

BUSINESS OPPORTUNITY REPORT

Spices sector in Ethiopia

2020

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1. MAJOR TRENDS IN THE DEVELOPMENT OF THE SPICES SECTOR

WORLD

The spice trade began in Asia and the Middle East around 2,000 BC. Its contribution to world civilization is well recognized, as it led to the discovery of new markets and trade partners, and to the rapid development of research in pharmacology. The spice trade led to the first continuous exchanges between continents and in many ways helped lay the foundation for the modern world. Spices have lost the status and allure that once placed them alongside precious metals as the world's most valuable items, but the spice sector remains dynamic.

MARKET SIZE

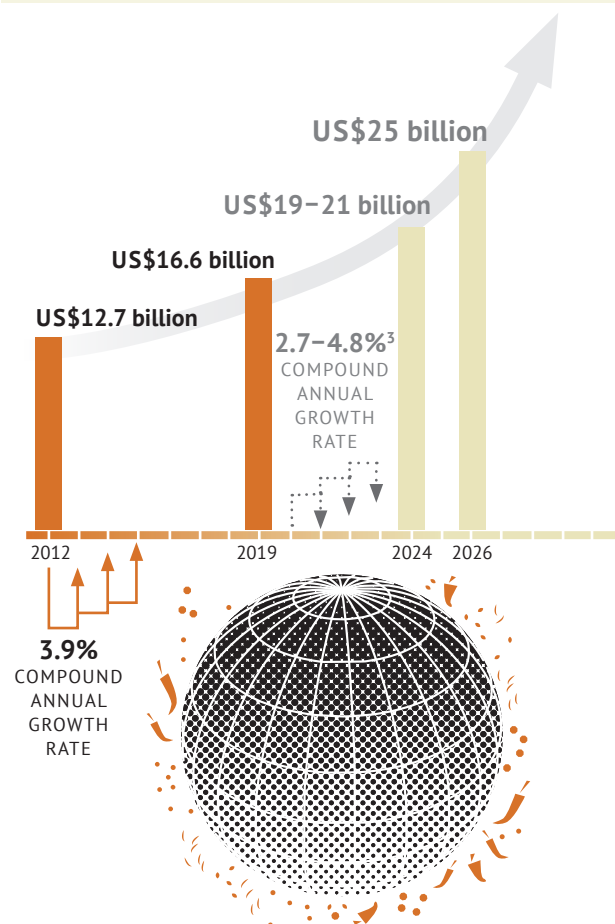
The global market for seasoning and spices has been growing steadily in recent years. The market has grown from a global value of US\$12.7 billion in 2012 to an expected market value of US\$16.6 billion at the end of 2019.¹ By 2024, the market is expected to range from US\$19 billion to US\$21 billion, and to reach US\$25 billion by the end of 2026.

Europe is the largest market for spice and herb extracts. Due to very limited European production potential, Europe is for the most part dependent on the import of spices, herbs and their extracts from emerging economies in the Asia-Pacific region, the Middle East and Africa.² The market for spices in Western economies, such as Europe and North America, will continue to grow, but will be slower than in other regions such as Asia, where general economic growth is higher and markets are expanding rapidly. Asia-Pacific has the fastest growing spices market, with a projected annual growth rate of 6% from 2019 to 2021, reaching US\$3.27 billion by 2021. The food processing industry and the promotion of organic spice cultivation in Asia will be an important driver behind this growth. In Africa, the spices market is growing as well. Key drivers behind this growth are an expanding middle class and the upcoming tourism sector, combined with increased consumer awareness of the benefits of using spices and seasoning.

CONSUMPTION

Of the almost 400 products in the 'herbs and spices' category, about 40 to 50 are of global economic and culinary importance. Global consumption of spices is expanding steadily, with a growth rate of between 3% and 5% per annum. Globalization, growing population and shifting consumer trends towards health and authentic experiences have sustained the growth of spice exports from surplus-producing countries. In addition, the increased consumption of meat in emerging economies (the 'march of the meat eaters') has had an increasing impact on the consumption of spices in those countries.

FIGURE 1: OVERVIEW OF GLOBAL MARKET FOR SEASONING AND SPICES



¹ Mordor Intelligence

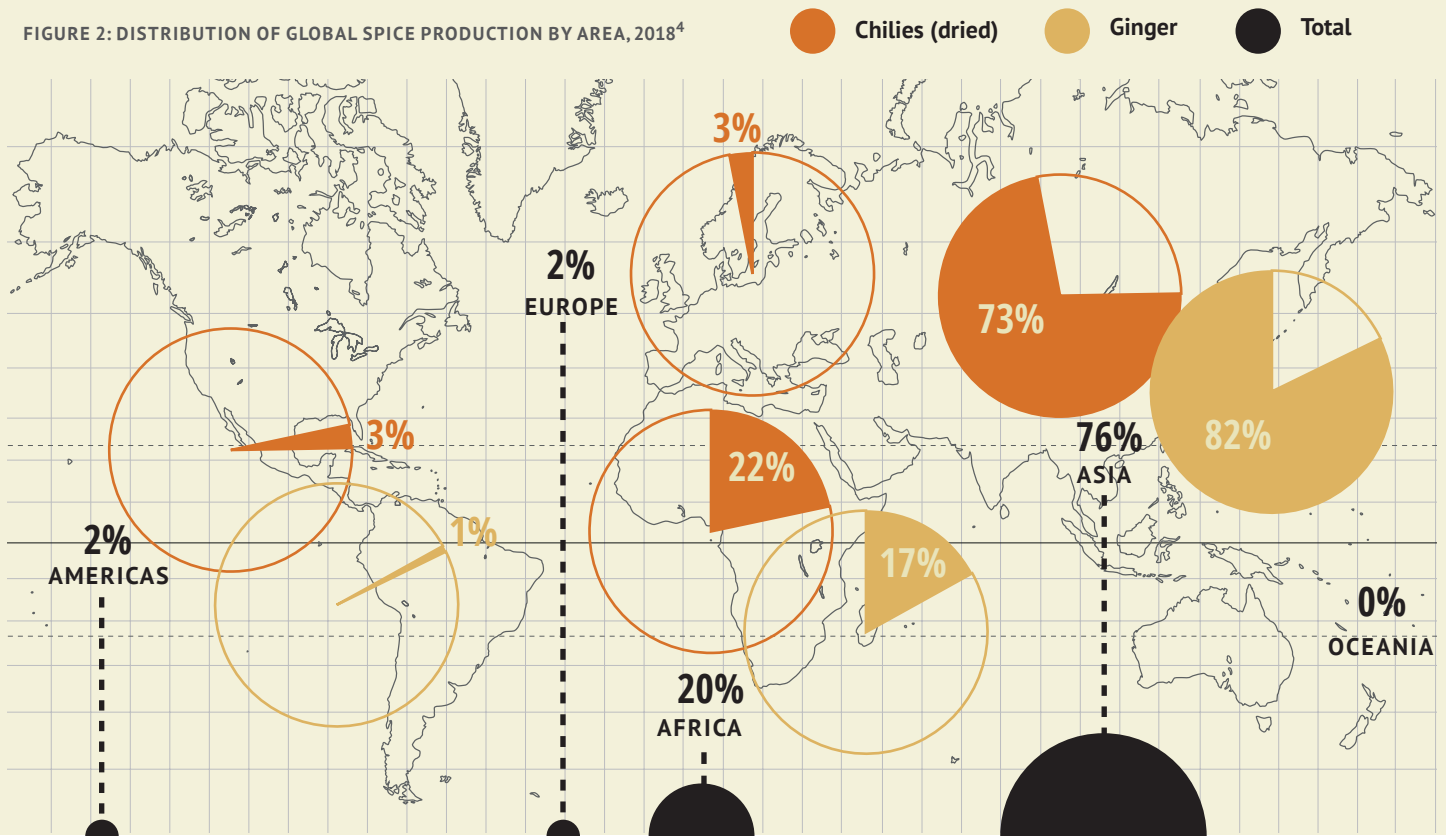
² <https://www.mordorintelligence.com/industry-reports/europe-spice-and-herb-extracts-market>

³ <https://www.statista.com/statistics/876234/global-seasoning-and-spices-market-size/>

<https://www.variantmarketresearch.com/report-categories/food-beverages/seasonings-and-spices-market>

<https://www.globenewswire.com/news-release/2019/03/27/1773920/0/en/Global-Seasonings-And-Spices-Market-Size-Will-Grow-USD-20-99-Billion-By-2024-Zion-Market-Research.html>

FIGURE 2: DISTRIBUTION OF GLOBAL SPICE PRODUCTION BY AREA, 2018⁴



PRODUCTION

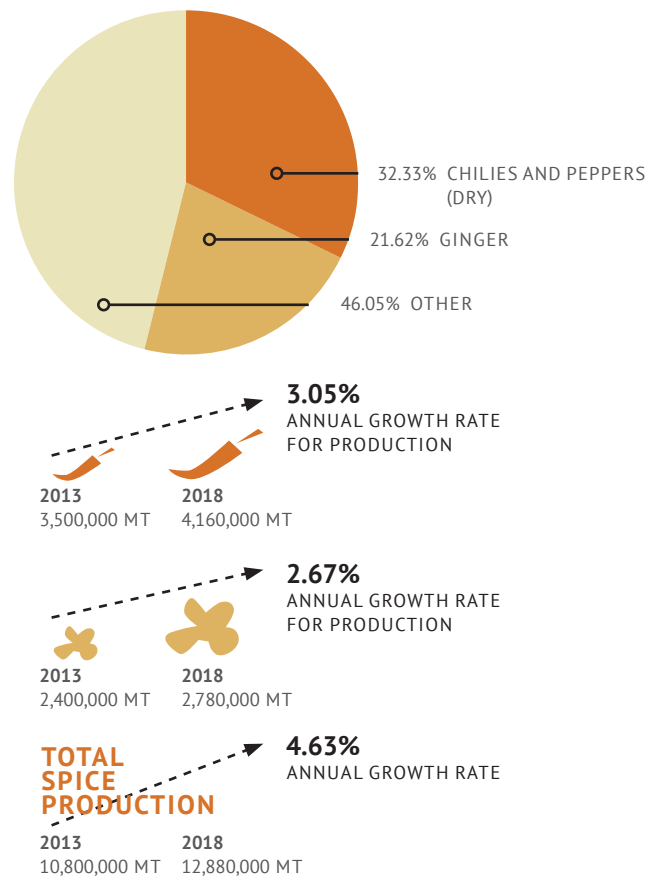
Total global spice production in 2018 amounted to 12.8 million metric tonnes (MT). Chilies account for the largest amount, with a total production of 4.1 million MT in 2018 (32%). Next comes ginger, with an annual global production of 2.7 million MT (22%).⁵ From 2013 onwards, the total annual growth rate of worldwide spice production was 4.63%.

Because of their vast populations and spicy food traditions, India and China are the largest producers and consumers of spices, contributing 44% and 9% of global spice production, respectively. Other top producers include Indonesia, Thailand and Nepal. About 75% of global production is 'captive use' in the countries of origin.⁶ For example, India exports only about 15% of its production.⁷ Vietnam is the most prominent export-oriented country and is responsible for approximately 40% of the global black pepper trade.⁸

TRADE

The global trade in spices was estimated at 3 million MT in 2018, of which exports to developed economies in the EU, USA and Japan accounted for 777,000 MT. Large export countries such as China and India are becoming net importers of some spices, for example black pepper.⁹

FIGURE 3: GLOBAL GINGER AND CHILI PRODUCTION (MT), 2018¹⁰



⁴ FAOSTAT
⁵ FAOSTAT
⁶ FAOSTAT & Trade Map
⁷ FAOSTAT & Trade Map
⁸ FAOSTAT
⁹ Trade Map
¹⁰ FAOSTAT

EUROPE

MARKET SIZE

The European spices market had a total estimated value of US\$6.84 billion by the end of 2019 and is forecasted to reach US\$8.45 billion in 2024, growing at an annual rate of 4.33% in that period.¹¹ This can partly be explained by distribution (import–export) hubs in countries such as The Netherlands, Germany and Spain, but also by increased consumption. Although other regions are expected to show higher growth rates (due to rapid economic developments in those areas), Europe will continue to function as the most important distribution hub of spices.

CONSUMPTION

European consumption of spices is increasing. The main drivers behind increased consumption are evolving consumer trends, which are further explained below. These trends include an increasing demand for meat substitutes and so-called ‘superfoods’, the expanding market for convenience food, as well as the increasing popularity of foods from around the world. With such foods becoming increasingly accessible and mainstream, consumers are developing an appetite for new spices and seasonings. The reasons for this increase in non-Western cuisine include the growing multicultural populations and the ongoing expansion of international travel. As a result, the volume of consumed spices is not only increasing, but is also diversifying.

PRODUCTION

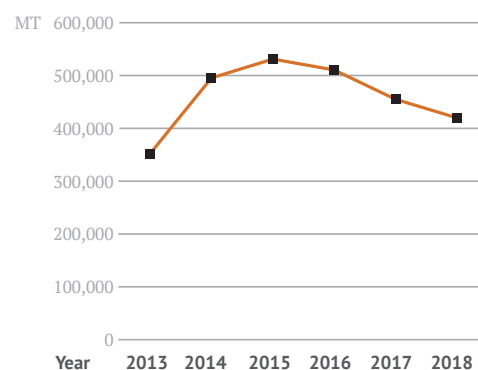
In the period 2013–2016, the production of spices in Europe grew steadily, but from 2017 onwards, production stagnated and decreased slightly to a total of 420,000 MT in 2018.¹² The main reasons for this development are the cheaper production and more suitable climate for the cultivation of spices in other regions. This confirms the increasing opportunities for tropical countries in the cultivation and processing of spices for the European market.

TRADE

In 2018, European imports of spices and herbs were valued at US\$3.2 billion. Between 2012 and 2016, imports increased rapidly, after which the imported value stabilized. This growth pattern can partly be explained by overheating of the vanilla market. Vanilla is a high value crop and its price increased significantly from 2012. As a result, the growth in import volume was lower than the growth in import value in the period 2012–2017. Because of the ongoing trend of the growing demand for natural ingredients, which has been the major stimulus of growing import values since 2012, industry experts forecast a small to moderate growth for European import values of spices and herbs in the coming years.¹³

European imports of spices and herbs originate, for the most part, from emerging economies. These imports peaked in 2017 at a value of US\$1.78 billion, and 2018 was the first year with a decline in aggregate imports since 2011. The remaining share of imports comes from intra-European trade (US\$1.1 billion in 2018) and the rest of the world (US\$100 million in 2018). Virtually all intra-European trade consists of re-exports of spices and herbs that originate from emerging economies. Total imports decreased by 4.77% between 2017 and 2018, which may be attributed to a decline in the vanilla trade.¹⁴

FIGURE 4: ANNUAL TOTAL EUROPEAN SPICE PRODUCTION (MT), 2013–2018



¹¹ Mordor Intelligence

¹² FAOSTAT

¹³ CBI demand spices and herbs

¹⁴ CBI demand spices and herbs

TRENDS IN THE EUROPEAN MARKET FOR SPICES

In terms of value, the most important suppliers of spices to the European market are Madagascar (due to its vanilla production), followed by China and India. Vietnam remains the main supplier of black pepper to Europe, although imports from Vietnam are reducing, as many Vietnamese suppliers are facing increasing difficulties in complying with EU legislation due to excessive pesticide residue levels.

The spices with the largest import volumes (in metric tonnes) to Europe are ginger, pepper and turmeric. Ginger imports take an important share of 44%, originating from China, Peru and Brazil. In terms of volume, the most important emerging economies that supply the European market are China, India, Brazil, Indonesia and Vietnam.¹⁵

Germany and The Netherlands are the two important trade hubs for spices for the rest of Europe, and are mainly re-exporters. This also applies to Spain, although to a lesser extent, as Spain is also a producer of spices.¹⁶

FIGURE 5: SHARE OF TOTAL SUPPLY OF SPICES TO EUROPE

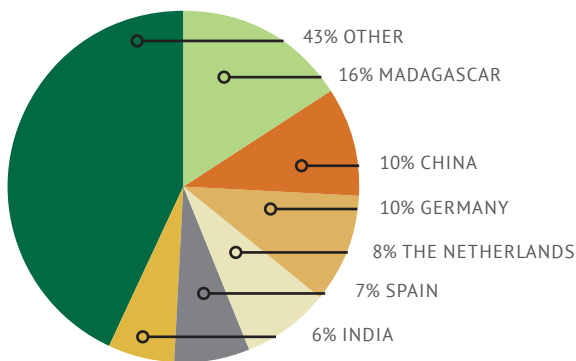
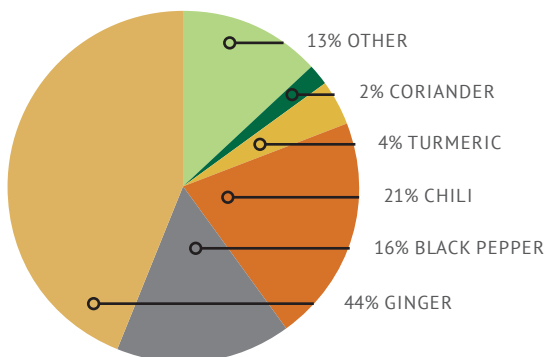


FIGURE 6: EUROPEAN SPICE IMPORTS FROM EMERGING ECONOMIES, 2018



¹⁵ CBI demand spices and herbs

¹⁶ CBI demand spices and herbs

¹⁷ CBI herbs and spices 2

¹⁸ CBI herbs and spices 2

¹⁹ CBI herbs and spices 1

²⁰ CBI herbs and spices 2



ADAPTATION OF HEALTHIER LIFESTYLES AND THE INTRODUCTION OF 'SUPERFOODS'

A large segment of the European market is turning towards more healthy diets that include spices. This trend is supported by the public promotion of the health and medicinal benefits of spices.¹⁷ Unhealthier food ingredients – such as salt, sugar and synthetic additives – are replaced by spices, and several large food processors have set ambitious reduction goals. Some spices are used as traditional or alternative medicines; others have probiotic effects on intestinal micro-organisms or are believed to benefit health in different ways. Recently, foods with exceptional benefits have been labeled 'superfoods'. Examples of superfoods include ginger and turmeric. The European market for superfoods is growing rapidly.



MEAT SUBSTITUTES

Per capita meat consumption has stabilized in Europe and is even decreasing in some European countries. The meat industry is the largest user of spices. However, the corresponding loss in demand for spices will partially be offset by other segments, such as vegetarian and vegan food products, which also make use of spices. In December 2018, veganism was announced as the 'fastest growing culinary trend of 2018' by the largest British retail chain, Tesco. The trend for plant-based proteins (based on soy, wheat and pea protein) is expected to expand, including across Europe, with spices and herbs used to imitate the taste of meat.¹⁸



ORGANIC FOOD

The organic market for spices and herbs is growing and is expected to continue to grow in the future. This growth is mainly driven by the increasing consumer preference for a healthy lifestyle, and sustainable food production with a minimum (negative) impact on the environment. As a result, a growing number of manufacturing companies are using organic certification and labels to distinguish their products in a competitive market.¹⁹

Industry estimates that the current value of the global organic spices is between US\$750 million and US\$1 billion (around 5–7% of the total market). The demand for organic spices is expected to grow by 5% to 7% annually. Currently, India, China and Vietnam are the key exporters of organic spices. The organic spices segment is dominated by commodities such as chili, ginger and garlic.²⁰



GROWING POPULARITY OF NON-WESTERN FOOD

Culinary traditions from other continents are being embraced by European consumers as a result of globalization. Flavors and spices of Mexican, Moroccan and Thai cuisine are currently very popular, in addition to the more established Chinese and Indian cuisines. Furthermore, the EU population is becoming more multicultural, with a growing share of people from various Asian and African ethnic groups. The demand for specific spices differs per country and sometimes even per region. For example, the UK is extensively influenced by Indian and Pakistani cuisine, Germany is influenced by cuisine from the Middle East, and The Netherlands is influenced by Indonesian cuisine. The increasing interest in cuisines from across the world offers opportunities for exporters from emerging economies.



INCREASED INTEREST IN CONVENIENCE FOOD

With single-person households increasing and EU consumers spending less time on meal preparation, the demand for easy-to-prepare and read-to-eat meals is increasing. These food products rely on spices to retain and enhance food flavor, and therefore increase the demand for processed spices and herbs. Moreover, street food markets around the world are inspiring the flavors and recipes of new spice blends, sauces and condiments. Although the market is small, the supply of herb and spice mixtures from emerging economies to Europe grew by 6.3% annually.²¹



MOVEMENTS TOWARDS (OTHER) ORIGIN COUNTRIES

Due to growing scarcity on the world market, European interest in supply chain control and compliance with strict European requirements, European buyers are moving closer to the source of supplies. Consequently, European buyers are more willing to invest in long-term and close relationships with reliable suppliers. This also means that buyers are becoming more willing to invest in value addition in the countries of origin. Moreover, the spice industry is looking at ways to increase on-farm yields. Sector initiatives focus on training in sustainable practices, better water management, the development of improved spice varieties, and the proper use of pesticides and fertilizers.

Many of the spices imported into Europe are produced in tropical climate zones. China and India – traditionally the main suppliers of spices to Europe – are becoming the main spice importers, because their domestic production cannot meet domestic demand. This has led to the development of new production and sourcing destinations. Many European importers are interested in exploring new sourcing options in order to reduce supply risks due to having only one supply country.²²



GROWING SUSTAINABILITY AWARENESS

Sustainability is an increasingly important topic in society, the media and politics. It has moved from niche markets into the mainstream market. Now, mainstream market leaders are investing in sustainability, not only because of the better social image it attracts, but because they recognize financial benefits such as cost reduction, shorter supply chains and easier compliance with European regulations.

Many European buyers of spices are implementing sustainable sourcing policies. A group of mainly European companies and organizations formed the Sustainable Spice Initiative in 2012. The main objective of this initiative is to strive for fully sustainable spice production and trade in the sector. However, sustainable sourcing is not only a private initiative, since sustainability has been placed on the global agenda through the 2030 Sustainable Development Goals of the United Nations.²³



FOOD SAFETY AND REGULATIONS

Food fraud relating to crushed and ground spices has expanded as a result of increasing prices over the past few decades. Spices can be adulterated intentionally (e.g. using cheaper varieties, salt, shells or synthetic additives) or unintentionally (e.g. by spill overs from fertilizers or insects). Recent developments have made European buyers increasingly reluctant to source from outside Europe due to such risks. In order to protect traders and consumers from adulterated products, European laboratories are working to create more tests to reveal potential food fraud.

With respect to regulations, Regulation 1169/2011 (of the European Union) came into effect in December 2014, concerning new labeling rules regarding the specification of ingredients of pre-packed food products. This regulation aims to enhance the comprehensibility of labels on food products with allergens. In the same year, EU Regulation 884/2014 enforced maximum aflatoxin levels in food. This regulation put in place more strict conditions on the imports of certain foodstuffs from third countries into the EU, including spices. The maximum aflatoxin level allowed is 15 pb (parts per billion). The enforcement of this regulation has led to several instances of Ethiopian spice containers being rejected in both ports of departure and entry after inspection and testing for aflatoxin.



FAIR TRADE

The European Union is officially progressing towards the fair sourcing of food products. On 12 April 2019, the European Parliament formally adopted the Unfair Trading Practices Directive. Farmers in emerging economies are especially vulnerable to unfair trading practices, as they are predominantly smallholder farmers with a weak negotiation position and limited market information. As a result, they are less likely to have links with alternative markets and may have less access to legal support or the information needed to challenge unfair practices of large European buyers.²⁴

²¹ CBI herbs and spices 1

²² CBI herbs and spices 1&2

²³ CBI herbs and spices 2

²⁴ CBI herbs and spices 2

AFRICA

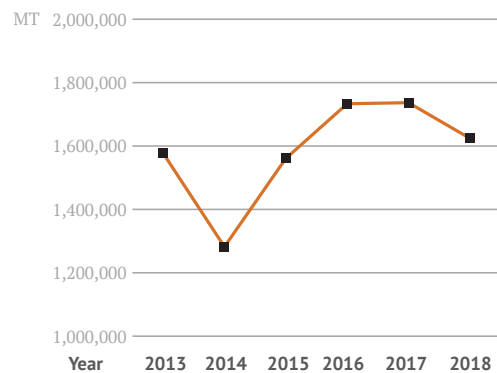
CONSUMPTION, PRODUCTION AND TRADE

Most of the spices produced in Africa are consumed within the continent, but this trend is changing. In 2013, more than 23% of the traded value of spices was inter-continental, while in 2019, the share of the inter-continental spice trade was only 11%.²⁵ Besides Africa, the Asian continent is the most important destination for African spices (especially India, Indonesia, Vietnam and several Middle Eastern countries).

The production of spices in Africa increased from 1.58 million MT in 2013 to 1.62 million MT in 2018 (and attained a peak of 1.78 million MT in 2017). In terms of global market share, African production has decreased from 15% to 13%. This is mainly due to a higher increase in the production of spices in other areas (especially Asia and Latin America).²⁶

The most important spices produced in Africa are dried chilies (57% of total produced volume), followed by ginger (29% of total produced volume). The production of dried chilies has increased substantially over the years (average annual growth rate of 3.4% in 2013–2018), but the production of ginger decreased (average annual growth rate of -4.2% in 2013–2018).²⁷ The production of other spices follows global production trends.

FIGURE 7: SPICE PRODUCTION VOLUME IN AFRICA (MT), 2013–2018



²⁵ Trade Map
²⁶ FAOSTAT
²⁷ FAOSTAT





2. ETHIOPIAN SPICES SECTOR

TRENDS

Ethiopia is situated on the ancient spice trail from Asia, and the city of Axum was an important hub in the early spice trade. Ethiopia is the home of many spices. Due to its ecological richness, the country is suitable for growing 60–100 species.

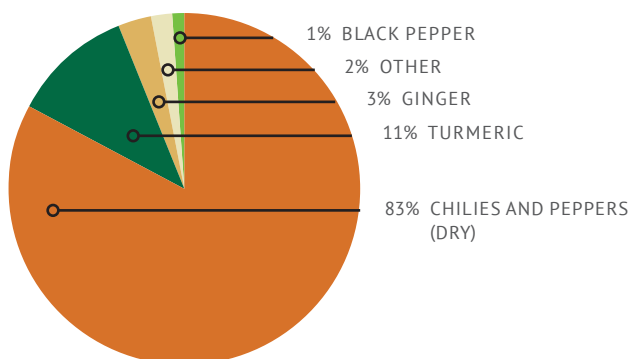
Today, Ethiopia is one of the largest consumers of spices in Africa. Ethiopia grows many spices, which are used not only to flavor bread, butter, meat, soups and vegetables, but also to produce medicines and perfumes. Most of the spices produced²⁸ (96%) are consumed domestically.

PRODUCTION

According to FAOSTAT data, total spice production in Ethiopia increased from 234,000 MT in 2013 to 356,000 MT in 2018, while the area under spice cultivation over the same period increased from 150,000 ha to 207,000 ha. Chilies (294,000 MT), turmeric (39,000 MT), ginger (11,000 MT) and black pepper (4,000 MT) are the main spices produced in Ethiopia.²⁹ Chili pepper accounts for over 80% of total spice production. The share of chili pepper is very high and has increased over the years since several diseases decimated the production of ginger in Ethiopia (this will be elaborated in section 3).

Ethiopia produces more than 50 spices from the 109 spices listed by the International Organization for Standardization (ISO). SNNPR, Oromia and Amhara are the main spice-producing regions in the country. SNNPR is the main producer of ginger, turmeric and black cardamom, primarily in Kaffa Zone, Bench Maji Zone and Gedeo Zone. Oromia Region (especially Illubabor Zone) and Amhara Region are chiefly responsible for the production of chilies and black cumin. According to a recent estimate, around 1.1 million households in Ethiopia are engaged in the farming of spices.³⁰

FIGURE 8: SHARE OF ETHIOPIAN SPICE PRODUCTION, 2018³¹



²⁸ FAOSTAT production weight vs. Trade Map export weight

²⁹ FAOSTAT

³⁰ ECTA

³¹ FAOSTAT

EXPORTS

Thus far, Ethiopia is not recognized as a major exporter of spices, and the contribution of spices to the national economy is low. Agricultural exports primarily consist of coffee, pulses, vegetables, oilseeds and cut flowers. These crops accounted for 62% of the total export value of US\$1.6 billion in 2018, whereas spices represented 0.42% of total export value.³² Nevertheless, exporters and international traders of pulses and oilseeds often also export or import spices (they are the same traders), providing an opportunity for the spices sector to tap into the existing trade infrastructure. Preliminary data from 2019 show comparable patterns, although the exported value of ginger seems to have decreased further.

Spice exports between 2011 and 2017 amounted to an average of 17,000 MT per annum, representing a value of US\$29 million. From 2013 onwards, Ethiopian exports declined, stabilizing at a volume of 13,000 MT, representing a value of US\$21 million in 2017. This decrease is mainly due to diseases that dramatically affected ginger production. In 2013, ginger was the largest exported spice and was responsible for 45% of total export value (US\$12 million). In 2017, ginger exports from Ethiopia had a value of just US\$10,000 and was thus responsible for a negligible share of Ethiopian spice exports.³³ As a result, turmeric now occupies a large share of the former ginger farms, of which the exported weight increased by 64% to a total amount of 5,851 MT in the period 2013–2017. However, the production of turmeric does not fully compensate for the losses in ginger production, since the export price is lower. Data are not available for the years 2018 and 2019.



FIGURE 9: TREND OF ETHIOPIAN SPICE EXPORTS IN WEIGHT AND VALUE, 2011–2017

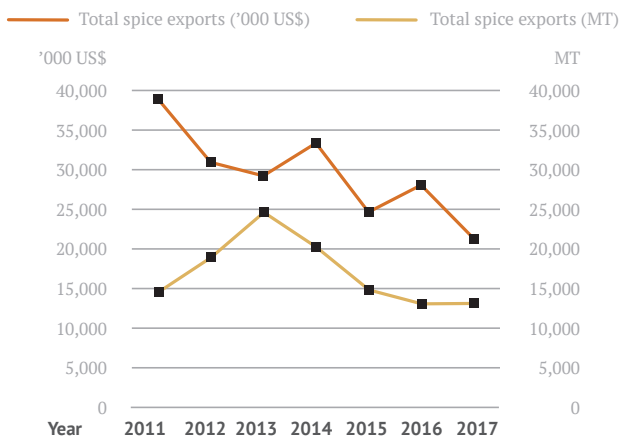
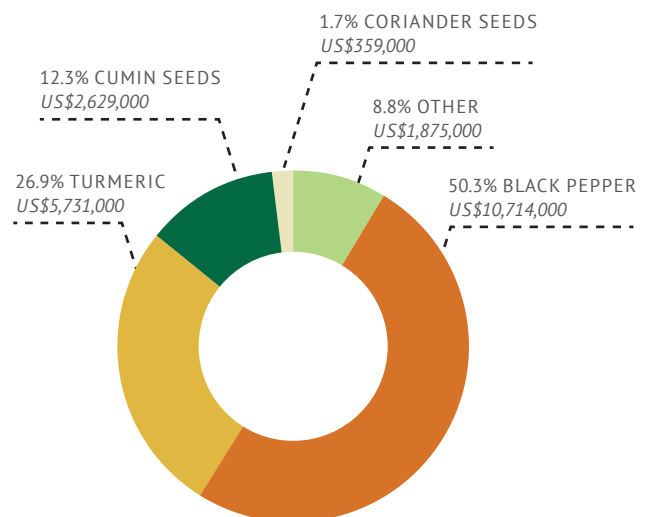


FIGURE 10: DISTRIBUTION OF ETHIOPIAN SPICE EXPORTS BY VALUE, 2017



³² Trade Map

³³ Trade Map

EXPORT DESTINATIONS

Most exported Ethiopian spices find their way to other African countries, but the export market is shifting. The total share of Ethiopian spice exports to African countries decreased from 61% in 2013 to 53% in 2017. Data for 2018 and 2019 are not available.

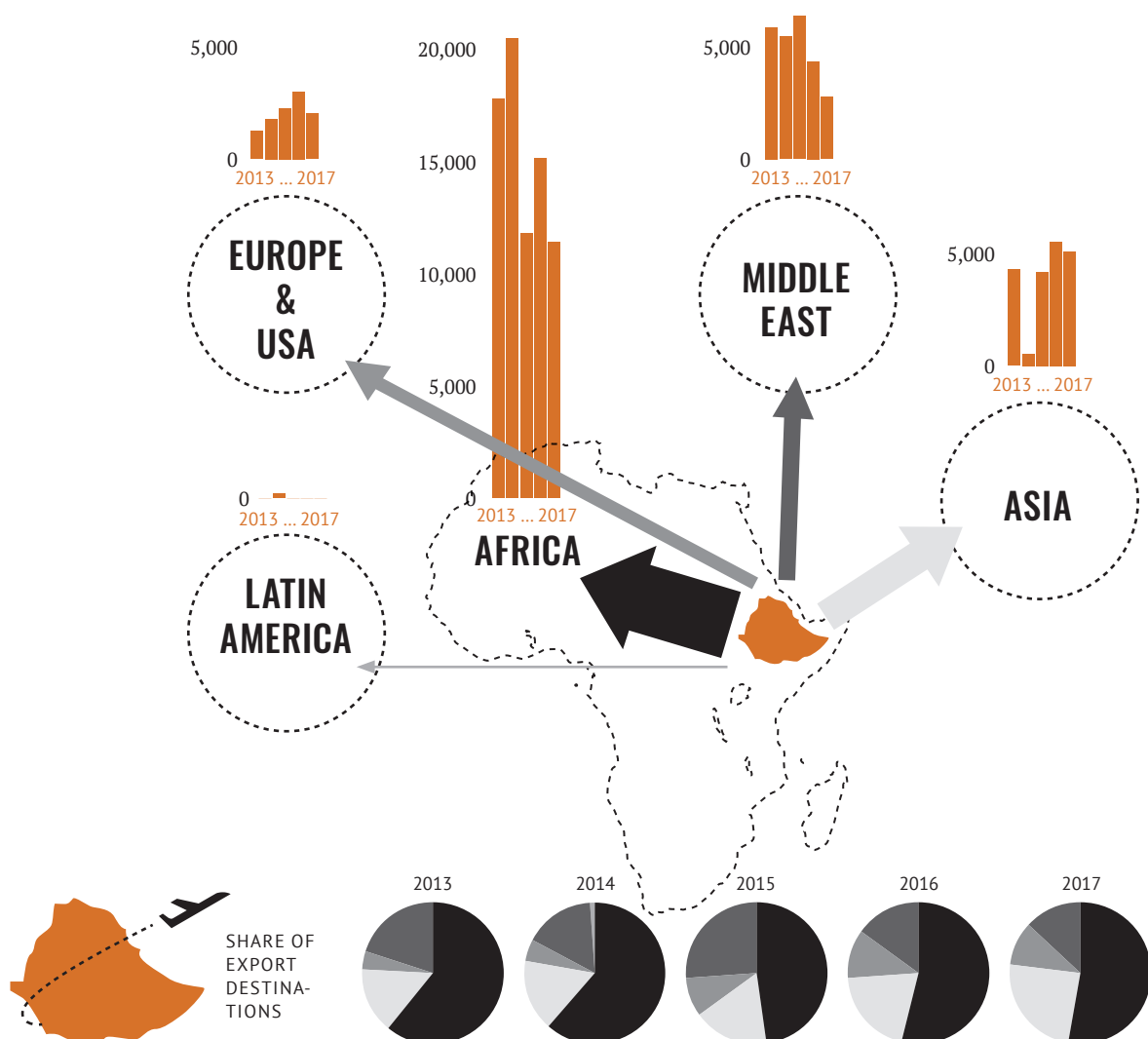
In 2017, Sudan took the lion's share of 40% of total export value. Other important export destinations are Egypt, USA and Djibouti. The export of spices to Asia is increasing: the relative export share increased from 15% to 24% in the period 2013–2017. A share of 10% found its way to Europe in 2017, compared to 4% in 2013, which is an increase of 63% in absolute terms. This is expected to continue, since the European market for spices is expected to expand (see section 1). The exports of spices to the Middle East decreased by 53% in the 2013–2017 period.

China, Somalia, USA, Saudi Arabia, Germany and The Netherlands are Ethiopia's top trading partners in terms of total Ethiopian exports.

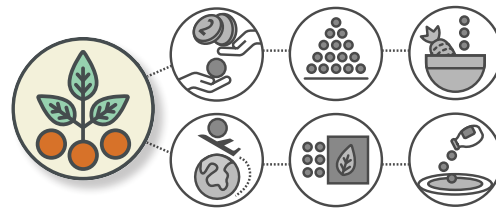
MAIN OPPORTUNITIES

- » Historically, the most important spices in Ethiopia are ginger, turmeric and chili. Although ginger and chili production are currently challenged by diseases, these spices are traditionally grown in Ethiopia with a relatively well-established value chain. It is therefore expected that production will recover, and both remain promising for the near future as export products.
- » Current production and farm practices of many spices can be considered to be 'organic' to a large extent. However, there are only a few examples of exporters with organic certification for spice products. This stems mostly from the challenge of traceability due to fragmented production and relatively high license costs, as each farmer's cultivation and processing practices needs to be inspected. Nevertheless, there are examples of nucleus farms and exporters that have successfully obtained organic certification for their product chain, including contracted out-growers. It would be worth exploring the improvement of traceability and licensing further, as interesting premiums can be obtained with organic certification.

FIGURE 11: DISTRIBUTION OF ETHIOPIAN SPICE EXPORT DESTINATION MARKETS, 2013–2017



VALUE CHAIN OF ETHIOPIAN SPICES



PRIMARY PRODUCTION

General

In Ethiopia, approximately 98% of all spices are cultivated by smallholder farmers living in rural areas of Ethiopia. Spices are predominantly intercropped with coffee, banana and maize, and in some instances with sugarcane and *teff*. Smallholder spice producers are usually organized in small groups or cooperatives, who in turn are organized in cooperative unions (such as Bench Maji Coffee and Andinet Farmers' Cooperative Union) that promote spices as part of their 'crop portfolio'. A few export-oriented companies – such as YSO, Nati Plc, and Fasika Baltina and Spices – operate out-grower schemes. The major spices produced by commercial farmers are ginger, turmeric, chilies and black pepper.³⁴

The cultivation of spices by smallholder farmers is normally performed on small plots of land (< 0.5 ha) around homesteads and in natural forests.



- » Another opportunity is the increased focus on processing and value addition within Ethiopia. The prices of processed spices are substantially higher than those of raw products. In this context, rural value addition provides excellent opportunities for investors to increase margins. A big challenge in the ginger supply chain is the low quality of post-harvest drying at farm level. By washing, slicing and drying the crop down to <12% moisture, the volatile oil content is better preserved, its color better expressed, and mold growth avoided. This results in a potential significant premium of \$0.20 per kg. For turmeric, the same premium can be obtained by investing in better post-harvest drying practices at the farm and company/cooperative level. Currently, the standard processing method is predominantly used, namely boiling and then drying the turmeric. However, turmeric is often overcooked, which leads to a darker color that is less favorable to importers. By slicing and drying without cooking, or by polishing and drying the fingers, export markets could be better served, and premiums could be obtained.
- » Ethiopia is investing heavily in agro-industrial parks to commercialize production, stimulate local value addition and attract investors. By creating clusters of producers around these parks, it will be easier to reach scale and establish efficient forms of processing and input provision, including pesticides, fertilizers and packaging materials. Seventeen light manufacturing belts have been identified for development until 2025. It is expected that these investments will have a stimulating effect on production and local processing. Examples of agro-industrial parks under development are the Federal Industry Park in Jimma (close to the spices belt of Kaffa/Bonga) and the Agro-Industry Park in Yirga Alem (close to another potential spices belt around Dila and the spices research center in Wondo Genet).
- » Lastly, intercropping spices with other crops that are well-established and with an efficient value chain (such as coffee) is promising. Section 3 elaborates further on this topic by discussing the opportunities of each individual spice.

³⁴ Based on interviews carried out by the research team with producers, export companies and public stakeholders

Challenges

There is a large disconnection between the expectations of international buyers in the high-end markets of the EU, USA and Japan, and the practices of smallholder farmers in the field. Smallholder farmers are generally not aware of the requirements of international markets. Local collectors and traders predominantly grade products according to primary sensorial aspects (size, color and moisture), so there is no incentive for smallholder farmers to adopt high international requirements. Educational levels, information asymmetry and the significant size of domestic/regional markets also contribute to the fact that international norms remain an extremely abstract concept for smallholder farmers.

In relation to spices in particular, smallholders' compliance with international requirements is even more difficult, because of the relevance of appropriate handling during the 'first mile', which involves drying, other processing activities and post-harvest transport. On average, post-harvest loss is 25–30% throughout the entire supply chain. The largest share is borne by smallholder farmers during the 'first mile'. Traditional drying methods, in which the product is spread out in the sun, are a source of contamination by foreign matter such as dirt and dust, as well as subject to infestation by insects and rodents. Quality gets further distorted as (insufficiently dried) spices are transported over bumpy roads by person, donkey or truck, leading to product waste, development of mold and loss of oil content. In addition, inadequate post-harvest management and drying often lead to excessive aflatoxin levels due to mold development, resulting in higher rejection rates of produce.



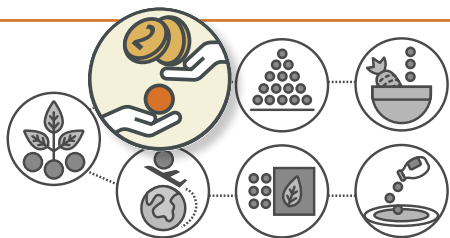
Spice yields are low, as cultivation practices are based on traditional knowledge that has been transferred from generation to generation. Smallholder farmers rarely use farming tools or inputs such as pesticides, fertilizers and improved seeds. Moreover, there is a lack of access to electricity and irrigation. The production system is mostly based on rain-fed agriculture. At the same time, farmers' planning is often inadequate, and they do not allocate suitable land for the cultivation of spices.

In most cases, smallholders are poor and have low levels of education. As a result, their negotiation power is limited and further brought down by a lack of appropriate storage capacity and limited access to finance. Moreover, there has historically been little investment by the public sector in spice value chains; instead, it has tended to focus on the development of staple crops and cash crops such as coffee, pulses and oilseeds, which have a higher foreign exchange earning capacity. Moreover, there not enough extension officers available to improve the agricultural practices of smallholder farmers and connect them to inputs. However, there have been recent positive developments, with both the Government of Ethiopia (GoE) and farmers' unions increasingly recognizing the potential of the spices sector. The well-established coffee production is taken as an example of a supply chain that is well-organized and supported by effective public–private cooperation.

Opportunities

Ethiopia has extensive experience in spice production. There is high availability of land with appropriate climate, water resources and soils for spice cultivation. Moreover, there is a conducive investment policy that promotes foreign direct investments by means of income tax exemption, import duty exemption for machinery and equipment, and carried forward losses allowance. Given these opportunities, commercial farming of spices has an untapped potential in Ethiopia.

In terms of demography, the Ethiopian population (112 million) is very young (93% are under 55 years of age). Therefore, Ethiopia has enough human resources to compete with world leaders of spice production such as India and Vietnam.



LOCAL TRADE

General

Smallholders heavily depend on local collectors, village traders and *woreda* (district) merchants for the marketing of their products. Smallholders who live in the vicinity of villages also bring their produce to rural markets. For the domestic trading channel, village traders and *woreda* merchants make use of larger-scale markets, mainly in Addis Ababa, Adama, Metema and Dire Dawa. The export-oriented trade channel is dominated by wholesale traders, who have strong capacity and networks with local traders. There can be up to six consecutive intermediaries between a smallholder farmer and the trader who markets the spices to end-consumers in Ethiopia or overseas.

Challenges

Transaction costs in local trade are high due to the many intermediaries and the absence of a modern market system and harmonized rules. In addition to a large

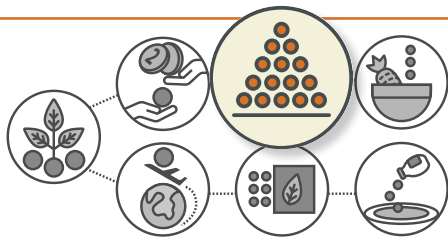
number of consecutive intermediaries, smallholders sell small quantities, often only a few kilograms, to local collectors and village traders. Moreover, as with smallholders, small-scale traders rarely have access to appropriate storage facilities and packaging materials, and may resort to malpractices such as adulteration with low value materials. Where preliminary washing is performed by local collectors and village traders, the quality of water is often poor, and the drying is not done properly, so washing does more harm than good.

The Ethiopian spice sector is affected by weak infrastructure in the main spice production areas in SNNPR, Oromia and other regions. Feeder roads are often limited or in bad shape, leading to high transportation costs.

Opportunities

Although the spices market has not reached a developed level of efficiency, other sectors, particularly the coffee sector, are already very efficient. These sectors could serve as an example for the spice sector. Changes in the preliminary washing, drying and processing practices could be relatively easily made once traders and smallholders become convinced that is the way forward. Moreover, working with smallholders in the coffee belt would ease the adoption of improved post-harvest management even further and enable the use of infrastructure already in place for these cash crops. The GoE could also use proven value chain management approaches of, for example, the coffee sector.





LOCAL PROCESSING

General

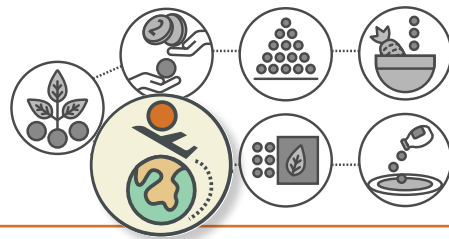
Around 30 companies are involved in the processing of spices. Brundo International, Estub Baltina, Nati Spice, Fasika Baltina and Spices, Befrekot Baltina, Selam Baltina, YSO and Horizon are some of the most prominent players. The best-known blended product is *berbere*, a mix of chili peppers with cardamom and 21 other spices. Spices (blends) are packed in plastic sachets of different sizes for the local and international market. Packaging for the local market is usually unbranded, although some branding has been used in recent years.

Challenges

Usually, grading, cleaning, drying, grinding and packaging are done under poor conditions, and mostly manually. Another challenge concerns the transition towards organic production and certification: while farmers often already grow their crops in an organic way, in many cases the same equipment is used for the processing of 'general' crops and organic crops. This is not allowed according to organic certification requirements and therefore leads to crops not qualifying for certification.

Opportunities

Processing companies are increasingly using state-of-the-art equipment for the sorting, drying, grinding and packaging of spices. Although many operations are still performed manually, this will change towards an automated processing line. Companies including Brundo International, YSO and Fasika Baltina and Spices are currently implementing an automated processing line. This will improve, among other things, efficiency and hygiene, which are needed to align with Western market requirements.



INTERNATIONAL TRADE

General

While a large number of small traders serve the domestic market, a limited number of financially strong exporters are supplying the international market. YSO, Bebeke, Nati and Fasika are among the most important exporters. The main international spice trading centers are Rotterdam, London and Hamburg in Europe, and Mundra, Mumbai and Kattupalli ports in India. Other important hubs are Indonesia, Saudi Arabia and the United Arab Emirates. Products traded in smaller quantities, or according to special specifications with respect to origin and grade, are imported directly by agents, international brokers and trade houses. There is active inter-trade among trade houses and international brokers.

In the case of exports from Ethiopia, products are audited on several parameters, such as color, weight, size, purity, moisture and container conditions, mostly at warehouses and ports (either departure or entry). In many cases, a check is carried out for contaminants, such as aflatoxin. Several public authorities, including the Ethiopian Food and Drug Administration (EFDA), are responsible for regulating, inspecting and testing food products deemed for export. However, many international buyers and exporters prefer the services of private inspection companies, who often have better equipment, skilled staff and are more efficient.



Challenges

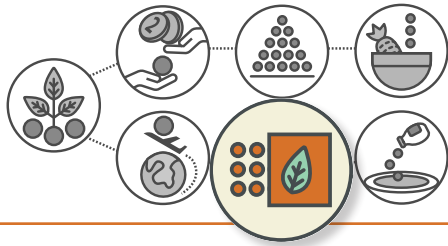
The high transaction costs in local trade results in high local prices for spices, which are regularly on or above par with world market levels. Wholesale traders who cater to the export market often experience great difficulties with sourcing under these conditions, and often resort to marketing their stocks on the local market instead of the international market. This leads to incidences of contract defaults. Moreover, when global price levels increase, contract defaults become more likely, since local farmers or traders are inclined to choose a better local price than the one in their contract with the importer. Although no statistics are available, industry experts believe that Ethiopian contract defaults significantly exceed the international average of 25%.

Although there are audits at warehouses and ports, the most common reason for rejection of Ethiopian exports by the EU is the inability to meet European product quality standards. Food safety and product quality are top priorities in the EU, and spice imports need to comply with regulatory and voluntary standards. The European Spice Association (ESA) published a 'Quality Minima Document' for most traded spices that is in line with ISO 22000 requirements and EU food legislation. This document led to the formation of national spice associations and is therefore key for most players in the EU. Spice imports can be subject to official controls. Products that are not considered safe will be denied access to the EU. Common reasons for rejection are the presence of Salmonella, aflatoxin and artificial colorants. In many cases, there is a lack of knowledge of the regulatory requirements at the ports of departure.

Quality audits are often only performed downstream the value chain upon exporting, which increases the chances of rejection. Many experts and stakeholders emphasize the importance of introducing more quality assurance and testing at earlier stages of the value chain, preferably at the farm gate or local collection centers. Another challenge is the difficulty of avoiding a conflict of interest for inspection companies, whose income depends mainly on exporters who do not wish to see their cargo rejected. While international standards advise inspections to be carried out by three different companies, in practice it is usually only done by one company, increasing their vulnerability to pressure from the exporter.



Ethiopia is geographically better located in relation to Europe than the major spice-producing countries, such as China, India, Indonesia and Vietnam. This could potentially provide a competitive advantage due to lower international logistics costs. However, it also depends on the costs of transport from farm gate to the exporter in Addis Ababa, and the cost of exporting a container from Addis Ababa to Djibouti, the main port of export in the region. These local costs tend to be higher due to relatively underdeveloped infrastructure. At the moment, the transport cost advantage is therefore limited, but with ongoing public investments in infrastructure the potential advantage is expected to grow. Many large processing companies are increasingly targeting Western markets, for example in their marketing strategies and branding of products.



INTERNATIONAL PROCESSING

General

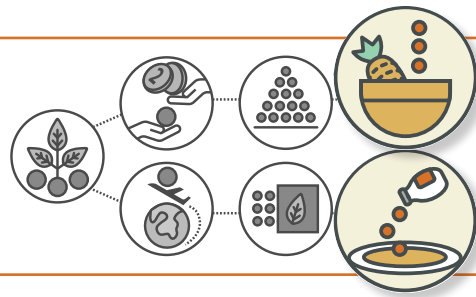
The role of spice blenders in the EU, USA and Japan include activities such as sourcing, cleaning, treating against bacteria and spores, grinding, storing, blending and selling. Spices are mostly imported whole, and McCormick, Fuchs, van Hees, Kraft Heinz and Sabater are prominent international players. Large-scale grinding and crushing is increasingly taking place in producing countries in Asia (India, Vietnam, China), because of low labor costs and improved processing facilities and detection techniques.

Challenges

It is a challenge to establish and develop large-scale processing of spices in Ethiopia. To achieve this, there is need for further growth in scale and production, as well as creating the right conditions for investors. This includes infrastructure development, ease of doing business, as well as access to finance.

Opportunities

There are currently many European companies active in the Ethiopian coffee market. Some of these companies are now aiming to process coffee in the countries of origin. For example, the Dutch coffee producer and trader Moyee Coffee introduced the FairChain principle that focuses on shifting the value chain back to its roots: Ethiopia. This principle can also be applied to the spices sector.



FINAL USE

Final users in the export channel consist of:

1. Food processing industries (55–60%), which integrate spices in food and beverages manufactured for customers;
2. The retail sector (35–40%), where consumers purchase powder mixtures, fresh/dried spices, essential oils and oleoresins of spices for home consumption;
3. The catering sector (10–15%), comprising restaurants, bakeries and confectioneries that purchase spices for their preparations.

Final users in the domestic channel consist of:

1. Food processing industries (5–10%);
2. The retail sector (80–90%);
3. The catering sector (5–10%).



SUPPLY CHAIN MODELS

The path spices take before reaching their final export destination depends on the exporter and supply chain model used. These models have a varying impact on the quality and traceability of the spices, as well as the price and margins of smallholder farmers. The main supply chain models used in Ethiopia include:



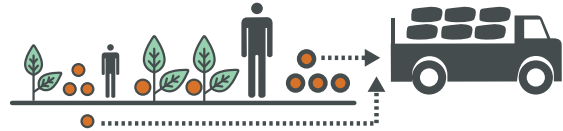
I. Processors/exporters buying wholesale from the local market.

Some of the exporting companies in Ethiopia buy their spices locally at spice markets. Using this model, an exporter has relatively lower personnel costs in terms of transport and managing farmers. However, as they are buying from traders, prices tend to be higher due to the trader's margin, and traceability and quality are challenges. Exporters usually source only first-grade spices, but when buying wholesale at the market it is not uncommon that 20–50% is actually of a lower grade and quality.



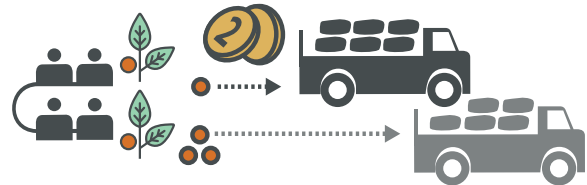
II. Processors/exporters buying directly from farmers.

Some companies source their spices directly from smallholder farmers, with or without contracts. One of the approaches used is supervising the harvests of smallholder farmers. The companies send harvesting managers to the farmers, who train and oversee the laborers who do the harvesting, ensuring that the right harvesting, washing and drying practices are used. Moreover, they ensure only first-grade spices are collected. When using this approach, companies usually pay the farmers about double the normal market price. This approach results in higher personnel and sourcing prices, but also leads to high quality and traceability. It also minimizes post-harvest losses.



III. Commercial farms exporting and sourcing additional spices from out-grower farmers.

Some large commercial farms export their produce directly. Moreover, in order to increase their scale, they usually serve as a nucleus farm to out-grower farmers in the vicinity from whom they source spices and for whom they provide training and inputs. This is done both with and without contracts. The benefits of such a scheme are better quality control and post-harvest management, and relatively lower prices, as they source directly from the farmers. On the other hand, it can be challenging to manage out-growers effectively, and investment in extension officers is needed to train and support the farmers.



IV. Cooperatives exporting or selling to exporters.

There are cooperatives and cooperative unions that market and/or export spices on behalf of their member farmers. They either export themselves or sell to exporters. Buying from a cooperative is practical in terms of reaching scale. At the same time, prices can be higher due to the cooperative taking a margin. Moreover, the level of quality control depends on the cooperative. Washing and drying usually take place at cooperative collection centers. The beauty of this model is that the cooperatives are owned by the farmers, who receive a share of the profits made through exports.

3. BUSINESS OPPORTUNITIES



TURMERIC

GENERAL INFORMATION AND ETHIOPIAN PRODUCTION

Turmeric, or *Curcuma longa*, is part of the ginger family. The plant is native to India and Southeast Asia, and requires a considerable amount of rainfall and a temperature between 20°C and 30°C. The rhizomes (roots) are used fresh or cooked and dried, after which they are ground into powder. The powder is often used in curries, soups and stews. Turmeric is believed by many to have health benefits and is considered a 'superfood' in Western societies. Moreover, turmeric is sometimes used as an alternative to salt.³⁵ The Alleppey type is predominantly produced in Ethiopia. Traditionally, this type is appreciated in Africa, India and North America, while Europe prefers the lighter Madras type. The Alleppey variety has a curcumin content of around 5%, which is superior to Madras (2%), and its color is much darker than the bright yellow Madras type.

Post-harvest curing/cooking is necessary to bring out the color and curcumin. However, in many cases, the turmeric is overcooked in Ethiopia, resulting in a dark brown kernel. As a result, this turmeric is not suitable for export to Europe, where the kernel is required to be yellow. An alternative processing method comprises slicing and drying (without cooking). Using this method, the drying period can be drastically reduced (4–7 days instead of 14–21 days), resulting in a lower probability of aflatoxin contamination. Also, the slicing method reduces labor intensity and the use of firewood. However, this method requires a major investment in machinery.

GLOBAL PRODUCTION

In 2017, the global production of turmeric amounted to 1.1 million MT per year. India dominates global production and contributes 78% to the total production.³⁶ Other important producers are China, Indonesia, Myanmar, Nigeria and Bangladesh. More recent data were not available at the time of writing this report. The global production of turmeric is projected to be approximately 1.7 million MT in 2027.³⁷

GLOBAL CONSUMPTION

The increasing consumption of food supplements is one of the key factors that has a positive impact on the turmeric market, as people consume curcumin to treat various health issues, such as heart and brain health problems, stress and anxiety, and inflammatory conditions. Worldwide and also in Europe, the consumption of turmeric is forecasted to increase by more than 10% per year in the next five years, largely driven by its associated health benefits.

TRADE

India is the global leader in value-added products of turmeric and exports. Other major exporters are China, Myanmar and Indonesia (75% of total turmeric exports), which includes re-export from India. Major importing countries of turmeric in 2017 were the USA, India, Iran, Germany and the UK. These countries together account for 40% of the world's imports, mainly supplied by Asian countries.³⁸

PRICE DEVELOPMENT

In the local market in Ethiopia, the price per kg of dried turmeric ranges from US\$1.5 to US\$3. Ground turmeric has a price of range of US\$7.5 to US\$10. From the start of 2016 until the end of 2018, the international price of turmeric decreased by 16%³⁹ (based on reported futures prices on the National Commodity and Derivatives Exchange in India).

India is the main driver of the global turmeric market, as it is both the largest producer and consumer. A decrease or increase of demand in India is therefore directly felt on international markets and is reflected in the price.⁴⁰ At the moment, India has intensified domestic production, leading to reduced demand for imports and a decrease in the international price. However, global turmeric prices are highly volatile and usually follow a seasonal pattern in relation to the crop cycle in India. Fresh arrivals of the crop in February attain a peak during April, which results in lower prices from February to June. Prices typically trend upwards from July until harvest commences in February. The seasonal pattern of turmeric prices provides a good opportunity for Ethiopian turmeric. The crop is harvested from December to April⁴¹ and can benefit from attractive prices in December and January.

³⁵ CBI spices and herbs 2

³⁶ <http://agritech.tnau.ac.in/banking/PDF/Tumeric.pdf>

³⁷ Statista.com

³⁸ Trade Map

³⁹ Investing.com

⁴⁰ Thehindubusinessline.com

⁴¹ Karvycommodities.com

ETHIOPIAN EXPORTS

Before 1972, Ethiopia was a turmeric-importing country, but because of the suitability of its southern humid regions, turmeric is now widely grown in Ethiopia and the country has become an exporter. Turmeric is predominantly produced on the lowlands of SNNPR and Gambela, due to the soil characteristics, the right amount of rainfall, the interest of the farmers, and the right altitude. From 2014 to 2015, the value of exported turmeric from Ethiopia almost doubled. This is mainly explained by the fact that, following the impact that disease had on ginger crops in 2014, farmers shifted to the production of turmeric. By 2017, Ethiopia had become the fifth leading country in terms of turmeric export value. Based on preliminary data from 2018 and 2019, this trend is not expected to decline.⁴² However, farmers prefer the cultivation of ginger, since it has a higher local market price and is deeply rooted in the rural culture. Most Ethiopian turmeric exports find their way to India (76% of exported value). Both ground and polished turmeric fingers are suitable for export.

THE OPPORTUNITY

Ethiopian turmeric has the potential for a smallholder-driven investment model, as smallholder farmers have cultivation experience and there is a strong internal market for lower-grade products. Furthermore, soil and climate conditions in SNNPR are excellent, and transport from the turmeric belt to the seaport of Djibouti is relatively efficient. In addition, Ethiopian exporters have experience of exporting to India, the Middle East and other African countries.

In 2018, total European imports of turmeric reached 24,000 MT. From 2017 to 2018, imports increased by 13% in volume and by 5% in value, reaching a total value of around US\$55 million. In 2018, 80% of total European imports were sourced directly from emerging economies.⁴³ Despite the European preference for the lighter Madras type, as noted above, interest in the Ethiopian turmeric variety is emerging and expected to develop further. Turmeric is often imported in bulk in Europe through German and Dutch importers and processors.

As mentioned above, the slicing method has important advantages over the boiling method. However, this requires a substantial investment and a transformation of the traditional farming practices of smallholder farmers. The uptake of the slicing method is therefore still slow.



CHILI

GENERAL INFORMATION AND ETHIOPIAN PRODUCTION

The chili pepper can be divided into fresh chili peppers and dried chili peppers. The former type belongs to the fruits and the latter type belongs to the spices. This report only considers the dry type. Ethiopia has a good climate and soil conditions for chilies. The most commonly grown type is the 'Marako Fana' variety, a pungent long chili of dark red appearance. The local spice blend *berbere* is a mix of Marako Fana chilies with other local grown spices. Also grown are the smaller 'Mitmita' chilies, an even hotter red small bird's eye chili pepper. This chili is locally used for the eponymous blend, which also includes cardamom seeds, cloves and salt. Quality in terms of hygiene is low, due to poor drying and storage. This also increases the probability of aflatoxin contamination. Moreover, due to an accumulated disease complex (fungi, bacterial wilt, nematodes and a virus), there is a current drop in chili production in Ethiopia.⁴⁴ However, the organic pesticide (rapeseed residue) that is being used for the recovery of ginger production can also be used for red chili.

Chilies are commonly used in soups, stews and sauces to increase pungency and to add flavor. The main production areas are the highlands of Amhara, Oromia and SNNPR.

MARAKO FANA PEPPERS



MITMITA PEPPERS



⁴² Trade Map

⁴³ CBI curcuma and CBI spices and herbs

⁴⁴ ESEF/Giftii

GLOBAL PRODUCTION

In 2017, the total production of chilies amounted to 4.1 million MT, corresponding to an average annual growth rate of 3.1% in the period 2013–2018. Over the years, India, China and Thailand have been the most important producers, with a steady share of around 60% of global production. Ethiopia is the world's number three producing country of dried chilies, with a share of 7% of global production in 2018. The production of Ethiopian chili increased from 180,000 MT in 2013 to 290,000 MT in 2018,⁴⁵ although production is expected to have declined in 2018 and 2019 due to the aforementioned impact of disease.

GLOBAL CONSUMPTION

The global and European demand for dried chilies and chili sauces is growing, mainly due to the demand for spicy food in Western cuisine.⁴⁶ As a result, major brands have developed new mixes and sauces containing the pungent chili flavor.

TRADE

Major exporters of dried chilies are India and China (64% and 15% of global exported value in 2019).⁴⁷ Exported volume from India has shown an increasing trend from 2008 onward.⁴⁸ Overall traded value has increased rapidly, with an average annual growth rate of almost 11%.⁴⁹ Major importers are the USA and Thailand (both accounting for 18% of global traded value), and Spain (10% of global traded value).⁵⁰

With respect to Europe, Spain is responsible for 36% of all European imports and is an important supplier of dried chilies to the European market. Other important European traders and re-exporters are The Netherlands and Germany. The Netherlands re-exported 60% of its dried chili imports to other European countries in 2017. European exporters or re-exporters add a lot of value to re-exported chilies by further processing and packaging. The UK is also an important importer, but due to its large Indian community and the popularity of South Asian food in the UK, imported chilies are mostly consumed in the country.

PRICE DEVELOPMENT

In recent years, dried chili prices have not shown major fluctuations.⁵¹ However, temporary shortfalls in supply or demand can have a major impact on prices. Price developments usually do not have a significant impact on demand, because they are usually only a minor ingredient in a final food product and contribute little to total cost: demand and imports of dried chilies are 'price inelastic'. On the local market, the cost of 1 kg of dried chilies ranges from US\$2 to US\$4. The export price of organically produced and processed spices can be twice as much.

ETHIOPIAN EXPORTS

In 2017, chilies were the most widely-produced spice in Ethiopia, with production amounting to 294,000 MT. However, production dropped in recent years, and exports declined drastically. Ethiopia predominantly exports chilies in the form of *berbere* blend or chili mix to Ethiopians living abroad. There are several companies specializing in the export of such blends to the USA, UK and The Netherlands.

THE OPPORTUNITY

Chili prices have proven to be very stable over the past decade and there is a huge domestic market for chili, which facilitates continued growth for the sector. In the long run, Ethiopian chilies have the potential for a smallholder-driven investment model. Smallholder farmers have the required experience in chili cultivation, there is a strong internal market for lower-grade products, and soil and climate conditions in SNNPR, Amhara and Oromia are excellent. In terms of exports, there is still room for expanding exports of *berbere* and chili blends to Ethiopian diaspora and Ethiopian restaurants all over the world. Moreover, while European processors are currently mainly doing the processing of spices and herbs, chilies are an example of a spice that is predominantly being processed in Ethiopia. Building on this well-established experience, investors and Ethiopian producers could venture into designing new red chili blends tailored to specific markets.

⁴⁵ FAOSTAT

⁴⁶ CBI dried chillies

⁴⁷ Trade Map

⁴⁸ Trade Map and Kumar, S. *Chilli (Capsicum annum L.) breeding in India: An overview* (2014)

⁴⁹ Trade Map

⁵⁰ Trade Map

⁵¹ Indianspices.com



GINGER

GENERAL INFORMATION AND ETHIOPIAN PRODUCTION

Ginger is often associated with Asian cooking, and is commonly used in stir-fries, stews and curries. It can also be used in beverages, baked goods, marinades and on fruit and vegetables. The demand for ginger is increasing, especially in Europe. This is stimulated by consumers searching for healthier ingredients, which is one of the most important trends in Europe. Ginger is considered a 'superfood' and as a replacement for sugar and synthetic additives (see section 1). The Ethiopian variety is fibrous, and compared to Asian ginger is more pungent and has a higher oil content (8% compared to 6%). The taste is similar to the Nigerian type and is well accepted in Western cuisine. Until 2013, ginger was produced throughout the whole country, primarily in the lowlands of SNNPR, Oromia and Gambela, and was Ethiopia's most exported spice, primarily to neighboring countries. Due to a disease complex of fungi, bacterial wilt and nematodes, which spread across Ethiopia in 2014, production was decimated, at which point farmers replaced ginger with turmeric. However, after a total absence of ginger production for a few years, there are now signs of a recovery. Farmers are reintroducing ginger on an experimental basis and several pesticides are being tested to prevent the disease.

Recently, an organic pesticide based on rapeseed (*Brassicae* type) residue was developed that is preferred over chemical pesticides for several reasons (costs, sustainability of the soil, premium on organic production). However, since there are patenting and licensing procedures involved, the pesticide is not expected to reach smallholder farmers before 2021. Farmers throughout the country are ready to reintroduce ginger, although they are still careful and waiting for guidance from buyers and extension officers.

GLOBAL PRODUCTION

In terms of volume, ginger takes second place worldwide in terms of spice production (after chili), with a share of 23% in 2017.⁵² The share of ginger to the world's total spice production has been stable over the past five years, but in absolute terms, global production increased from 2.4 million MT in 2013 to over 2.7 million MT in 2018 (with the peak of production in 2017: 2.9 MT). India and China are the main producing countries, with production volume shares of 35% and 18%, respectively. From 2013 onwards, production shifted towards the Far East, as production by important African countries such as Nigeria and Cameroon decreased.⁵³

GLOBAL CONSUMPTION

The top producing countries are also the top consuming countries. In 2015, India, Indonesia, Nepal, Nigeria and China accounted for approximately 65% of global ginger consumption. Global consumption of ginger is increasing and is expected to grow significantly until at least 2025. In Europe, the demand for ginger is increasing steadily. In the winter of 2016–2017, European demand for ginger peaked due to the colder weather,⁵⁴ while subsequent years also show a steady increase in European demand.

TRADE

Based on traded value, 97% of the ginger trade comprises whole ginger. Important exporters are China and Thailand (56% and 16% of traded value, respectively, in 2019). In the past two years, The Netherlands has overtaken Thailand in the trade of ginger: over 13% of global ginger export is traded by The Netherlands. Since 91% of the imported volume by The Netherlands is exported, the country plays an important role as a trade hub for intra-European trade. Peru takes the fourth position in exported value, accounting for 5% of global traded value.⁵⁵

Other important European importers of ginger are the UK and Germany, both of which have significantly increased their traded volumes in recent years. More than 90% of imports from the UK, Germany and The Netherlands originate from emerging economies. In 2017, the most important supplier of ginger to Europe was Peru.⁵⁶

PRICE DEVELOPMENT

The ginger price shows a declining trend. Over the period 2014–2018, the price decreased by 5% annually.⁵⁷ Global market prices for ginger are strongly influenced by the largest producers. However, international traders have recently shifted to more expensive ginger suppliers in Peru and Brazil.⁵⁸ They prefer these suppliers because of their higher quality.⁵⁹ Also, prices fluctuate due to the harvesting season in Asia (November to January). Since ginger has a higher local market price in Ethiopia and is less labor intense than turmeric production, current turmeric farmers will take any opportunity to revert production back to ginger.

⁵² FAOSTAT

⁵³ FAOSTAT

⁵⁴ CBI ginger & FreshPlaza

⁵⁵ Trade Map

⁵⁶ CBI ginger

⁵⁷ Indianspices.com

⁵⁸ FreshPlaza

⁵⁹ CBI ginger

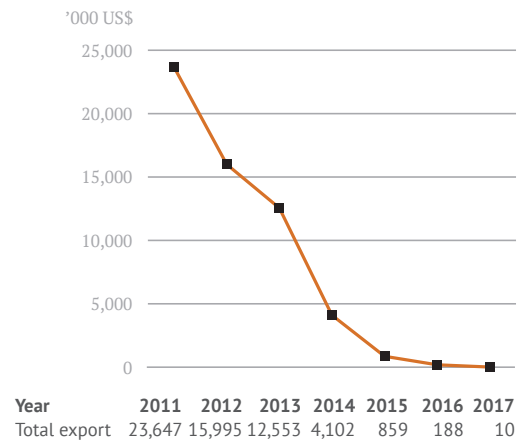
ETHIOPIAN EXPORTS

In 2013, ginger was the most cultivated spice in Ethiopia, but ginger production declined dramatically from 2014 onwards due to the aforementioned impact of disease. Exports of ginger from Ethiopia declined from more than US\$23 million in 2011, to an almost negligible amount of US\$10,000 in 2017.⁶⁰ Currently, Ethiopian traders are importing ginger from Tanzania and Nigeria.

THE OPPORTUNITY

As noted above, current ginger production is extremely low in the aftermath of the disease complex that decimated production in 2014. Nevertheless, all stakeholders are eager and ready to expand production. Moreover, recent Ethiopian research in organic pesticides is promising, and some companies have already asked their out-growers to start planting ginger again. Once production has recovered, Ethiopia has the potential to become one of the main players on the world market of high-quality (organic) ginger.

FIGURE 12: EXPORT VALUE OF ETHIOPIAN GINGER, 2011-2017



⁶⁰ Trade Map





BLACK PEPPER

GENERAL INFORMATION AND ETHIOPIAN PRODUCTION

Black pepper, the 'King of Spice', was introduced to Ethiopia in the early 1980s. It is often intercropped with coffee trees. Black pepper production is low in Ethiopia. It is grown in SNNPR and Oromia, for example on the Bebeke, Green Coffee Industry and Nati coffee plantations. In Ethiopia, the Panniyur variety is grown, which has a floral taste and high piperine content (>7%). It is possible to cultivate black pepper successfully at a wide range of altitudes, from 1,500 m to the lowlands of Southern Ethiopia, and where rainfall is high throughout the year. Black pepper is used in many dishes in almost all countries across the world. It can also be used as preservative. In Ethiopia, the productivity of black pepper ranges from 1,600 kg to 1,900 kg per hectare.

GLOBAL PRODUCTION

In 2018, global pepper production amounted to 732,000 MT, up from 692,000 MT the previous year.⁶¹ Pepper production takes place mainly in Asia, which accounts for almost 75% of global production.⁶² Over the past 20 years, significant shifts have occurred in the prominence of producing countries, as a result of harvest quality, world market prices, and demand and policies in production countries. Vietnam established itself as the world's largest coffee grower in the 1980s and 1990s. When coffee prices came under pressure, the country intercropped coffee with black pepper. Consequently, Vietnam became the leading cultivator of black pepper, producing 263,000 MT in 2018. In Vietnam, the production price of black pepper increased by 10% and the export price decreased by almost 25%. This can partly be explained by intensified testing for pesticide residue in Europe, and European buyers opting-out due to excessive pesticide residue in the black pepper. This is currently causing major problems for Vietnamese pepper growers. Other important producers are India, Indonesia and Brazil.⁶³ About 80% of the organic pepper traded on world markets originates from Brazil, and is of a particularly high quality.⁶⁴

GLOBAL CONSUMPTION

From 2013 onwards, annual global consumption of black pepper grew at a CAGR of 2.4%.⁶⁵ Vietnam, India and the USA are currently the largest consumers of black pepper, with a combined share of 41% of total black pepper consumption.⁶⁶ Driven by increasing demand for pepper worldwide, the market is expected to continue to grow over the period 2018–2025. However, market performance is forecasted to decelerate, expanding with an anticipated annual growth of 1.2% for this period, which is projected to bring the market volume to 840,000 MT by the end of 2025.⁶⁷

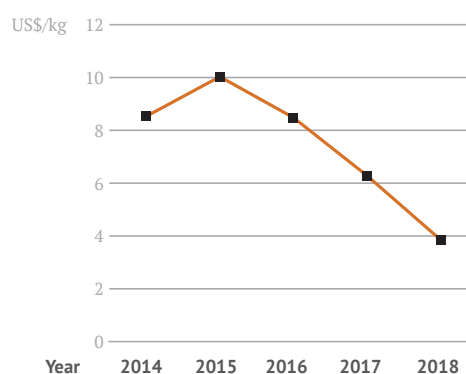
TRADE

Major exporters are Vietnam, Brazil, Indonesia and India, accounting for 68% of total black pepper trade in 2017. Major importers are USA, Germany, India, UK, France and The Netherlands, accounting for 45% of the total exported black pepper value. This proportion has been consistent over the past five years,⁶⁸ indicating a strong likelihood of a stable market for black pepper in these countries in the coming years.

PRICE DEVELOPMENT

In recent years, the spot price for black pepper on the Indian market decreased from US\$10.38 per kg to US\$3.86 per kg. This was mostly due to increasing global supply.⁶⁹ However, the available supplies of pepper that comply with European food safety requirements are limited. This is largely the result of growing problems with the use of pesticides in pepper, especially in Vietnam. The price of black pepper from Vietnam is currently around US\$2.2 per kg. Pepper that does comply with the requirement of low levels of pesticide residue may attract a price premium.⁷⁰

FIGURE 13: BLACK PEPPER PRICE, 2014–2018



⁶¹ CBI pepper

⁶² FAOSTAT

⁶³ FAOSTAT

⁶⁴ Agroberichten Buitenland

⁶⁵ CBI pepper

⁶⁶ <https://www.globaltrademag.com/global-pepper-market-is-expected-to-reach-840k-tonnes-by-2025/>

⁶⁷ <https://www.globaltrademag.com/global-pepper-market-is-expected-to-reach-840k-tonnes-by-2025/>

⁶⁸ Trade Map

⁶⁹ Agronieuws Buitenland

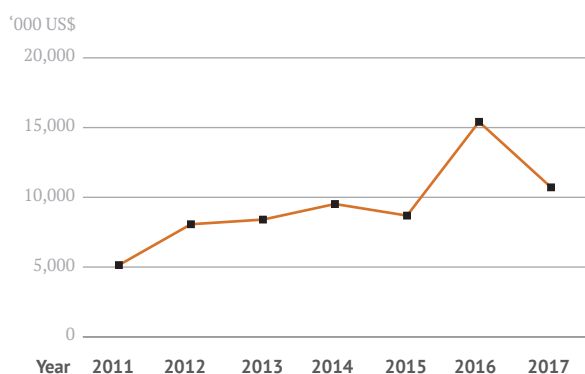
⁷⁰ CBI pepper

European exporters add significant value to re-exported and processed products. Therefore, the average price of crushed/ground pepper re-exported from Europe is 38% higher than the price of imported pepper. Also, there is a substantial fee of 40% on the local market price of organic black pepper. Currently, no organic licenses have been awarded for black pepper production, since production cannot be tracked fully. Concerning the export of black pepper from Ethiopia, local traders are inclined to disregard the international market, since the local market price is higher than the international price.

ETHIOPIAN EXPORTS

The production and export of Ethiopian black pepper has shown a steady increase in recent years. Over a period of seven years, the value of the black pepper exports doubled from US\$5 million to over US\$10 million. The largest importer of Ethiopian black pepper is Sudan, which accounts for almost 75% of the total black pepper export value. Other important importers are Asian countries. However, since the international price of black pepper dropped, there has been a decrease in black pepper exports.

FIGURE 14: TOTAL ETHIOPIAN EXPORT OF BLACK PEPPER, 2011–2017



Ethiopia has the potential for a coffee farm-driven investment model in line with Vietnam. As a major coffee exporter, the country has numerous highly professional coffee farms with good cultivation and export experience. Black pepper could be intercropped with coffee trees, as both plants require comparable agro-ecological characteristics. This strategy has already been undertaken on a small scale.

As cultivation of black pepper is relatively new and black pepper vines need four years to mature, extensive practical research should be undertaken by potential investors on soil and climate conditions.

THE OPPORTUNITY

In 2018, European black pepper consumption amounted to 121,000 MT (2019 estimate is around 127,000 MT and has grown by an annual rate of 1.6% over the period 2013–2018⁷¹). Over 63% of European imports originated from emerging economies in 2017.⁷² This share has been stable over recent years and is not expected to change. Leading importers are the UK, Germany and The Netherlands, which have a higher share of imports from emerging economies. The French market for black pepper is still growing, and the share of imports from emerging economies is firmly above average (71%). Some relatively small importing countries are growing rapidly and have an increasing market potential for pepper from emerging economies. These countries include Romania (growing by an annual rate of 10% over the past five years) and Greece (growing by an annual rate of 13% over the past five years).

The limited supply of black pepper meeting EU requirements may be an opportunity for Ethiopia, as it appears that significantly less pesticide is used in Ethiopia than in, for example, Vietnam. Building on this situation, expanding and formalizing organic production to reach the EU market may be an interesting case for Ethiopian producers and investors. Moreover, as already stated above, coffee trees are very suitable for intercropping with black pepper. Since coffee farms are already relatively efficient and modern, black pepper production could build on this. In addition, coffee growers are usually large producers compared to farmers in other spice-growing areas, so it would be relatively easy to reach scale and obtain necessary certifications.

OTHER IMPORTANT INFORMATION

As black pepper does not grow in Europe, all European supply needs to be imported. European exporters or re-exporters add a lot of value to re-exported and processed pepper by further processing and packaging. Currently, processing and heat treatments, such as steam sterilization, are still mainly done by European processors. However, these processes are increasingly being performed in the countries of origin. Heat treatment, in particular, has become an important buyer requirement.

⁷¹ CBI pepper

⁷² CBI pepper



BLACK CUMIN SEEDS

GENERAL INFORMATION AND ETHIOPIAN PRODUCTION

In Ethiopia, black cumin (*Nigella sativa*) serves as flavor in bread and sauces, as well as one of the ingredients in the Ethiopian *berbere* spice mix. It imparts an earthy, warming and aromatic character to food, making it a staple in certain stews and soups, as well as spiced gravies such as curry and chili. Black cumin is cultivated in Amhara, Oromia and SNNPR at altitudes ranging from 1,500 and 2,500 meters, and is often intercropped with cereals.

Black cumin is predominantly consumed in India and the Far East, but also features in Polish cuisine. The crop is not popular in Western markets, where white *Cuminum cyminum* is preferred. Black cumin seeds are considered 'superfoods', as they are believed to be anti-bacterial, digestion-friendly, inflammation-reducing and immunity-boosting.⁷³ Black cumin oil is used for the treatment of diabetes and cancer, among other things, and is increasingly used as an alternative to salt.⁷⁴

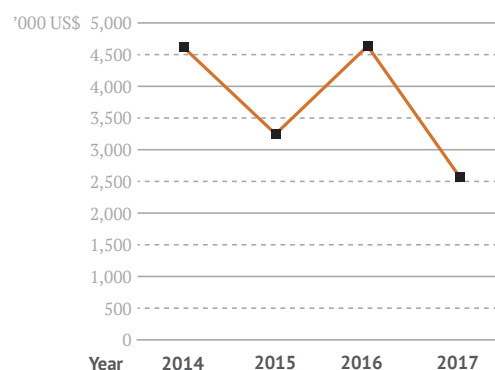
GLOBAL PRODUCTION, CONSUMPTION, TRADE AND PRICE DEVELOPMENT

Despite a decrease in traded volumes, the global trade value of cumin seeds (all species) increased from 2015 to 2019, with a CAGR of 7.26% due to an increase in export prices. The largest exporting countries of cumin seeds are India and Syria (68% and 16% of world's total exported value, respectively). Asia contributed 89% of total exports, but some European countries also export cumin seeds (exports from The Netherlands, Spain and the UK amount to a total of 3% of the global export value). Major importers comprise the USA (12%), Bangladesh (10%) and Egypt (6%). In particular, the imported value from Bangladesh (+60%) and Egypt (+21%) increased substantially over the past four years.⁷⁵

ETHIOPIAN EXPORTS

One of the main challenges of the black cumin market is the purity of the spice. The European market requires 99% purity, whereas the purity of Ethiopian black cumin is generally around 97%.⁷⁶ Exports have therefore remained low. Existing exports of cumin seeds from Ethiopia comprise whole seeds; only a negligible amount of crushed or ground seeds are exported. From 2014 onwards, the export value of cumin seeds fluctuated, with an overall decreasing trend (see Figure 15). The main reason is the declining imports by Middle East countries such as Yemen, Pakistan, United Arab Emirates and Turkey,⁷⁷ and an increase in the domestic price relative to the international price.

FIGURE 15: EXPORT VALUE OF BLACK CUMIN SEEDS, 2014–2017⁷⁸



THE OPPORTUNITY

Due to its extensive use by Islamic communities, the main export destinations for black cumin are North Africa and the Middle East. Although international prices are not attractive at the moment, this may change and provide opportunity to producers. Also, with local processing and value addition, there may be opportunities in the extraction of oil from black cumin. Demand for black cumin seed oil from the medicinal, cosmetic and personal care markets is expected to increase further in the coming years, providing potential export opportunities to, for example, the USA and Germany.



⁷³ Wellnesstoday.com

⁷⁴ CBI spices and herbs 2

⁷⁵ Trade Map

⁷⁶ Local expert

⁷⁷ Trade Map

⁷⁸ Investing.com



CORIANDER SEEDS

GENERAL INFORMATION AND ETHIOPIAN PRODUCTION

The dry fruits of the coriander plant are known as coriander seeds. Large-fruited types are grown mainly by tropical and subtropical countries and contain low oil content. They are preferred for grinding and blending purposes in the spice trade. Types with smaller fruit are produced in temperate regions and usually have higher oil content. These are preferred as raw materials for the preparation of essential oil. Coriander seed is a spice used in *garam masala* (a popular Indian blend of spices) and Indian curries. Outside of Asia, coriander seed is used widely in the process for pickling vegetables. The spice is produced in the highlands of Amhara and Oromia regions, although reliable production figures are missing. Ethiopian coriander seeds are reportedly of a high quality.⁷⁹

GLOBAL PRODUCTION, CONSUMPTION AND TRADE

The main producer of coriander seeds is India, which also consumes most of its production. Moreover, India is the world's largest exporter (27%) and second largest importer (12%) of coriander seeds. Other important exporters are Russia (11%), Syria (10%) and Italy (9%). Another major importer is Malaysia, contributing 13% to the total value of imported coriander seeds. World trade decreased by a CAGR of 8.62% over the period 2015–2019. Existing trade mainly takes place within Asia and Europe.

European imports of coriander seeds increased between 2015 and 2017 by 1.75% annually in volume and 3% in value. In 2017, 45% of total European imports of coriander seeds originated from emerging economies, including India. Intertrading within Europe accounted for 40% of total coriander imports to the EU in 2017. The remaining share (15%) originated from countries other than European or emerging economies.

Major European importers are the UK and Germany, due to the popularity of Indian cuisine. These countries are responsible for almost 50% of total European imports, of which a substantial share originates from emerging economies (71% in the UK, 30% in Germany).

PRICE DEVELOPMENT

As India is the leading consumer and producer of coriander seeds, its market is highly influential on the market price of coriander seeds. Over the past five years, the price has decreased. The main reason for lower prices was higher supply of coriander seeds by India due to record production numbers in 2016 to 2018, coupled with higher supply from Russia.⁸⁰

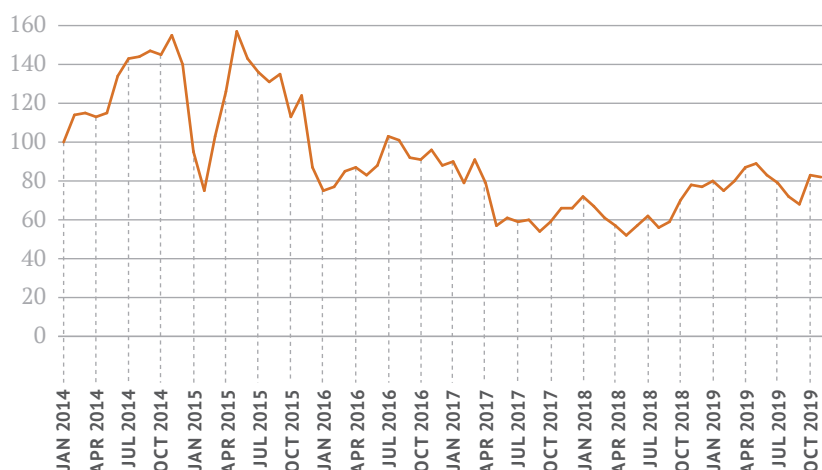
ETHIOPIAN EXPORTS

Ethiopia is a net exporter of coriander seeds, but the current amount of exports is low. Ethiopian exports comprise only whole seeds; there is currently no export of crushed or ground coriander seeds. From 2014 to 2017, the total value of exported coriander seeds declined from US\$3.3 million to US\$360,000.⁸² This is mostly the result of international prices being lower than the local market price. The Ethiopia Coffee and Tea Authority has classified coriander as a crop with export potential.

THE OPPORTUNITY

The Asian market has been stable over the past five years, and the market in Europe is increasing, since Asian food is becoming increasingly popular in Europe. Unlike many other spices, coriander is also produced in Europe, so exporters to the European Union face local competition. Nevertheless, exporters from India and other emerging economies compete in this market successfully.⁸³ Since Ethiopia is geographically closer to Europe than India, export to Europe could be promising. Moreover, Ethiopian coriander seeds are of high quality. This may attract European traders and might even come with a price premium.

FIGURE 16: HISTORICAL DEVELOPMENT OF THE CORIANDER SEEDS FUTURES PRICE (NCDEX), JANUARY 2014–NOVEMBER 2019 (JANUARY 2014 = 100)⁸¹



⁷⁹ Based on interviews conducted by the research team
⁸⁰ https://economictimes.indiatimes.com/articleshow/68854011.cms?from=mdr&utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst

⁸¹ Investing.com

⁸² Trade Map

⁸³ CBI coriander

⁸⁴ Trade Map

⁸⁵ Nepal cardamom.pdf



BLACK CARDAMOM

GENERAL INFORMATION AND ETHIOPIAN PRODUCTION

Cardamom, also known as the 'Queen of Spices', is the world's third most expensive spice (saffron is the most expensive, followed by vanilla) and was introduced to Ethiopia in 1972. After its introduction, multiplication of the plant and evaluation studies were done at different research institutes in the country. Results show that SNNPR, Gambela and Oromia are ideal areas for cultivation. Cardamom plants need a rainfall of 2,000 to 5,000 mm per annum with a uniform distribution and no distinct dry season. In Ethiopia, black cardamom is better known as *kururima*.

GLOBAL PRODUCTION, CONSUMPTION, TRADE AND PRICE DEVELOPMENT

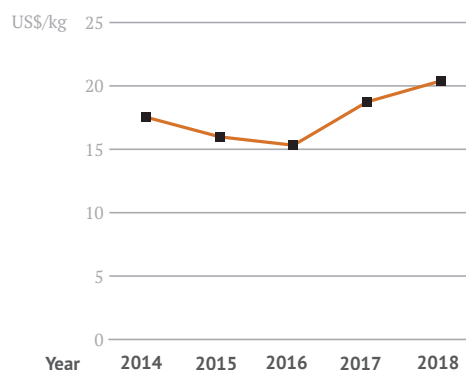
Most of the global trade in cardamom concerns whole cardamom pods; less than 1% of global trade concerns crushed or ground cardamom seeds. Major exporters of cardamom (all species) are Guatemala (58%), India (17%) and Nepal (9%).⁸⁴ Since 2017, India and Nepal have increasingly focused on the export of black cardamom. Nepal, for example, introduced a 10-year black cardamom export strategy in 2017 that centers on improving the black cardamom sector in the country.⁸⁵

Unlike green cardamom, the black species has a smoky aroma and is usually not used in sweet dishes. Black cardamom is increasingly used as an alternative to salt in Western cuisine. In Ethiopian local market places, whole cardamom pods are sold, but exports comprise the seeds only.

Large importing countries of (whole) cardamom are Saudi Arabia (17%) and the United Arab Emirates (16%), representing an observable shift in destinations from South Asia towards the Middle East. Kuwait, Jordan and Pakistan are also important markets for cardamom. In 2013, the top importing countries – besides Saudi Arabia and the United Arab Emirates – were Singapore, USA and Bangladesh.

Currently, the local market price of whole black cardamom is around US\$7.5 per kg. There is no available data on international prices for black cardamom.⁸⁶ However, prices are subject to fluctuations. Black cardamom pods are typically two thirds seeds and one third husk. The price of seeds per kg is 50–100% higher than the price of whole pods.

FIGURE 17: GREEN CARDAMOM PRICE, 2014–2018⁸⁷



ETHIOPIAN EXPORTS

Ethiopia is a net exporter of black cardamom. However, the total export value of black cardamom has declined over the years (2013–2017) from US\$406,000 to US\$114,000. This was mainly due to a severe decline in supply to Saudi Arabia and Israel. Unlike most other spices, black cardamom is transported by air, which increases the price of the product and hence lowers demand.

THE OPPORTUNITY

The cardamom market is still small in Ethiopia, but prices are high, and the quality is generally good. This provides opportunities for companies with existing business relationships in the Middle East and experience of spices exports to the Middle East. Currently, Guatemala is a large exporter of black cardamom to the Middle East. Since Ethiopia is geographically closer to the Middle East than Guatemala, exports could be promising.

⁸⁴ Trade Map

⁸⁵ Nepal cardamom.pdf

⁸⁶ According to Trade Map, over the period 2014–2018, the price of green cardamom increased by 3.9%

⁸⁷ Indianspices.com

EXPORT REQUIREMENTS TO MATURE MARKETS

FOOD SAFETY MANAGEMENT

As food safety is a top priority in all food sectors in developed countries, many players request extra guarantees in the form of certification. Requirements by the retail sector and consumers regarding food safety and traceability are becoming stricter. Taking the European market as an example, spice and herb companies are subject to stringent checks, as standards are becoming more detailed and demanding, and compliance needs to be demonstrated by certification. These companies, in turn, pass part of this task onto their suppliers in countries of origin, for example through elaborate supplier questionnaires and requiring suppliers to meet companies' standards. To guarantee food safety and to allow appropriate action in cases of unsafe food, spices and herbs must increasingly be traceable throughout the entire supply chain. An important tool to control food safety hazards throughout the whole supply chain is the implementation of food safety management based on Hazard Analysis Critical Control Point (HACCP) principles. The HACCP system is integrated in the international food safety standard ISO 22000. HACCP planning consists of consecutive steps to:

1. identify food safety hazards;
2. determine how to control them;
3. implement corrective measures when the safety of the foods produced cannot be guaranteed.

LABELING

Clear labeling of spices and herbs is important for both bulk and pre-packed consumer products. Product labels should inform about composition, manufacturer, storage methods and preparation of the spice or herb. European labeling legislation applies to pre-packed consumer products and bulk products alike, but in slightly different ways. For consumer products, all information should be mentioned on the label; for bulk products, some of the mandatory information can be given in the commercial documents and does not need to be printed on the bag or label.

Legislation demands that pre-packed food products should state clearly whether they contain allergens. Spices and herbs, or mixtures thereof, can contain extraneous material (e.g. gluten, mustard or sesame seeds, milk, nuts) that can cause allergic reactions, and therefore must be labeled as potentially containing allergens.

STEAM STERILIZATION

EU buyers are increasingly asking for steam sterilized spices as a way to combat microbiological contamination (*Salmonella*). An important downside of steam sterilization is that it negatively affects the oil content, which creates the flavor. Steam sterilization can earn a significant premium of US\$0.20 per kg for suppliers who are able to supply spices that are steam sterilized at source. Investment in sterilization facilities are relatively costly (up to US\$1.1 million) in comparison to investments in rural cleaning and grading facilities. Potential investors should also be aware that steam sterilization is only effective if food safety is taken into account during drying, storage, packaging and transport. Contamination after sterilization should be avoided at all costs.

CORPORATE SOCIAL RESPONSIBILITY

In order to demonstrate compliance with corporate social responsibility (CSR) criteria, certification is the most common method. Sustainable certification in the spices and herbs sectors is still a niche market. However, European demand for sustainable food products continues to increase and is expected to grow in the future. There is a growing market for certified products with well-known consumer logos. A price premium needs to be paid for spices and herbs with a certificate to compensate for certification costs. Some of the most common certifications are:

- » *Rainforest Alliance and UTZ*: in January 2018, the two organizations merged, forming one of the biggest sustainability organizations in the world;
- » *Organic*: organic spices and herbs are produced and processed using natural techniques. To market spices and herbs in the European Union as 'organic', they must be grown using organic production methods which are laid down in the new organic legislation⁸⁸;
- » *Fair-trade certification*: spices and herbs traded according to fair-trade principles ensure a certain price and a premium for smallholders. This should help smallholders make a living. Examples of standards are Fairtrade and FairWild (for spices and herbs collected in the wild).

⁸⁸ https://ec.europa.eu/info/food-farming-fisheries/farming/organic-farming/future-organics_en

4. ENABLING ENVIRONMENT AND STAKEHOLDERS

The stakeholder landscape of the spices sector is diverse and includes government organizations, farmers' organizations, international donors, NGOs, research organizations and private sector companies, as well as about 5 million smallholder farmers engaged in spice production.⁸⁹ The GoE is intensifying its promotion of agro-industrial projects and the commercialization of the agricultural value chain. Spices have been declared as a focus area for development in this regard. Moreover, an increasing number of development partners and donors are supporting the spices sector. Farmers' organizations also play an important role in stimulating the production of spices, facilitating service provision and marketing products. Below is an overview of the government organizations, development partners, private sector organizations and farmers' organizations that play a key role in the development of the spices sector.

GOVERNMENT ORGANIZATIONS

MINISTRY OF AGRICULTURE

The Ministry of Agriculture (MoA) is responsible for the regulatory and policy framework for producing spices, as well as for providing production-related extension services. This includes good agricultural practices and post-harvest management, as well as regulating and facilitating the provision of inputs. The MoA has offices at each administrative level. At *woreda* (district) and *kebele* (the smallest administrative unit) level, the MoA employs development agents (DAs) who provide extension services to farmers. Although their staff capacity is limited (one DA usually covers tens up to hundreds of farmers⁹⁰), DAs are the main source of agricultural information for smallholders. While its main focus is on smallholder farmers, the MoA still gives considerable emphasis to commercial farms.

The MoA is also responsible for scaling-up and commercializing new technologies that come through the research pipeline or other proven sources. The Federal Cooperative Agency, part of the MoA, is involved in capacity building and overseeing cooperatives and unions.

In addition, the Agricultural Transformation Agency (ATA) is a national development agency active in promoting productivity and increasing the incomes of smallholder farmers. The ATA is involved in the implementation of several programs of the above-mentioned donors.

ETHIOPIA COFFEE AND TEA AUTHORITY

The Ethiopia Coffee and Tea Authority (ECTA) falls under the MoA and is responsible for controlling the quality of coffee, tea and spices, and promoting trade and industrial processing. Besides quality control, the ECTA trains DAs, conducts market research and collects data.

ETHIOPIAN INSTITUTE OF AGRICULTURAL RESEARCH

The Ethiopian Institute of Agricultural Research (EIAR) is in charge of the generation and dissemination of innovative technologies that contribute to yield increase. The main factors limiting the production of spices in Ethiopia are the lack of agronomic skills, and insufficient access to improved inputs and technologies, including improved seed varieties, pesticides and fertilizers. The EIAR plays an important role in addressing the above challenges and is responsible for variety development, breeding, adaptation and trials, supporting pre-scaling or early scaling-up initiatives, providing technical back-stopping, and training and advisory services. For example, it is currently involved in the development and testing of an organic pesticide to combat the fungus complex that destructed the country's ginger production.

Tepi Agricultural Research Center is the center of excellence for turmeric, cardamom, black pepper, black cumin, ginger and chilies. Areka Agricultural Research Center has extensive research activities relating to root crops, including ginger and turmeric. Jimma Agricultural Research Center is a public research organization serving as a national center of excellence for coffee, but also implements a black pepper program.

MINISTRY OF TRADE

The Ministry of Trade is responsible for coordinating and regulating all certification related to quality, conformity and export. This includes certificates of conformity and trade licenses.

⁸⁹ As reported by the Ministry of Agriculture

⁹⁰ As reported by the Ministry of Agriculture

DEVELOPMENT PARTNERS AND SECTOR ORGANIZATIONS

ETHIOPIAN SPICE, AROMATICS AND HERBS PRODUCTS GROWERS AND PROCESSORS ASSOCIATION

The Ethiopian Spice, Aromatics and Herbs Products Growers and Processors Association (ESAHPGPA) is the umbrella organization for the Ethiopian spices, herbs and aromatic sectors. It represents the interests of its members in all matters regarding the production, processing, packaging, quality assurance, food safety and marketing of spices, herbs and aromatics, including oleoresins, essential oils and seasonings. In August 2014, the ESAHGPA was established as a private sector association under the Ministry of Industry. Currently, the association has over 45 members.

ESAHPGPA's mission is to increase and diversify foreign currency inflow by matching the quality of spices, herbs and aromatic plants with international standards, thereby creating improved income and additional jobs for actors in the spices, herbs and aromatic sectors. The association aims to attract foreign and local investments, and to create market linkages and networks between all stakeholders in the spices, herbs and aromatic sectors.

ETHIOPIA-NETHERLANDS TRADE FOR AGRICULTURAL GROWTH (ENTAG)

ENTAG is a five-year project running from 2016–2020 that supports private sector development and trade in Ethiopia as part of the Bilateral Ethiopian–Netherlands Effort for Food, Income and Trade Partnership (BENEFIT Partnership). Spices is one of the focus sectors of ENTAG, with the aim of increasing agribusiness productivity, trade and foreign direct investment by strengthening the private sector in working more effectively with smallholders in applying new technologies and accessing finance for investment purposes. ENTAG has provided training to hundreds of model farmers, private companies, farmers' unions and cooperatives, traders and exporters, agricultural experts and NGOs on improved best practices of doing sustainable agribusiness. It has also organized numerous trade missions and business platforms with stakeholders from within and outside Ethiopia. ENTAG has attempted to remove bottlenecks facing the spices sector and, among other activities, drafted the first Ethiopian spice market regulation.



OTHER DEVELOPMENT PARTNERS AND DONORS

There are numerous national and international development organizations and donors active in Ethiopia's agricultural sector. These include bilateral development organizations such as USAID, DFID, SNV, JICA, GIZ and SIDA, as well as many embassies and mission offices from Western countries. In addition, there are several international organizations, NGOs and UN agencies active in rural development in Ethiopia, including the World Bank, the African Development Bank, FAO, UNDP, IFAD, Farm Africa and TechnoServe.

FARMERS' ORGANIZATIONS

FARMERS COOPERATIVE UNION

Farmers Cooperative Union is a multi-purpose agricultural union, representing 33,000 farmers. The union comprises 42 primary coffee cooperatives and 22 primary ginger–turmeric–honey cooperatives in Wolaita and Hadero *woredas*. The primary cooperatives are responsible for drying and processing spices around Wolaita and Hadero *woredas*. Farmers Cooperative Union is based in Addis Ababa.

TSEHAY MULTIPURPOSE FARMERS' UNION LIMITED

Tsehay Multipurpose Farmers' Union Limited was founded in 2000 as a multi-purpose agricultural union. It is a union of 112 primary cooperatives with a total of 94,000 members and 45 permanent employees. The primary cooperatives are mainly involved in the production of sesame, chickpea, malt barley, *teff*, black cumin, white cumin and ginger. Tsehay is responsible for sourcing from its members, but also supplies inputs (such as fertilizers and herbicides) and construction materials at a discount to members.

ANDINET FARMERS MULTIPURPOSE COOPERATIVE UNION

Founded in 2012, Andinet is a union of 106 cooperatives with over 14,000 farmers located in Bench Sheko Zone (previously Bench Maji Zone), SNNPR. Fifteen cooperatives specialize in the production of spices, mainly black cardamom, turmeric and black pepper. Annual production of turmeric is about 45 MT. Andinet takes care of marketing and sales of the produce, while the cooperatives are responsible for drying and processing the spices. It is not exporting at the moment due to relatively low international prices.

BENCH MAJI COFFEE FARMERS COOPERATIVE UNION

Bench Maji was established in 2005. It has its main office in Mizan Teferi and an export office in Addis Ababa. It is a union of 65 cooperatives with 13,000 farmers in Bench Sheko Zone, SNNPR. An average cooperative has about 150 farmers, who are shareholders of the cooperative. Each cooperative is subdivided into farmer groups of about 10–15 farmers. Bench Maji exports about 150 containers of coffee annually, organic certified and recognized by the Rainforest Alliance. Regarding spices, the Union trades turmeric, black pepper, cardamom and long pepper. In 2019, it planned to source 435 MT of turmeric from its farmers. Bench Maji currently sells in bulk to exporters, but does not export spices directly. The cooperatives are responsible for drying under the supervision of post-harvest managers employed by Bench Maji. It also provides training and profit-sharing to its farmers, and has been selected as a model union.



