policy brief prepared by the International Growth Centre in March 2021 entitled "Artisanal and small-scale mining in Ethiopia[43]":

- The mineral sector remains underdeveloped in Ethiopia.
- The share of this industry in GDP has been less than 1per cent in recent years.
- The sector is dominated by artisanal and small-scale mining (ASM), which employs more than 1.2 million people from rural communities and urban youth.
- The use of rudimentary tools is pervasive, and mining and processing recoveries will remain low unless improved equipment and technologies are used.
- Laws related to the sector are inadequate and inappropriate in most cases.
- Illegality is rife in the sector and mining cooperatives are largely ineffective.
- There is potential for ASM to contribute significantly to the national economy.
- Issues of smuggling, limited access to markets and financial services, inadequate mineral value-addition and lack of livelihoods diversification have significantly hindered the growth of this sector.

Additionally, the Ethiopian mining sector generated annual average revenue of ETB389 million and USD131 million from 2018 to 2020. Mineral investment brought annual average revenue of about ETB2m as indicated in **Table 19.3**.

The country has reportedly produced, on average, 2,259 kg of gold, 7.5 million tons of lime, and 139 thousand tons of gypsum.

Table 19.3: Mineral Production for Gold, Limestone and Gypsum

Item	2017/18	2018/19	2019/20	Average
Annual mineral revenue (in million birr)	435	324	408	389
Number of investors licensed	18	24	34	25
Revenue generated from mineral investment (Birr million)	--	3	1	2
Export earnings generated from gold, tantalum, and other gemstones (USD million) (ASM and Companies)	134	49	210	131
Gold production (kg)	2,925	853	3,299	2,359
Limestone (tons)	10,896,332	6,755,309	4,904,155	7,518,599
Gypsum (tons)	253,165	56,313	107,070	138,849

Source: Ministry of Mines

19.10.1 Gold

Asosa zone, Metekel zone, and Kamashi zone are the major gold producing regions and are part of the "Gold Belt" stretching from Sudan and into the north-western part of Ethiopia.

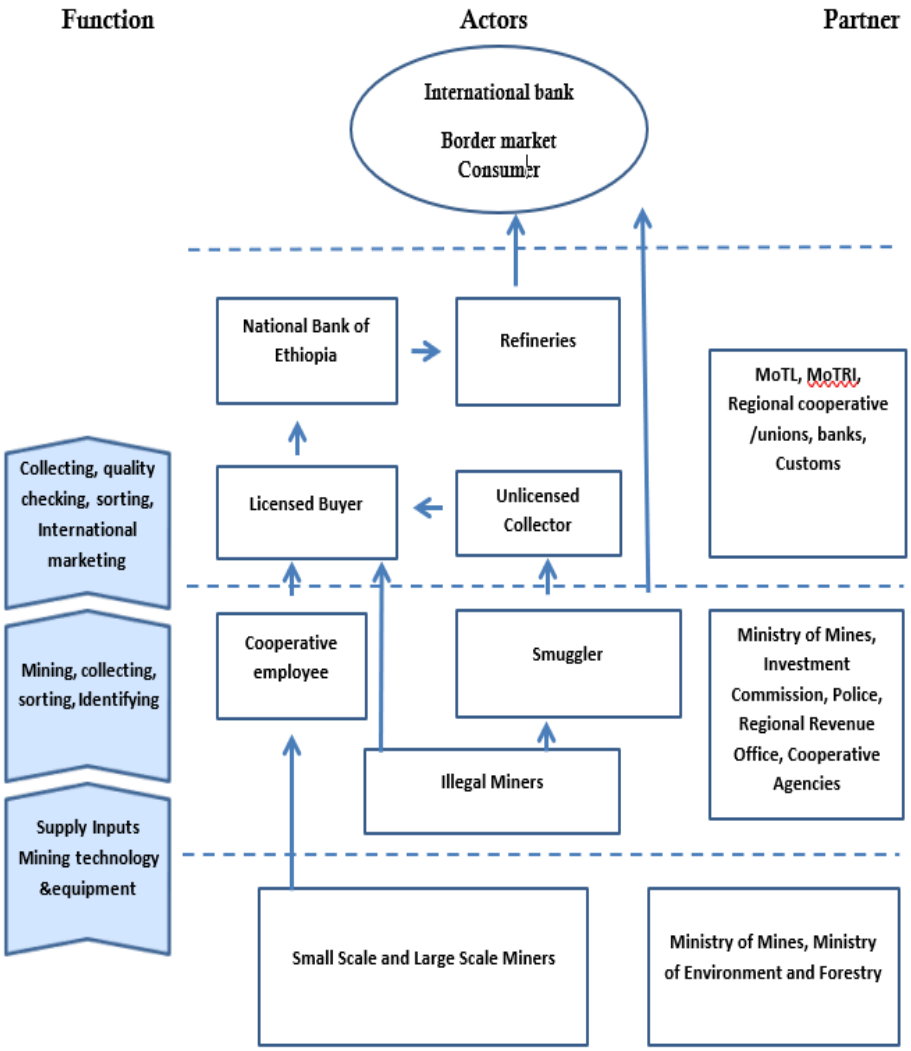
The major producers of gold in Ethiopia are artisanal miners, who account for about 48 per cent of the gold produced.

The main commercial gold mine in Ethiopia is the Lega Dembi Mine located in Oromia, which is owned by Midroc and which produced about 168,280 ounces in 2021 and accounted for about 38 per cent of the gold produced.

[43] https://www.theigc.org/sites/default/files/2021/04/Keili-et-al-March-2021-Policy-brief.pdf

Small scale miners can legally be registered as Small and Medium Enterprises, Cooperatives, or development groups and all gold produced in Ethiopia is supposed to be sold to the National Bank of Ethiopia but there is a reported presence of illegal miners and gold buyers that avoid the formal system and smuggling out of the country.

Figure 19.29: Gold Value Chain



19.10.2 Gemstones

Ethiopia has a large variety of high-quality precious gemstones, including opals, emeralds, sapphires, amazonite, amber, rubies, tourmaline, aquamarine, chrysoprase, period, and semi-precious gemstones including quartz, agate, jasper and there have been new discoveries of colour-change Chrome Grossular Garnets

Of the gems, opal production and exports have been increasing in recent years due to international demand. Precious, fire, and black opals are now being mined in Ethiopia, mainly in Wollo, Lalibella, Shewa around Mezezo, and Afar regions, offering the country four distinct opal types.

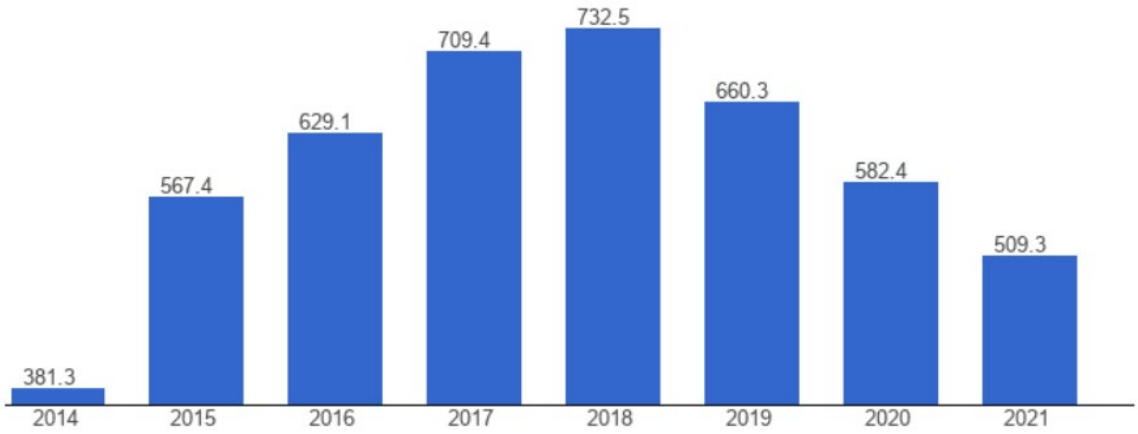
19.10.3 Coal

Ethiopia has an estimated 430 million metric tons of coal, and the government continues to encourage utilisation of this resource by encouraging small- and large-scale coal producers as well as trying to attract investors into this sector.

The largest deposit, with an estimated 200 million metric tons, is located in the Yayu basin in the Ilu Ababa Bora Zone of the Oromia Regional State. In addition, a series of geological investigations conducted by the Geological Survey of Ethiopia reveal that the Delbi, Moye, and Yayu coal deposits are very promising and the Chilga and Mush Valley coal deposits are considered to be potentially significant and require further investigation. Other coal occurrences such as Gojeb, Chinda, Kindo, Halul, and Wake in the Southern People, Nation, Nationalities, and Wuchale in the Amhara, and Arjo, Nejo, and Mendi in the Oromia National Regional States are also potential deposits with a commercial value.

The volume of coal that is imported rose steadily from 381,300 short tons[44] in 2014 to a high value of 732,500 short tons and then steadily declined to 509,300 short tons in 2021, as is shown in **Figure 19.30.**

Figure 19.30: Coal imports into Ethiopia by year (in short tons)



Source: https://www.theglobaleconomy.com/Ethiopia/coal_imports/

Although local production of coal is increasing there are challenges facing the sector such as:

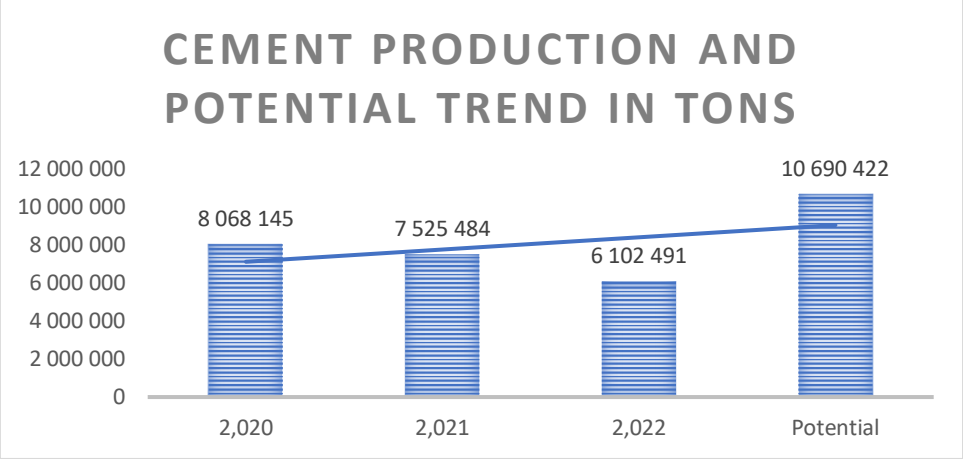
- The environmental impact of both mining and burning coal which is posing an impact to local coffee production and threatens biodiversity of the forest areas where coffee is grown and coal is mined;
- The security situation, an example being the security situation in Kamashi, a major coal mining belt in Benishangul Gumuz regional state where the security situation has affected access to the mines by workers and so production and distribution of coal; and
- The quality of the coal, which is usually of lower quality than imported coal (mostly from South Africa) which adds to the costs of using coal by Ethiopian industries.

[44] A "short ton" is an Imperial unit of mass. It is equal to 2,000 pounds or 907.17kgs. This is less than a metric ton (which is equal to 1,000 kilograms) or a long ton.

19.10.4 Cement and Construction Materials

As shown in **Figure 19.31**, in 2022, the cement industry had an installed capacity of 10.9 million tons per annum, but actual production was 6.1 million tons, so operating at about 56 per cent installed capacity.

Figure 19.31: Cement production by year.



Ethiopia is the 7th largest producer of cement in Africa. There are 13 companies operating 23 plants owned by a mix of international and local investors, with Derba Midroc Cement, Dangote, Mugher Cement, Messebo Cement, Habesha Cement and National Cement (parent company East African Holding), being the largest producers.

Figure 19.32 shows the average annual production of cement between 2020 and 2023 by company, with Dangote being the largest cement producer, with National Cement being the second largest and Debra Cement the third largest. These three companies account for about 60 per cent of Ethiopia's cement production.

Figure 19.32: Ethiopian cement industry average production by Company

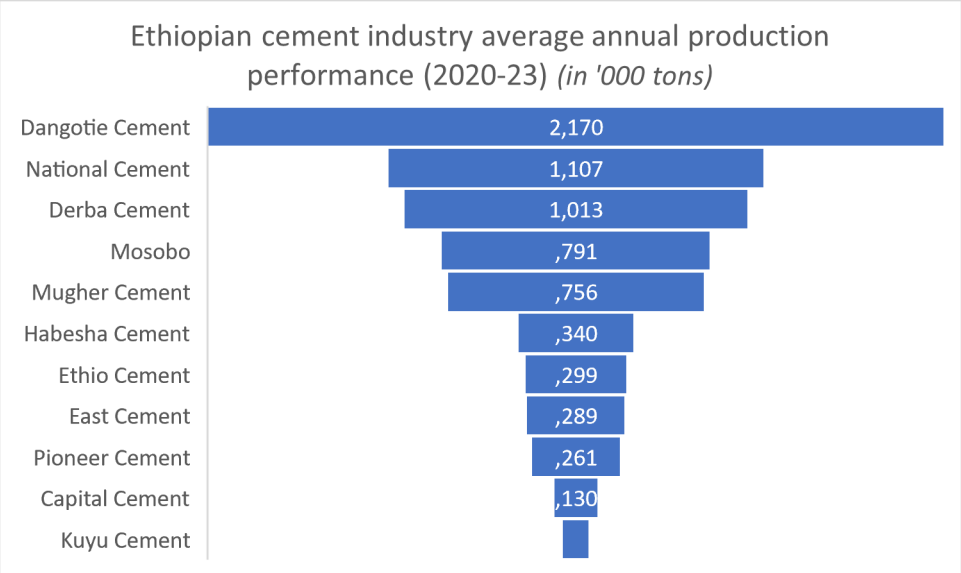
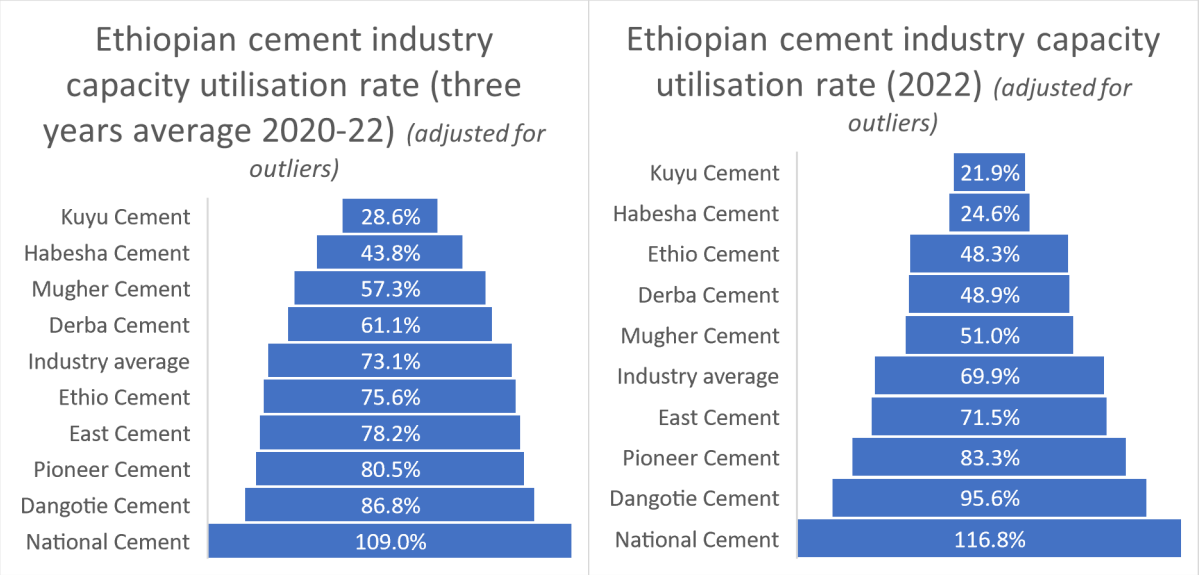


Figure 19.33 shows capacity utilisation by company for 2022 and as an average for 2020 to 2022. The results of two companies have been excluded – Capital Cement that is reporting 200 per cent

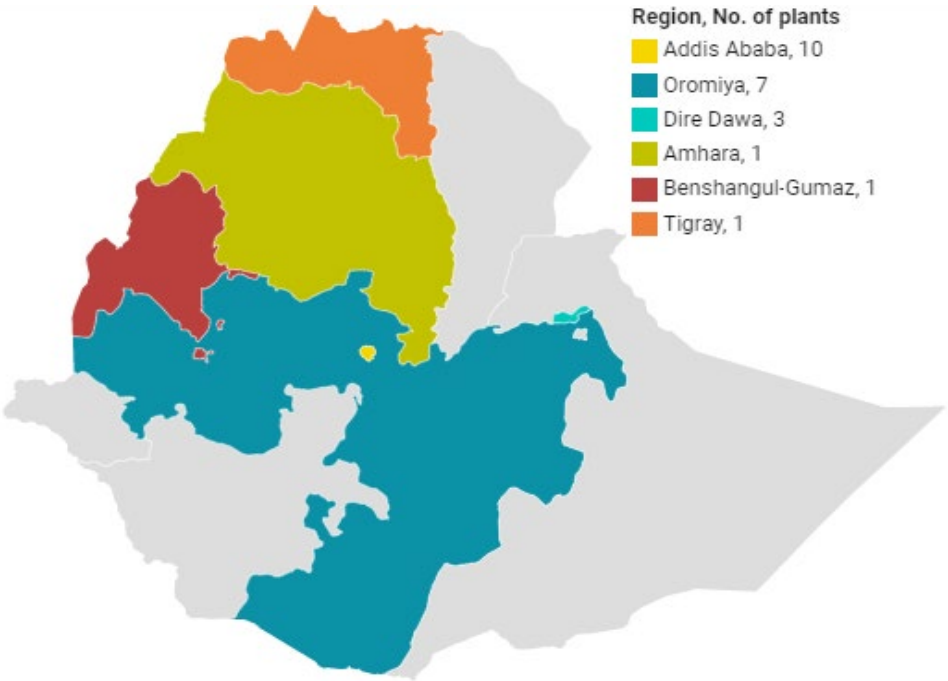
capacity utilisation and Mesobo, which was not in production in 2022. Excluding these two cement plants, the three-year capacity utilisation rate was 73 per cent. National Cement produced at 109 per cent of installed capacity and Dangote had an average capacity utilisation rate of 86.6 per cent.

Figure 19.33: Ethiopian cement industry capacity utilization rate



Production is concentrated in and around Addis Ababa, which is home to over 40 per cent of the nation's cement plants, with the remainder in five of Ethiopia's eleven regions, as shown in **Figure 19.34.** Ten cement plants are located in Addis Ababa, seven in Oromia Regional State, three in Dire Dawa, one in Amhara Regional State, one in Benshangul-Gumaz and the remaining in Tigray.

Figure 19.34: Geographic distribution of cement plants in Ethiopia



https://www.asokoinsight.com/content/market-insights/ethiopia-cement-market on 14 August 2023

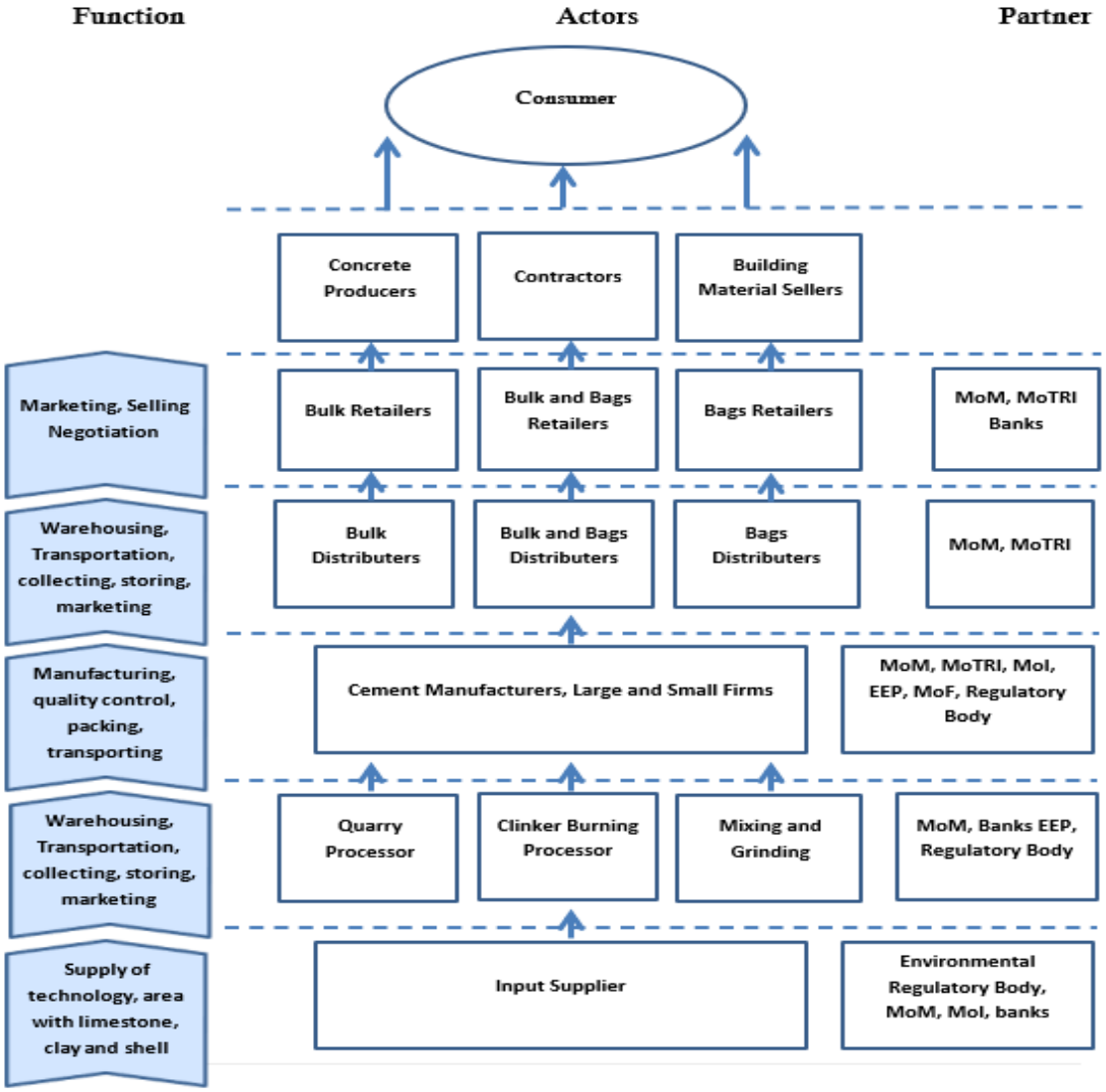
Plans to increase production include the following:

- Plans to build a USD2.5 billion plant by National Cement in Amhara state;
- Plans for by Worku Ayetenew to build a USD1 billion cement plant in Amhara;
- Sinoma announced in June 2023 that it had won the contract to build a USD290 million clinker plant for Derba Midroc in the Oromia region.
- Togoga Cement is planning a 5,000 tonnes per day cement plant in the Tigray region, initially proposed before the COVID-19 pandemic and Dangote, East African Holding (National cement), and West China Cement in Lemi Amhara region, and Mugher Cement are aiming to increase their market share by boosting production.

19.10.5 Cement Value Chain

Figure 19.35 gives the Cement Value Chain.

Figure 19.35: Cement Value Chain

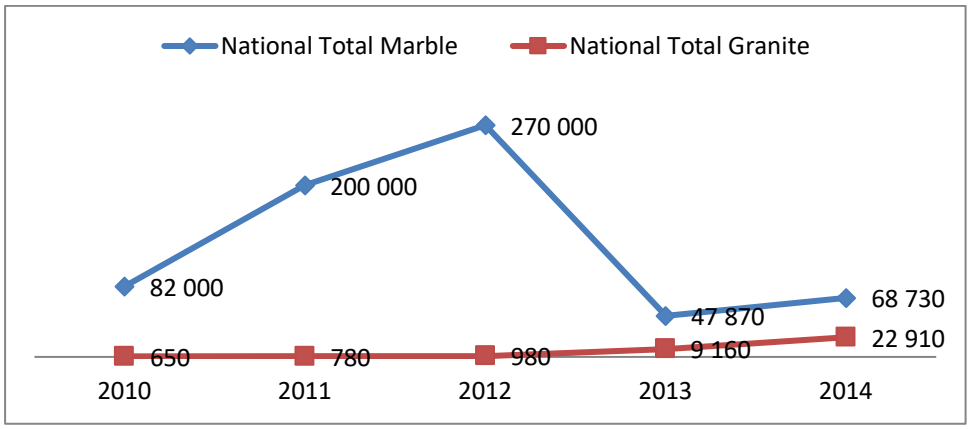


19.10.6 Dimension Stone

Ethiopia has untapped potential in marble production. The marble deposits are mostly located in the Northern and Western part of Ethiopia. In the exploitation of dimensional stone, large, commercial blocks are extracted in the quarry and transported to a processing plant for final shaping and finishing into slabs and tiles. Those that are homogenous and attractive types of rocks are potentially exported to other countries as rough blocks. Interesting deposits of marble are found in the western part of Wellega (Daleti) and Gojam (Mora, Bulen, Mankush and Baruda). The area is quite remote, and distances to Addis Ababa vary between 550 and 800 km, for the most part along non-paved roads. The cost of transportation and the security situation in the area are posing serious challenge for the production and smooth marketability of the product.

Figure 19.36 shows the production of dimension stone in Ethiopia.

Figure 19.36: Production of Dimension stone by year



19.10.7 Oil and Gas

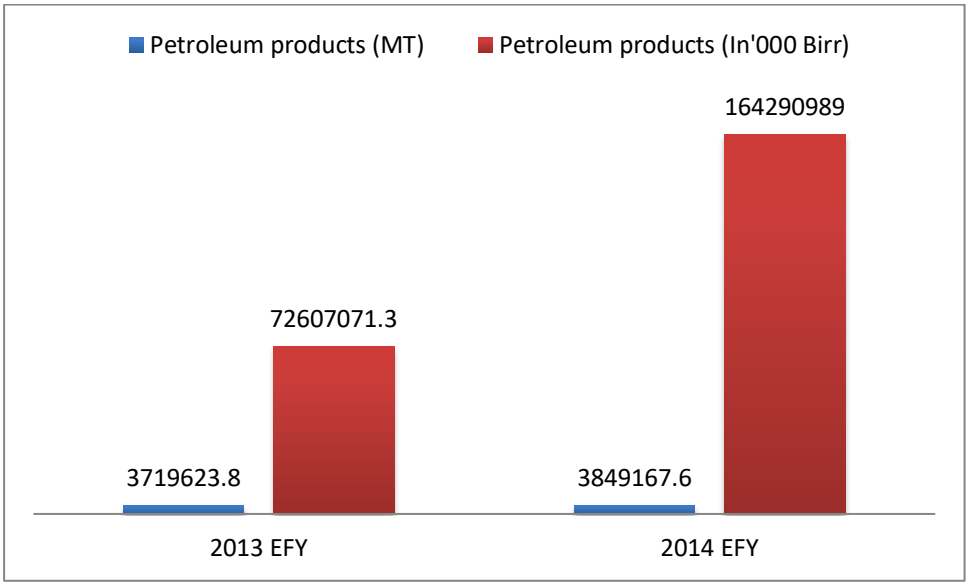
Ethiopia has the potential to be an oil exporter with oil deposits having been located in the northeast, southeast, and southwest of the country. International oil exploration companies have been given oil concessions and, in 2018, Poly GCL struck oil at their oil field of Hilala at the Hamanlei formation, where they had drilled three exploration wells. All of the three wells have shown gas reserves with 2 of them having oil flows. The test production phase of Hilala will see Poly GCL producing 450 barrels of oil per day.

In an area with a proven six to eight trillion cubic meters of crude oil, the Chinese company plans to construct a gas pipeline to Djibouti, where they will build a gas treatment plant, which will convert the gas into liquefied natural gas. The converted gas will then be loaded on special ships specifically built to transport this gas, which will be exported directly to China.

The data obtained from the National Bank of Ethiopia revealed that Ethiopia has imported about 3.8 million metric tons of petroleum products worth Birr 164.3 billion by the Ethiopian Petroleum Enterprise during the 2021/22 fiscal year. This value of petroleum import showed a 126.3 per cent annual surge mainly due to an increase in import of jet fuel (140 per cent), gas oil (127.5 per cent), regular gasoline (120.4 per cent) and fuel oil (65.3per cent).

Similarly, the total volume of petroleum imports increased by 3.5 percent owing to higher volume of jet fuel (11.9 percent), regular gasoline (3.2 percent) and gas oil (2.4 percent), despite the decline in import volume of fuel oil (6.9 percent), as shown in Figure **19.37**.

Figure 19.37: Volume and Value of Petroleum Import in Ethiopia (In MT and '000 Birr)



Source: Ethiopian Petroleum Enterprise, NBE

Consumption of petroleum products has also been rising rapidly and annual oil consumption tripled from 1.2 million metric tons in EFY 1995 to 3.9 million metric tons in EFY 2012 (2019-2020) as shown in **Table 19.4.**

Table 19.4: Annual fuel consumption per metric ton

EFY	ADO (white Diesel)	MR (Benzene)	JET Fuel	KEROSENE (Lamba)	LFO (light black Diesel)	HFO (heavy black Diesel)	Total
1995	681,110	132,014	78,216	183,610	45,896	89,222	**1,210,068**
1996	701,237	141,608	87,697	208,994	45,014	90,497	**1,275,047**
1997	745,669	139,611	113,896	212,550	46,499	108,055	**1,366,280**
1998	851,381	147,514	145,775	229,898	42,318	119,623	**1,536,509**
1999	927,753	146,614	176,778	242,847	45,600	117,615	**1,657,207**
2000	1,107,193	143,025	218,850	265,664	45,861	130,066	**1,910,659**
2001	1,199,673	149,967	214,004	272,304	37,510	117,029	**1,990,486**
2002	1,250,641	162,070	248,386	257,022	10,544	106,910	**2,035,574**
2003	1,154,560	151,634	320,443	239,032	34,823	96,320	**1,996,812**
2004	1,231,815	154,206	319,870	237,399	37,126	110,740	**2,091,156**
2005	1,366,479	185,495	374,035	268,621	38,614	124,095	**2,357,339**
2006	1,514,664	208,082	*411,593*	256,759	37,319	118,940	**2,547,359**
2007	1,730,723	240,972	*460,504*	261,311	38,280	123,489	**2,855,279**
2008	1,919,150	309,973	*483,524*	260,524	39,529	66,947	**3,079,647**
2009	2,173,656	359,538	*589,993*	165,122	38,319	37,450	**3,364,078**
2010	2,477,968	432,556	696,268	76,048	33,100	43,706	**3,759,646**
2011	2,544,334	502,569	731,290	78,367	33,430	38,135	**3,928,125**
2012	2,568,588	528,409	565,984	69,817	35,594	46,440	**3,815,319**

As shown in **Table 19.5**, in EFY 2012 the Ethiopian Petroleum Supply Enterprise (EPSC) sold 3.8 million metric tons of various products worth 3.8 billion Birr to 31 oil companies. This is 2.9 percent lower than last year's 3.9 million metric tons, mainly because of a decrease in demand for jet fuel due to the COVID-19 pandemic.

Table 19.5: Comparison of performance of 2011 and 2012

No.	Fuel type	Volume (metric tons)				Growth (%)
		2011 Performance		2012 performance		
		Size/quantity	Share (%)	Size/quantity	Share (%)	
1	Diesel	2,544,334	64.8	2,568,588	67.3	0.95
2	Gasoline	502,569	12.8	528,409	13.8	5.1
3	Jet fuel	731,290	18.6	565,984	14.8	(22.6)
4	Kerosene	78,367	2.0	69,817	1.8	(10.9)
5	Heavy black diesel	38,135	1.0	46,440	1.2	21.8
6	Light black diesel	33,430	0.8	35,594	0.9	6.5
Total		3,928,125	100	3,815,319	100.00	(2.9)

The Ethiopian Petroleum Corporation (EPC) has 23 strategic depots built in 14 different cities to store 394 million metric tons of different types of fuel at a time as shown in **Table 19.6.** Out of these:

- 327 million litres of diesel can be stored in 15 depots in five different towns;
- 53.5 million litres of gasoline in 5 depots in five towns;
- 50,000 litres of kerosine in 1depot in Gondar; and
- 3 million litres of light black diesel in 2 depots, in Kombolcha and Shashemene.

Table 19.6: Storage depots capacity and quantity in litres

No.		*Petroleum products*				*Total*
	Deposits	*White diesel*	*Gasoline*	*Kerosene*	*Light black diesel*	
1	Adigrat	4,000,000				4,000,000
2	Agaro	3,000,000				3,000,000
3	Awash	100,000,000				100,000,000
4	Awash Operation	30,000,000				30,000,000
5	Bahir Dar	30,000,000				30,000,000
6	Kombolcha 1	4,000,000	1,000,000		1,000,000	6,000,000
7	Kombolcha 2	30,000,000				30,000,000
8	Gambella	3,000,000				3,000,000
9	Gondar 1	1,000,000	500,000	500,000		2,000,000
10	Gondar 2	30,000,000				30,000,000
11	Harar	20,000,000				20,000,000
12	Mekele	30,000,000				30,000,000
13	Nekemt	7,000,000	1,000,000			8,000,000
14	Shashemene	5,000,000	1,000,000		2,000,000	8,000,000
15	Sululta		60,000,000			60,000,000
16	Wolayita	30,000,000				30,000,000
Total		***327,000,000***	***63,500,000***	***500,000***	***3,000,000***	***394,000,000***

Fuel is distributed to just under 1,000 fuel stations throughout the country. Seven of the distribution companies are foreign owned and thirty-one are Ethiopian owned. In terms of market share, five companies have a market share of about 80 per cent as shown in **Table 19.7**.

Table 19.7: Market share of oil companies 2012

No.	Company name	Fuel volume (million tons)	Market Share (%)
1	National Oil Ethiopia	1,220,311.2	32.2
2	Oil Liberia	767,151.8	20.3
3	Total	582,841.7	15.2
4	United	270,011.9	7.0
5	Taf Oil	208,448.3	5.4
6	26 other companies	766,554.1	20.1
Total		3,815,319.0	100

Petroleum and petroleum products are regulated products in Ethiopia by the Ethiopian Petroleum and Petroleum Products Supply and Distribution Regulatory Agency (PPSDA), which was established in 2019. Under this regulatory agency, there are 27 oil depots with a capacity of 400,600,000 litres with different products, like benzene, kerosene, and Light Fuel Oil (LFO). Furthermore, these depots are found in all regional starts of the country as indicated in the following **Table 19.8**[45]

Table 19.8: Location of Liquid Bulk Deports by Name, Capacity, Region and Urban Area

Product	Capacity (m^3)	Region	Urban Area	Product	Capacity (m^3)	Region	Urban Area
Diesel	4,000	Tigray	Adigrat	LFO	1,000	Amhara	Combolcha 1
Diesel	3,000	Oromia	Agaro	LFO	2,000	Oromia	Shashemene
Diesel	100,000	Afar	Awash	**Sub Total**	**3,000**		
Diesel	33,600	Afar	Awash Operation	Kerosine	500	Amhara	Gonder 1
Diesel	30,000	Amhara	Bahirdar	Kerosine	1,000	Amhara	Combolcha 1
Diesel	3,000	Gambella	Gambella	Kerosine	1,000	Oromia	Nekemt
Diesel	1,000	Amhara	Gonder 1	**Sub Total**	**2,500**		
Diesel	30,000	Amhara	Gonder 2	Benzene	1,000	Gambella	Gambella
Diesel	20,000	Harar	Harar	Benzene	500	Amhara	Gonder 1
Diesel	4,000	Amhara	Combolcha 1	Benzene	1,000	Amhara	Combolcha 1
Diesel	30,000	Amhara	Combolcha 2	Benzene	1,000	Oromia	Nekemt
Diesel	30,000	Tigray	Mekele	Benzene	1,000	Oromia	Shashemene
Diesel	7,000	Oromia	Nekemt	Benzene	60,000	Oromia	Sululta
Diesel	5,000	Oromia	Shashemene	**Sub total**	**64,500**		
Diesel	30,000	Snnp	Wolyita	**Grand Total**	**400,600**		
Sub Total	**330,600**						

Independent oil companies are responsible for the distribution and operation of petroleum products, with the main oil companies being:

Oil Company	No of Outlets	Oil Company	No of Outlets	Oil Company	No of Outlets
NOC	215	TAF	68	Full	3
TOTAL	147	Yeshi Oil	14	ABAC	3
Oil Libya	165	Tebarek	8	Kumbi	5
Zagol	17	Bravo	14	Africa Oil	8

[45] Ethiopian petroleum and Petroleum products Supply and Distribution Regulatory Agency, 2021.

Oil Company	No of Outlets	Oil Company	No of Outlets	Oil Company	No of Outlets
NOC	215	TAF	68	Full	3
Kobil	36	NAYK	14	JFM	2
WAS	19	Gomeju	46	Olway	4
Yetebaberut (YBP)	130	Halefay	11	Kernel	8
Zemen	11	Dalol	30	Felegion	2
Habesha	21	Worku	3	Sidiafage	2
Sky	23	Green	21	Ella Trading	2
ODDA	15	Delta	22	Mesh	2
JR	33	Dire	3	Abyssinia	2

All the petroleum oils consumed in Ethiopia, including crude oil and refined petroleum, are imported. Ethiopian Airlines directly imports its own fuels, while Ethiopian Petroleum Supply Enterprise (EPSE) imports the rest. These petroleum oils arrive through the Port of Djibouti, at the Horizon Terminal.

Ethiopia and Djibouti signed a MOU in May 2022 to explore opportunities to develop a new oil terminal in Damerjog Industrial Park in Djibouti to provide storage for oil and petroleum products destined for markets in both countries, as well as for transshipment. It is reported[46] that Ethiopia Investment Holdings (EIH), Ethiopia's sovereign wealth fund has, through EPSE, which is a parastatal, has acquired a 30 per cent equity stake in Damerjog Liquid Bulk Port (DLBP), which is part of the USD 4 billion project of Djibouti Damerjog Industrial Park (DDIP).

19.10.7.1 Fuel Supply Chain

In Ethiopia, fuel marketing and supply is a limited trading system so that the import and export of fuel, quality control, wholesale and retail distribution, transportation and storage of fuel and profit margins, tariffs and pricing licenses are all controlled by government.

The wholesale distribution of oil is open to foreign and local private investors who are able to meet the sector entry requirements.

Fuel is transported from Horizon Oil terminal in Djibouti to local warehouses and fuel stations by the owners of the tanker trucks, all of whom are local investors. Petroleum companies are not involved in oil transportation and oil retail.

Oil is sold to companies on credit with a 30-day settlement period.

On import, all vessels undergo port clearance procedures and customs officials inspect them and their cargo, verify the imported petroleum oils against shipping documents, and collect samples for quality analysis if necessary. Customs duties, taxes, and other import fees are assessed and settled. The petroleum oils are unloaded from the vessel into storage facilities at the Horizon Terminal.

After storage at the terminal, petroleum oils are transported to Ethiopia. The distribution is carried out using tanker trucks because the Ethio-Djibouti Railway is not connected with the Horizon Terminal.

Ethiopian Airlines transports its petroleum oils using its own fleet.

EPSE sells a part of its petroleum oils to retailers directly in Djibouti and transports the rest to Ethiopia. Once in Ethiopia, the petroleum oils are stored at the EPSE's network of tanks. EPSE is

[46] https://tankterminals.com/news/eih-invests-big-in-djiboutis-new-mega-oil-terminal/

constructing its largest oil and gas storage terminal at Dukem, in Oromia, with a storage capacity of 240,000 cubic metres. It is expected to start operations in 2024.

Finally, petroleum oils are distributed to the points of sale (such as distribution centres or fuel stations), and they are sold to end consumers, including individuals, businesses, industries, and transportation companies.

Figure 19.38: Supply Chain for Petroleum Oils.

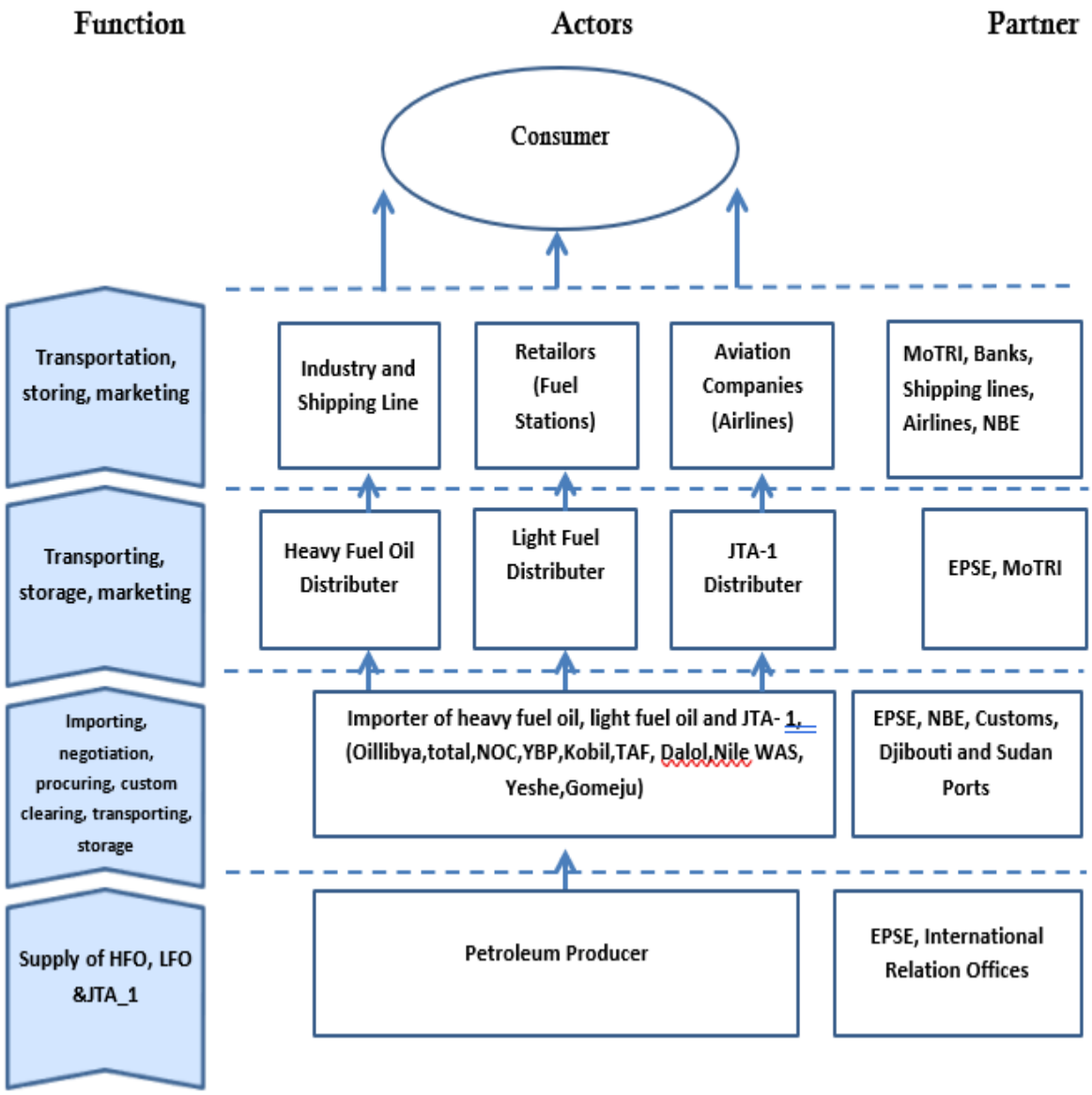


Figure 19.39: Fuel Supply Chain